



*What does HKPISA 2003 tell us about
Literacy Performance of our students?*



HKPISA

Results from HKPISA 2003

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OECD/PISA 2003

Western Europe

Austria
Belgium
Denmark
Finland
France
Germany
Iceland
Ireland
Italy
Liechtenstein
Luxembourg
The Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom

Asia/Pacific Rim

Australia
Hong Kong, China
Indonesia
Japan
Korea
Macao, China
New Zealand
Thailand

Eastern Europe

Czech Republic
Greece
Hungary
Latvia
Poland
Russian Federation
Serbia & Montenegro
Slovak Republic
Turkey

America & Others

Brazil
Canada
Mexico
Tunisia
United States
Uruguay

Basic Design

- Age-based target population (*15 year-olds*)
- National samples of 150 schools with 5,000 students
- Two hours of testing time for student
- Questionnaires for students and schools (parent in HK)
- Sample
 - 275,000 students
 - 41 participating countries/regions

Testing Scope

- Competencies for real-life situations not constrained by national curricula.
- Four Domains:

Mathematics



Problem Solving



Science



Reading



The Collaborating Parties

- International Parties
 - OECD
 - PISA CONSORTIUM
- Hong Kong Parties
 - HKPISA Centre, HKIER, CUHK
 - EMB, HKSAR
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SUBJECT EXPERT GROUPS

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Total Number of Schools Participated in HKPISA 2003

Explicit Strata	Implicit Strata	Total Number of Schools in HK	Number of Schools Participated (OECD)
Government	High Ability	17	8
	Medium Ability	9	3
	Low Ability	10	4
	Sub-total	36	15
Aided	High Ability	127	50
	Medium Ability	124	41
	Low Ability	107	33
	Sub-total	358	124
Independent	Local (DSS)	29	5
	International	20	1
	Sub-total	49	6
	Total	443	145

Distribution of Grade Levels

Form 1	211	4.7%
Form 2	439	9.8%
Form 3	1132	25.3%
Form 4	2692	60.1%
Form 5	4	0.1%
Total	4478	100%

Overview

1. Overall Quality from HKPISA+ to HKPISA2003
2. Overall Equality between
 - between schools
 - boys and girls
 - high and low achievers
 - high and low SES students
3. Factors Related to High Achieving students in HK
4. Factors Related to High Achieving schools in HK
5. Implications for Policy, Practice, and Research

Mean Performance of 15-year-Olds in the Top Ten Countries

(shaded area indicates scores significantly different from Hong Kong)

Mathematical Literacy			Reading Literacy			Scientific Literacy			Problem Solving Skills		
Country	Mean	S.E.	Country	Mean	S.E.	Country	Mean	S.E.	Country	Mean	S.E.
Hong Kong	550	(4.5)	Finland	543	(1.6)	Finland	548	(1.9)	Korea	550	(3.1)
Finland	544	(1.9)	Korea	534	(3.1)	Japan	548	(4.1)	Hong Kong	548	(4.2)
Korea	542	(3.2)	Canada	528	(1.7)	Hong Kong	539	(4.3)	Finland	548	(1.9)
Netherlands	538	(3.1)	Australia	525	(2.1)	Korea	538	(3.5)	Japan	547	(4.1)
Liechtenstein	536	(4.1)	Liechtenstein	525	(3.6)	Liechtenstein	525	(4.3)	New Zealand	533	(2.2)
Japan	534	(4.0)	New Zealand	522	(2.5)	Australia	525	(2.1)	Macao	532	(2.5)
Canada	532	(1.8)	Ireland	515	(2.6)	Macao	525	(3.0)	Australia	530	(2.0)
Belgium	529	(2.3)	Sweden	514	(2.4)	Netherlands	524	(3.1)	Liechtenstein	529	(3.9)
Macao	527	(2.9)	Netherlands	513	(2.9)	Czech Republic	523	(3.4)	Canada	529	(1.7)
Switzerland	527	(3.4)	Hong Kong	510	(3.7)	New Zealand	521	(2.4)	Belgium	525	(2.2)

Social Background and Student Performance

High performance

Student performance in PISA

Low

Social background is a powerful factor influencing student performance

(Parental occupation, wealth, cultural resources, parental education, family structure, immigrant status)

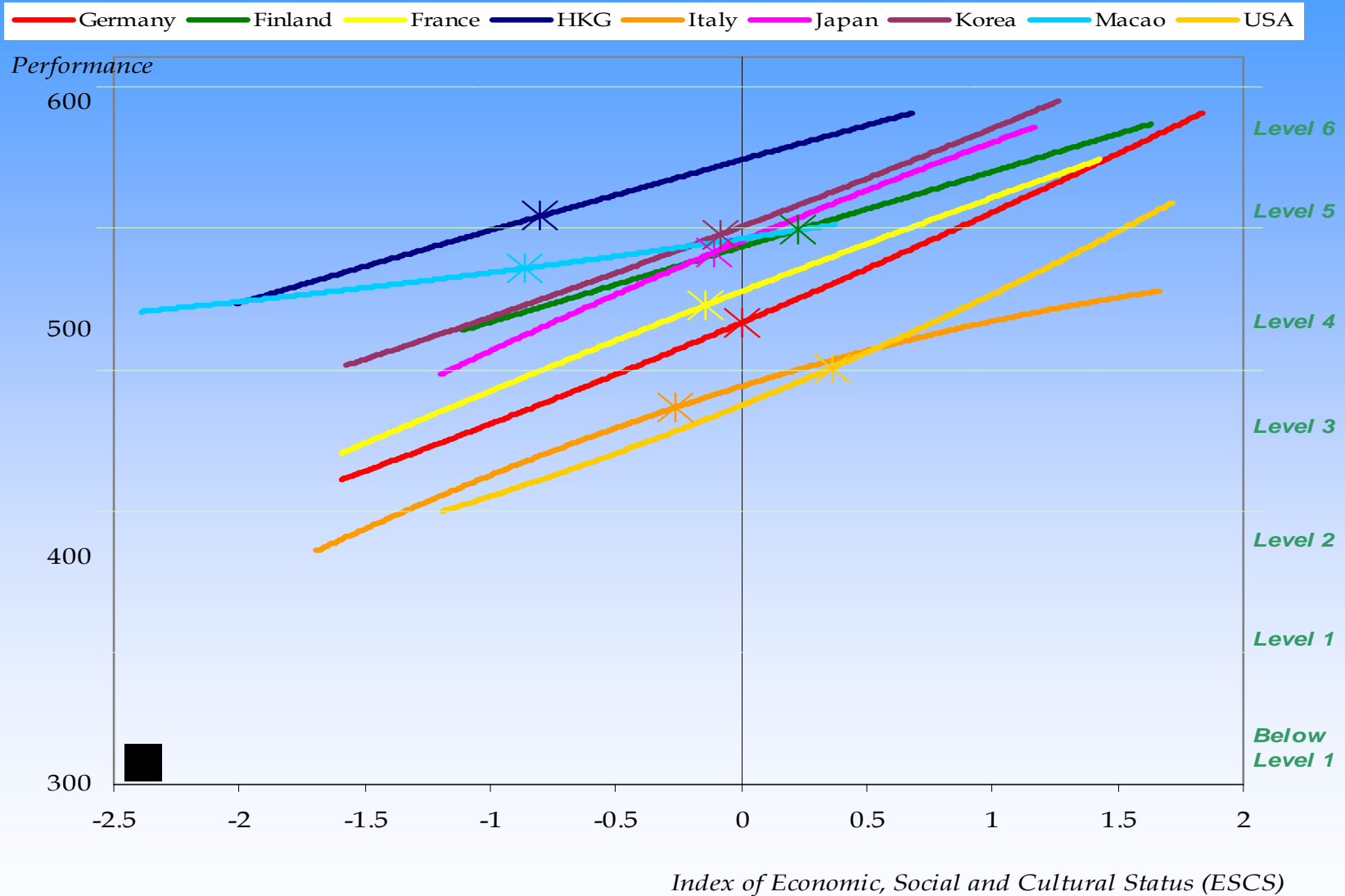
But peer performance does not automatically follow -> School and Parent can make a difference!

