



To News Editor
For Immediate Release

5 December 2007

Programme for International Student Assessment: Accomplishment and Challenges of Hong Kong Students

In the recent Programme for International Student Assessment (PISA 2006), Hong Kong 15-year-old students perform well compared with their international counterparts. They rank second in Science, remain the top in Mathematics, and advance to the third in Reading (Chinese) among 57 participating countries and regions worldwide (Figure 1).

Researchers examine equality in education, in particular, how students' socio-economic background (SES), gender and immigrant status affect their competencies. It is found that the impact of students' SES including occupation and education level of their parents has relatively small association with student performance (Figure 2). Yet significant gender difference is demonstrated in both mathematics and reading performances. Boys outperform girls by 16 points in mathematics and girls outperform boys by 31 points in reading (Figure 3). Immigrant students who were not born in Hong Kong performed significantly poorer than students born locally (Figure 4).

Various student and parent factors that might have impact on students' literacy performance are also examined. Regarding student factors, self-belief and motivation are important factors associated with student's performance. High achievers tend to have higher self-concept and self-efficacy. They also show higher interest and enjoyment in learning and motivated for better career prospect (Figure 5). Findings also suggest that students who report stronger sense of general or personal values in science, awareness of environmental issues, and responsibility for sustainable development tend to perform better in scientific literacy (Figure 6).

Regarding parent factors, findings suggest that parents' perception of school quality, and their involvement with the child's education at home and in school have moderate positive association with students' science performance. Students with parents more satisfied with the quality of school learning tend to perform better. For parents reported more arrangement of science activities when their children were 10 years old, their children's science performance at age 15 tends to be better. Moreover, the greater is the level of parental involvement in the child's learning at home (such as communicating with their children more often on various topics - discussing books, films, social issues, television programmes and school work), the higher is their children's performance. The extent parents' volunteered or participated in the school's activities also has positive relationship with their children's performance. However, students with parents communicated most with the school appear to have the poorest performance. One possible explanation is that teacher-parent contact is often initiated by incidents related to students' academic or behavioral problems (Figure 7).

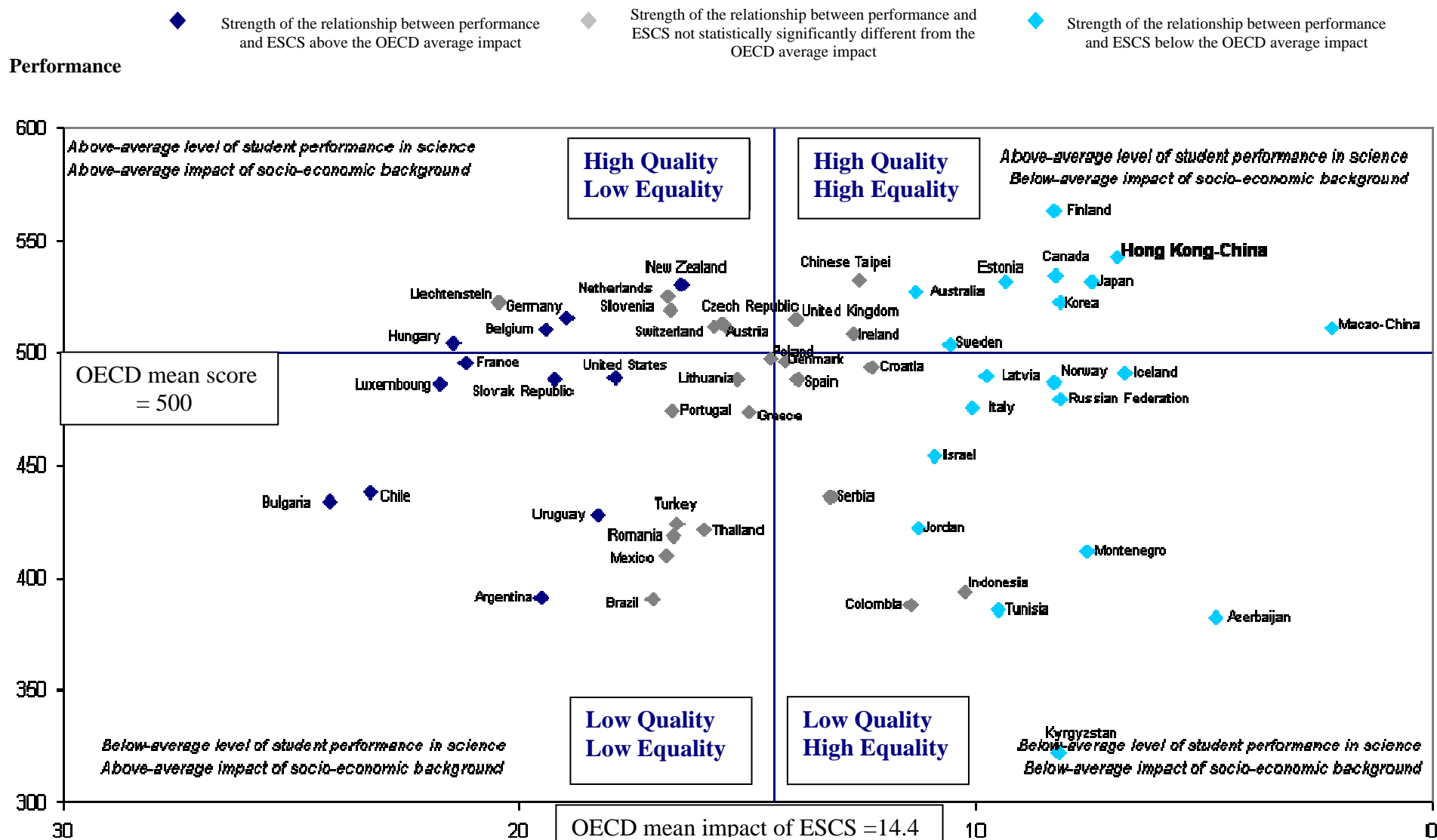
Other policy issues such as the impact of high academic segregation between schools (Figure 8), educational expenditure and language policy are all important concerns and should be further studied.