PISA Index of social background

High

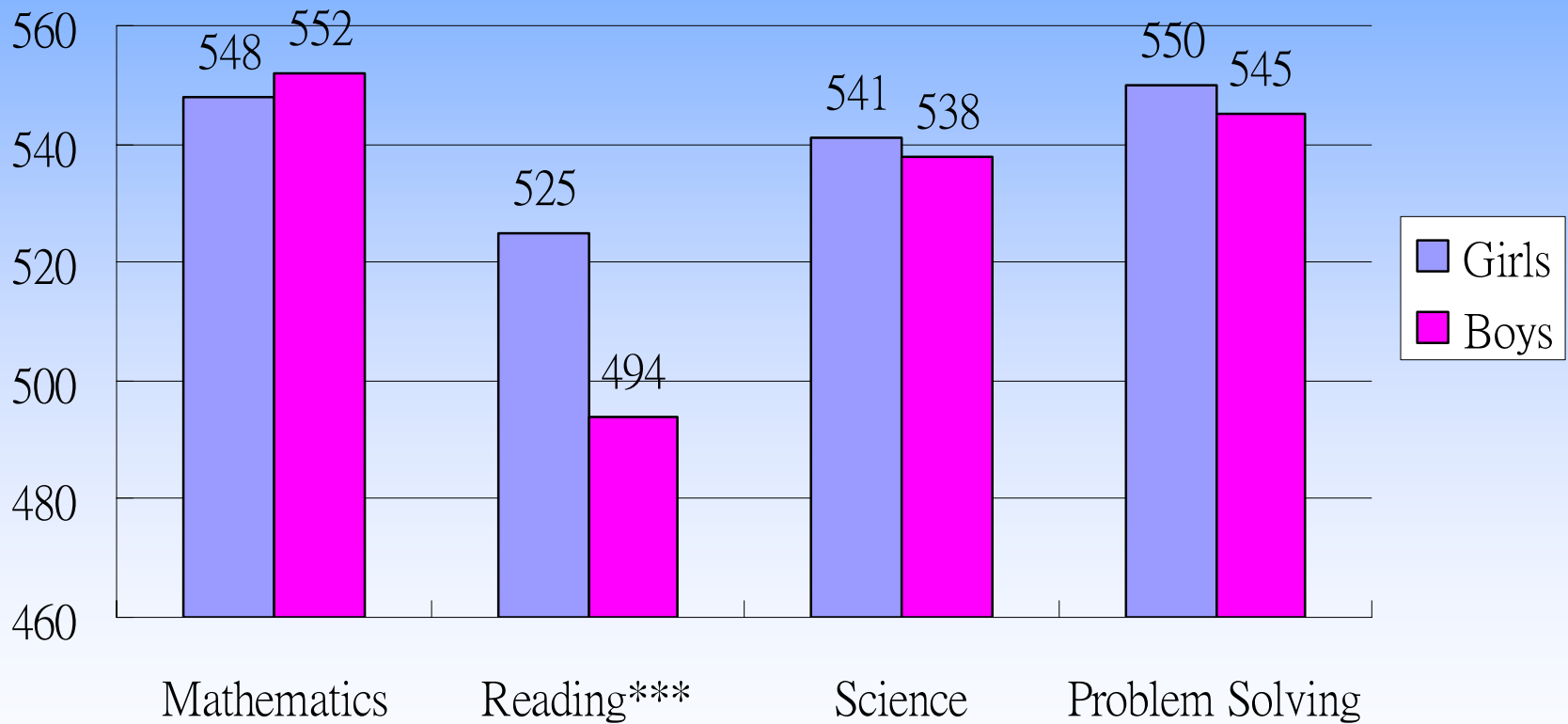


Socio-Economic and Cultural Background and Student Performance in Mathematics

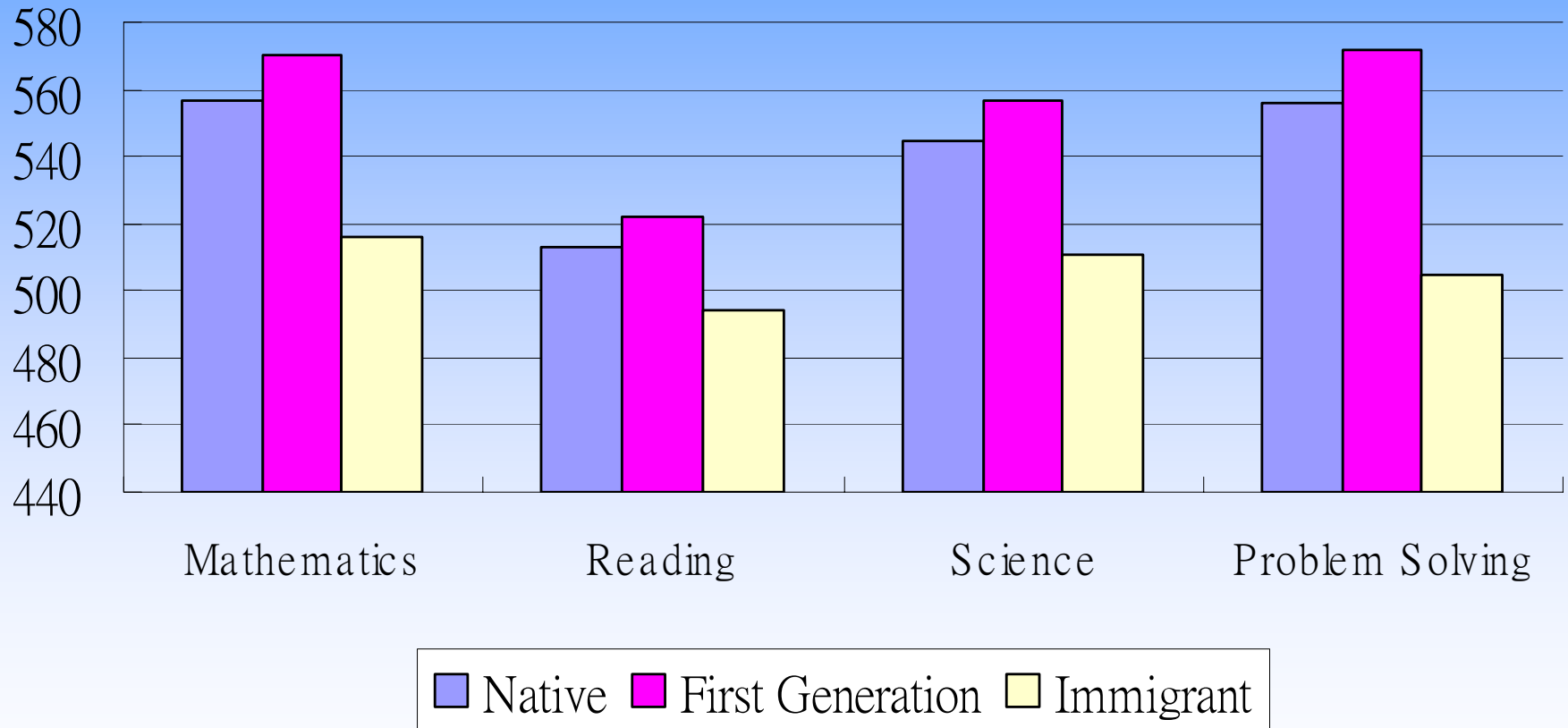


Note: The ESCS index for PISA 2003 is derived from three variables related to family background: highest parental education, highest parental occupation and number of home possessions related to classical culture.

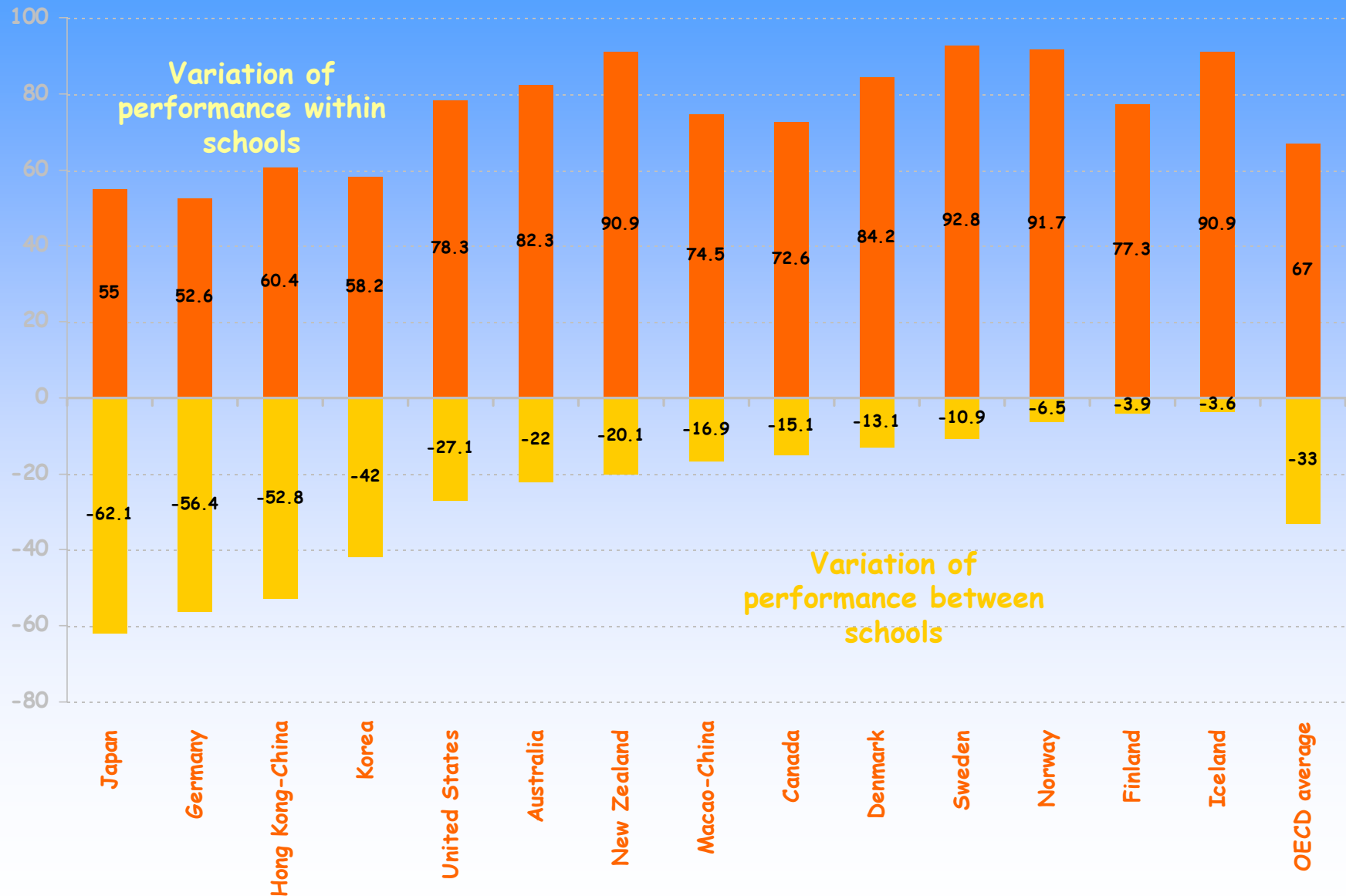
Gender Difference in Literacy Performance in Hong Kong