Media enquiries: Ms. Chan Tsz-ling, Communications and Public Relations Office,
CUHK (tel: 2609-8896)

Figure 1 Performance of 15-Year-Old Students in Scientific, Mathematical, and Reading Literacy in PISA 2006

Science			Mathematics			Reading		
	Mean	S.E.		Mean	S.E.		Mean	S.E.
Finland	563	(2.0)	Chinese Taipei	549	(4.1)	Korea	556	(3.8)
Hong Kong-China	542	(2.5)	Finland	548	(2.3)	Finland	547	(2.1)
Canada	534	(2.0)	Hong Kong-China	547	(2.7)	Hong Kong-China	536	(2.4)
Chinese Taipei	532	(3.6)	Korea	547	(3.8)	Canada	527	(2.4)
Estonia	531	(2.5)	Netherlands	531	(2.6)	New Zealand	521	(3.0)
Japan	531	(3.4)	Switzerland	530	(3.2)	Ireland	517	(3.5)
New Zealand	530	(2.7)	Canada	527	(2.0)	Australia	513	(2.1)
Australia	527	(2.3)	Macao-China	525	(1.3)	Liechtenstein	510	(3.9)
Netherlands	525	(2.7)	Liechtenstein	525	(4.2)	Poland	508	(2.8)
Liechtenstein	522	(4.1)	Japan	523	(3.3)	Sweden	507	(3.4)
Korea	522	(3.4)	New Zealand	522	(2.4)	Netherlands	507	(2.9)
Slovenia	519	(1.1)	Belgium	520	(3.0)	Belgium	501	(3.0)
Germany	516	(3.8)	Australia	520	(2.2)	Estonia	501	(2.9)
United Kingdom	515	(2.3)	Estonia	515	(2.7)	Switzerland	499	(3.1)
Czech Republic	513	(3.5)	Denmark	513	(2.6)	Japan	498	(3.6)
Switzerland	512	(3.2)	Czech Republic	510	(3.6)	Chinese Taipei	496	(3.4)
Macao-China	511	(1.1)	Iceland	506	(1.8)	United Kingdom	495	(2.3)
Austria	511	(3.9)	Austria	505	(3.7)	Germany	495	(4.4)
Belgium	510	(2.5)	Slovenia	504	(1.0)	Denmark	494	(3.2)
Ireland	508	(3.2)	Germany	504	(3.9)	Slovenia	494	(1.0)
Hungary	504	(2.7)	Sweden	502	(2.4)	Macao-China	492	(1.1)
Sweden	503	(2.4)	Ireland	501	(2.8)	<i>OECD average</i>	492	(0.6)
<i>OECD average</i>	500	(0.5)	<i>OECD average</i>	498	(0.5)	Austria	490	(4.1)
Poland	498	(2.3)	France	496	(3.2)	France	488	(4.1)
Denmark	496	(3.1)	United Kingdom	495	(2.1)	Iceland	484	(1.9)
France	495	(3.4)	Poland	495	(2.4)	Norway	484	(3.2)
Croatia	493	(2.4)	Slovak Republic	492	(2.8)	Czech Republic	483	(4.2)
Iceland	491	(1.6)	Hungary	491	(2.9)	Hungary	482	(3.3)