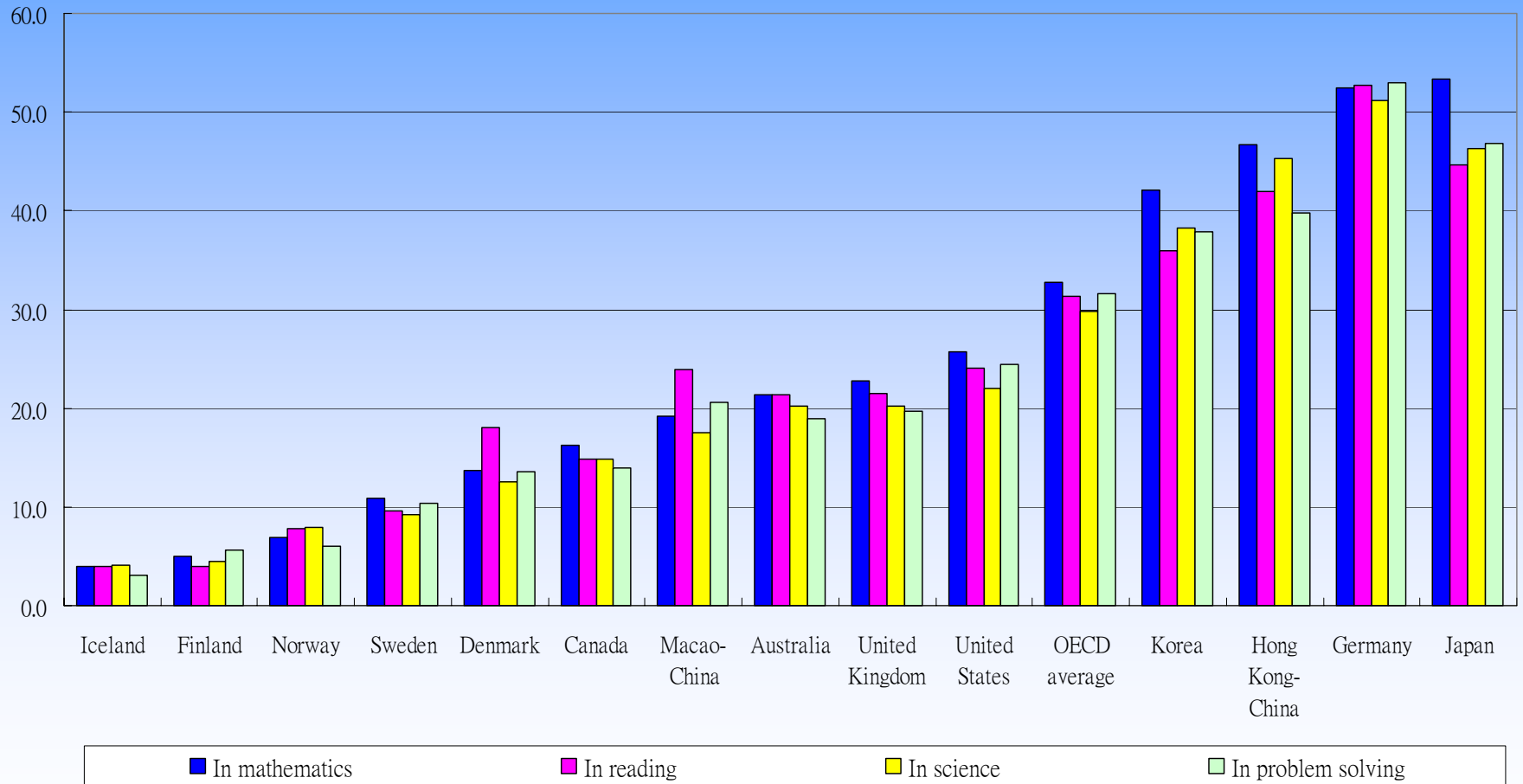
Difference in Literacy Performance for immigrant and local students in Hong Kong



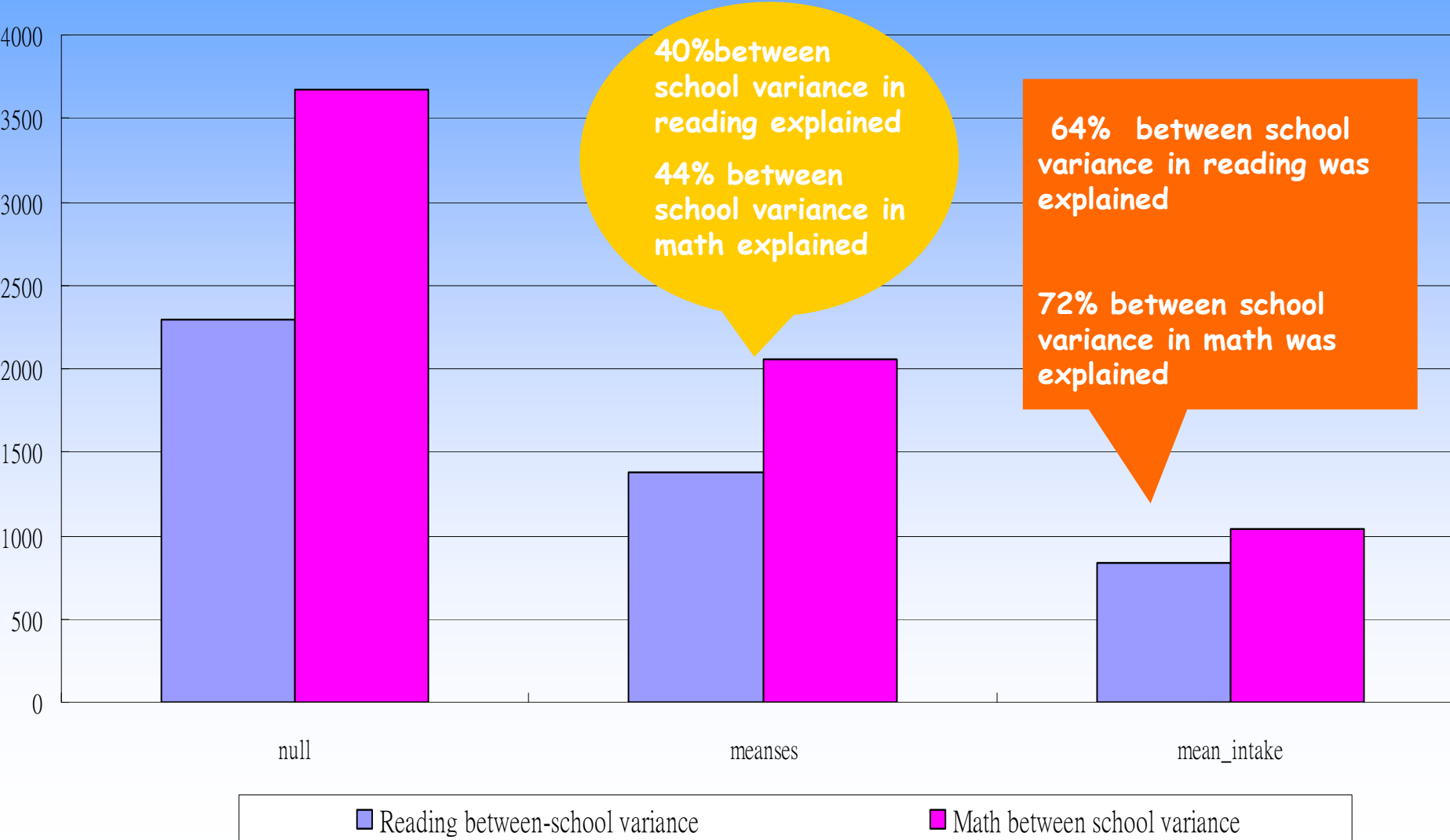
Variation in student performance in mathematics



Percentage of between school variation within selected countries in four domains



Between School Variation Explained by School Social and Academic Intake in HKPISA2003



Summary

Strength of the HK educational system

- High Quality in Maths, Science and Problem Solving
- Low gender difference in Maths, Science and Problem Solving
- Low impact of SES

Weaknesses of the HK educational system

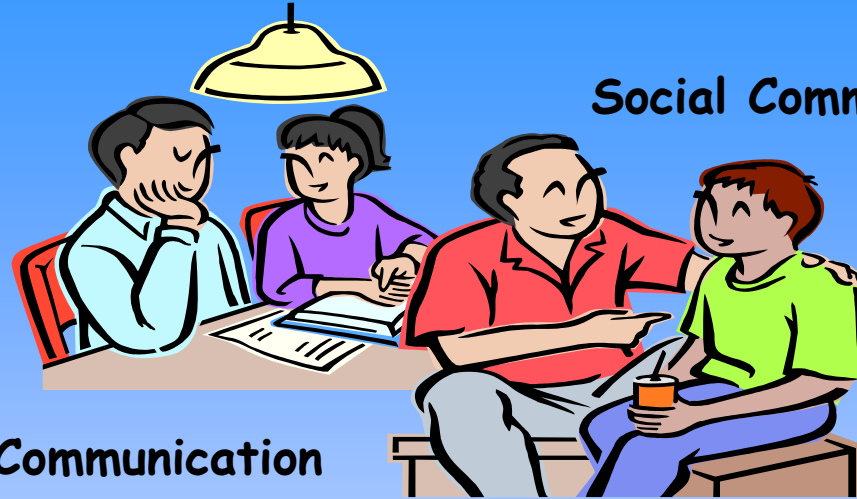
- High Academic Inequality among schools
- High gender gap in Reading
- High achievement gap between immigrant and first generation/local students

Characteristics of Effective Learners in HK

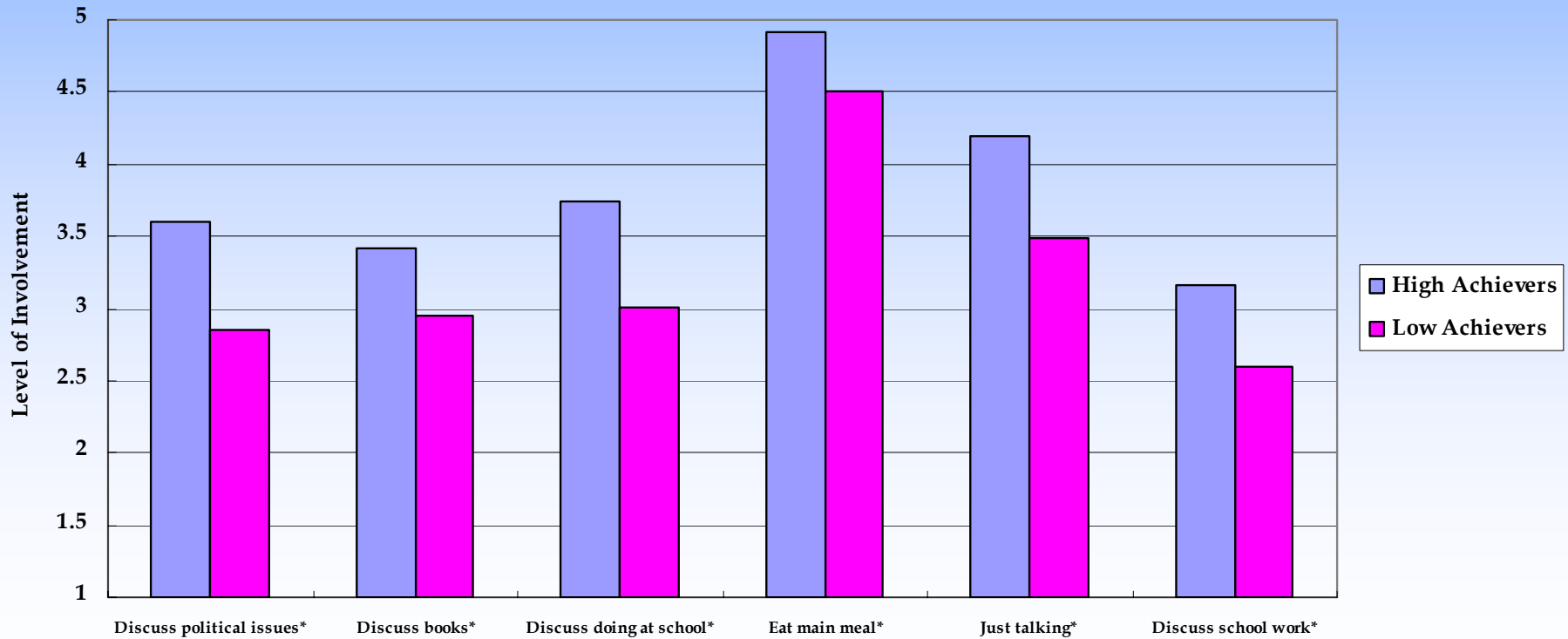
- Active home based parental involvement
- Positive self-concept and self-efficacy, higher interest & enjoyment and instrumental motivation, and lower anxiety
- The use of multiple learning strategies like control strategy, cooperative learning, competitive learning, and elaboration



Home Based Parental Involvement in HKPISA 2003



Cultural Communication



Students' Self-Related Cognitions in Mathematics in HKPISA 2003

Self-concept:
"I have always believed that Mathematics is one of my best subjects."

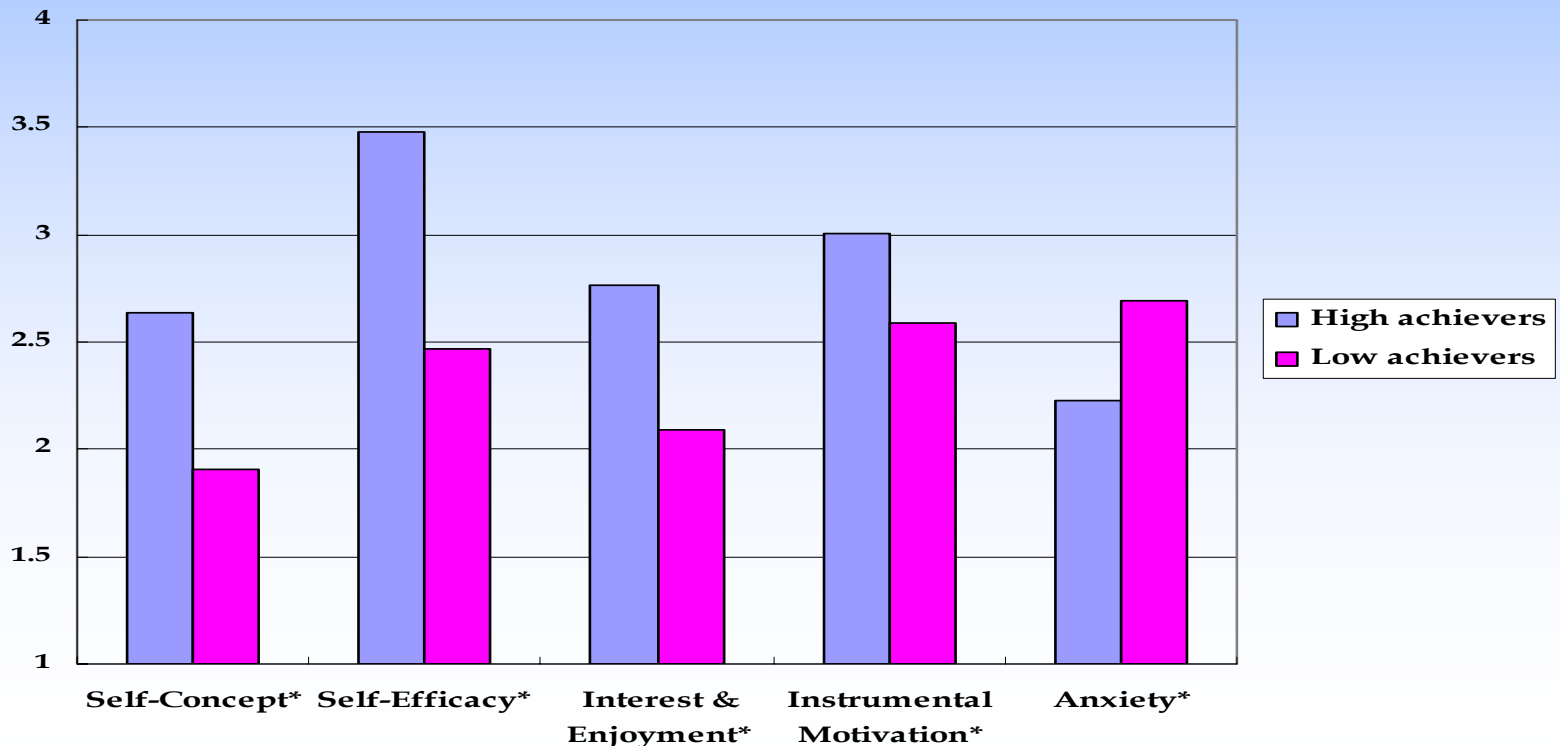
Interest & enjoyment:
"I do Mathematics because I enjoy it."

Self-efficacy:
"How confident do you feel about having to do Mathematical tasks like understanding graphs presented in newspapers."

Instrumental Motivation:
"Learning Mathematics is worthwhile for me because it will improve my career prospects."

Anxiety:
"I feel helpless when doing a Mathematical problem."

Self-Related Cognitions



Students' Learning Strategies in Mathematics in HKPISA 2003

Learning Strategies

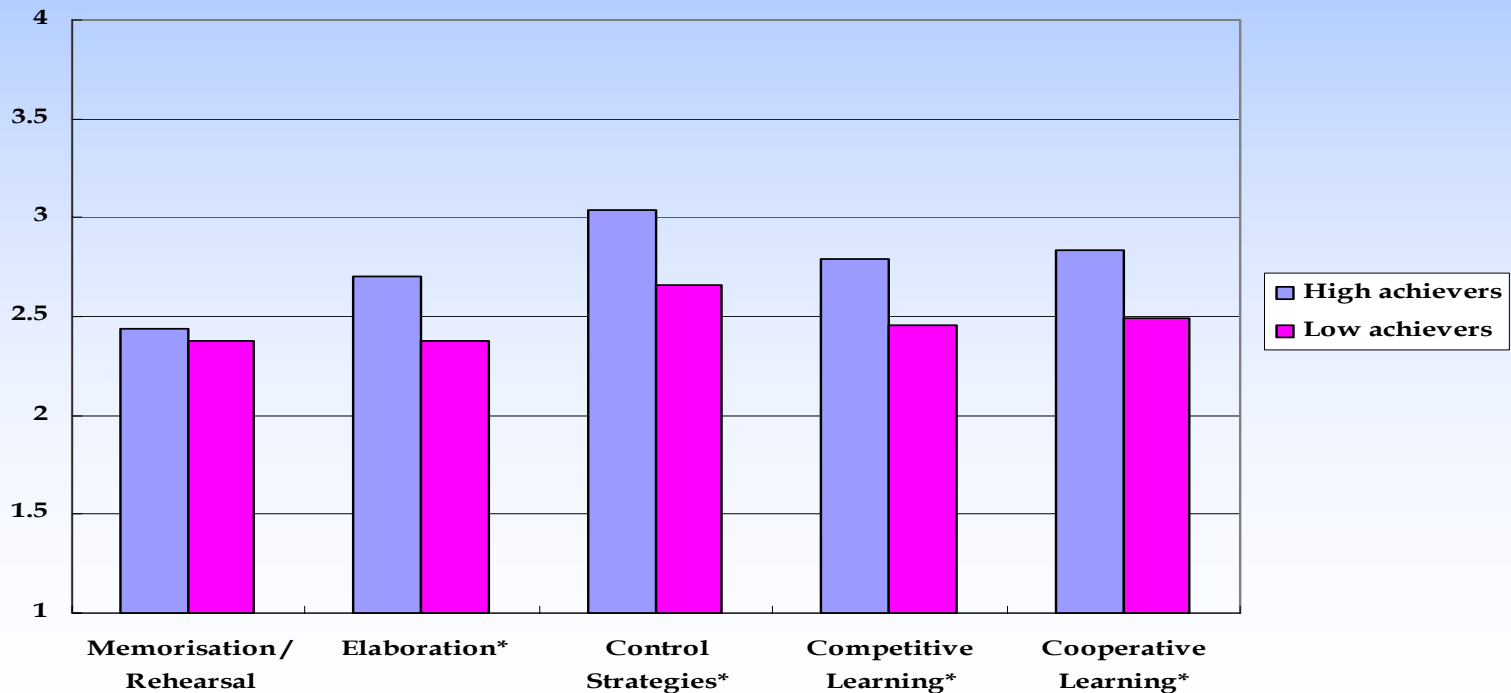
Competitive Learning:
"I try very hard in Mathematics because I want to do better in the exam than the others."

Control Strategies:
"When I cannot understand something in Mathematics, I always search for more information to clarify the problem."

Memorization/Rehearsal:
"To learn Mathematics, I try to remember every step in a procedure."

Cooperative Learning:
"I do my best work in Mathematics when work with other students."

Elaboration:
"I try to understand something in Mathematics by relating them to things I already know."



Characteristics of Effective Schools in HK

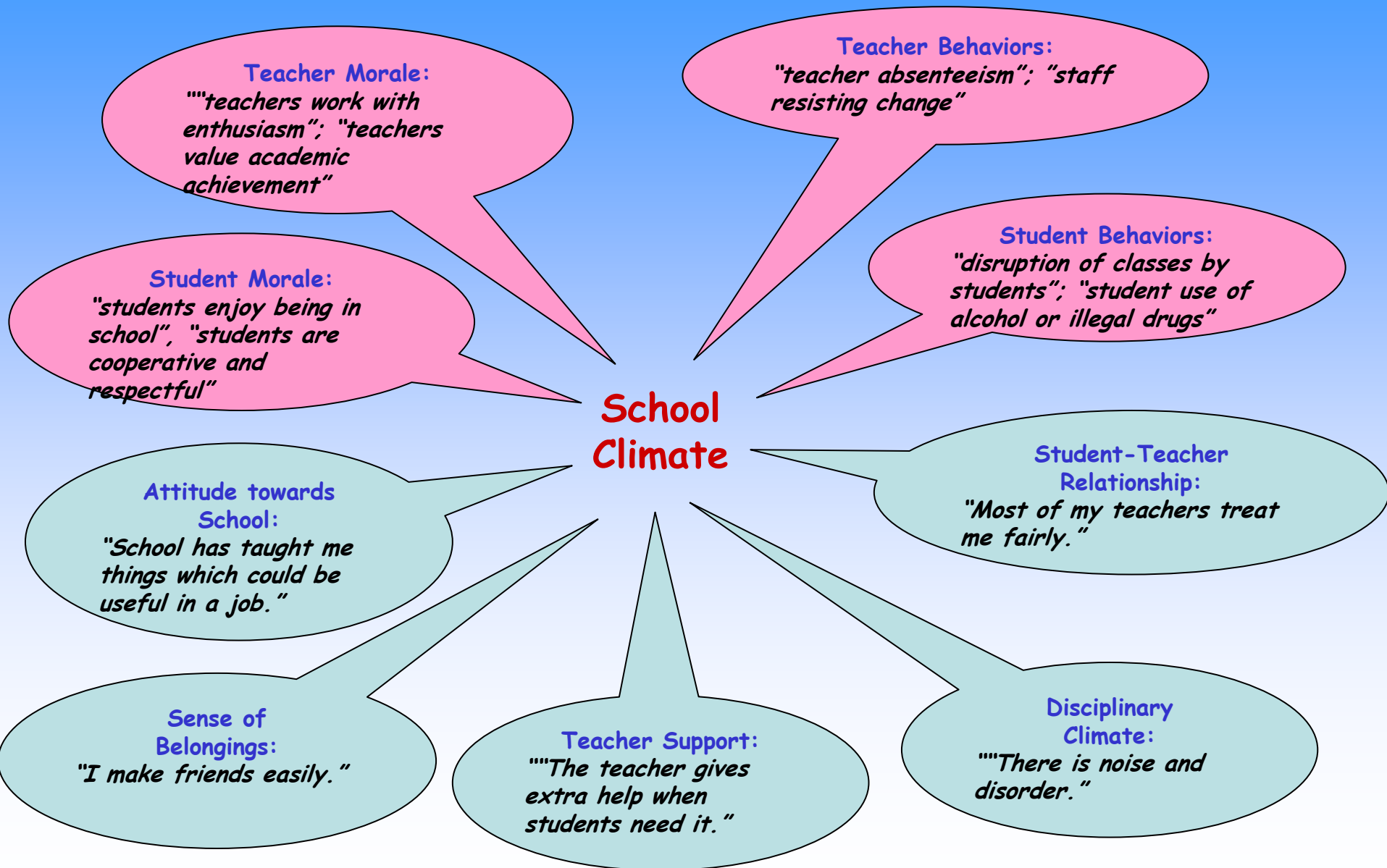
Principals' view

- High teacher morale
- High student morale
- Good student behavior

Students' View

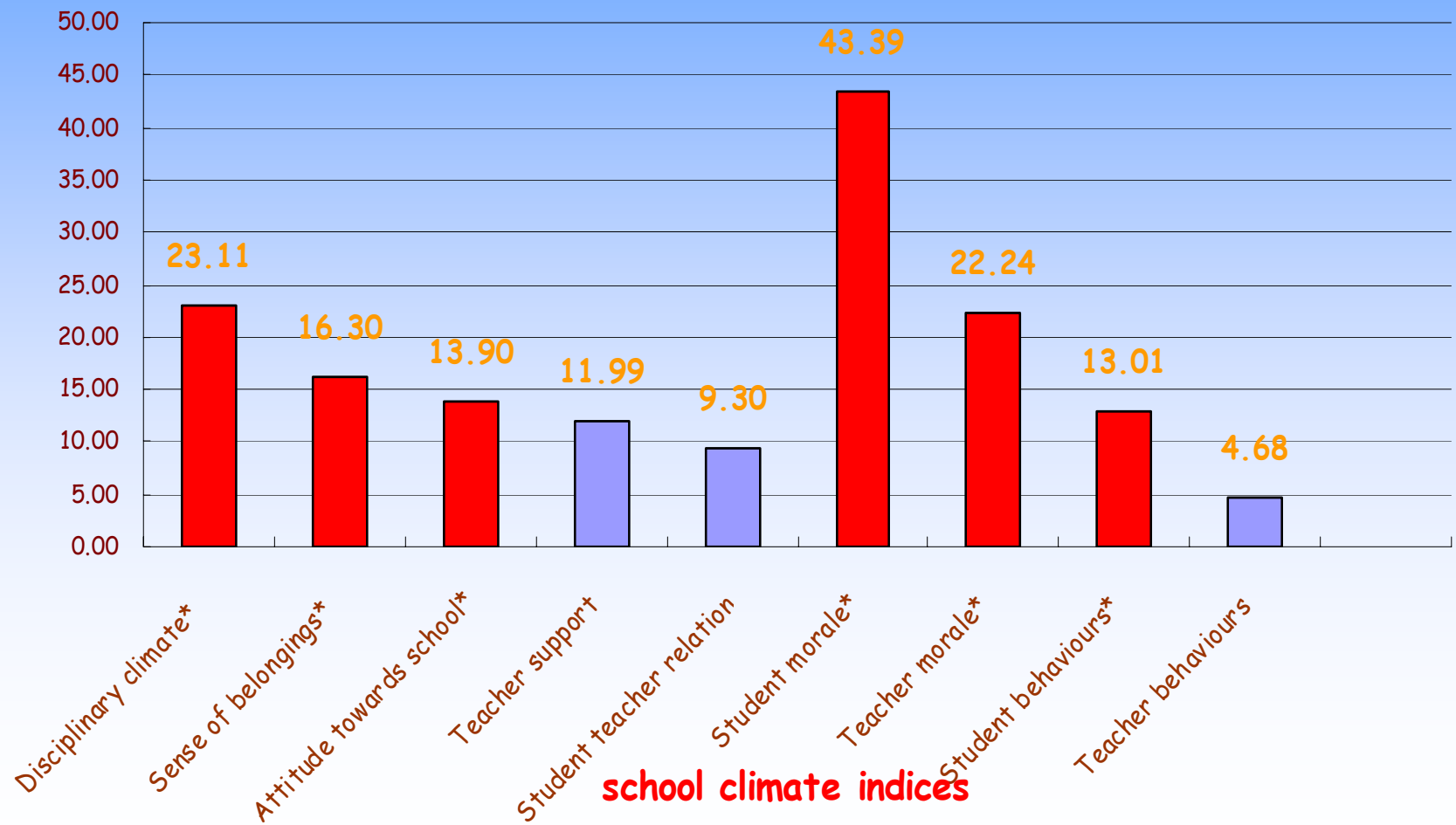
- Good disciplinary climate
- Positive attitude towards schools
- Strong sense of belonging

Indices of School Climate in HKPISA 2003



Effect of Indices of School Climate on Math Performance in Hong Kong

Change in Math scores per unit increase in the indices



Implication for Policy and Practice

Student Learning

- Positive self-related cognition
- Effective learning strategies

Family & School Level

- Active Parental involvement
- Positive School Climate

System Level

- More support for the disadvantaged
- Reading climate at home, in school and the community

Looking Forward

- Future Development
 - Research: Evidence based school profile
 - Professional Development of school teachers
- Future PISA assessments will show whether progress is made in the right direction
 - 2006 Science is the major domain



HKPISA



Thank you !

Further information

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