Latvia	490	(3.0)	Luxembourg	490	(1.1)	Latvia	479	(3.7)
United States	489	(4.2)	Norway	490	(2.6)	Luxembourg	479	(1.3)
Slovak Republic	488	(2.6)	Lithuania	486	(2.9)	Croatia	477	(2.8)
Spain	488	(2.6)	Latvia	486	(3.0)	Portugal	472	(3.6)
Lithuania	488	(2.8)	Spain	480	(2.3)	Lithuania	470	(3.0)
Norway	487	(3.1)	Azerbaijan	476	(2.3)	Italy	469	(2.4)
Luxembourg	486	(1.1)	Russian Federation	476	(3.9)	Slovak Republic	466	(3.1)
Russian Federation	479	(3.7)	United States	474	(4.0)	Spain	461	(2.2)
Italy	475	(2.0)	Croatia	467	(2.4)	Greece	460	(4.0)
Portugal	474	(3.0)	Portugal	466	(3.1)	Turkey	447	(4.2)
Greece	473	(3.2)	Italy	462	(2.3)	Chile	442	(5.0)
Israel	454	(3.7)	Greece	459	(3.0)	Russian Federation	440	(4.3)
Chile	438	(4.3)	Israel	442	(4.3)	Israel	439	(4.6)
Serbia	436	(3.0)	Serbia	435	(3.5)	Thailand	417	(2.6)
Bulgaria	434	(6.1)	Uruguay	427	(2.6)	Uruguay	413	(3.4)
Uruguay	428	(2.7)	Turkey	424	(4.9)	Mexico	410	(3.1)
Turkey	424	(3.8)	Thailand	417	(2.3)	Bulgaria	402	(6.9)
Jordan	422	(2.8)	Romania	415	(4.2)	Serbia	401	(3.5)
Thailand	421	(2.1)	Bulgaria	413	(6.1)	Jordan	401	(3.3)
Romania	418	(4.2)	Chile	411	(4.6)	Romania	396	(4.7)
Montenegro	412	(1.1)	Mexico	406	(2.9)	Indonesia	393	(5.9)
Mexico	410	(2.7)	Montenegro	399	(1.4)	Brazil	393	(3.7)
Indonesia	393	(5.7)	Indonesia	391	(5.6)	Montenegro	392	(1.2)
Argentina	391	(6.1)	Jordan	384	(3.3)	Colombia	385	(5.1)
Brazil	390	(2.8)	Argentina	381	(6.2)	Tunisia	380	(4.0)
Colombia	388	(3.4)	Colombia	370	(3.8)	Argentina	374	(7.2)
Tunisia	386	(3.0)	Brazil	370	(2.9)	Azerbaijan	353	(3.1)
Azerbaijan	382	(2.8)	Tunisia	365	(4.0)	Qatar	312	(1.2)
Qatar	349	(0.9)	Qatar	318	(1.0)	Kyrgyzstan	285	(3.5)
Kyrgyzstan	322	(2.9)	Kyrgyzstan	311	(3.4)	United States	m	m

Figure 2 Performance in Science and the Impact of Economic, Social and Cultural Status (ESCS)



Source: OECD PISA 2006 international report, Figure 4.10

Figure 3. Gender Differences in Scientific, Reading and Mathematical Literacy in HKPISA 2000+, HKPISA 2003 and HKPISA 2006

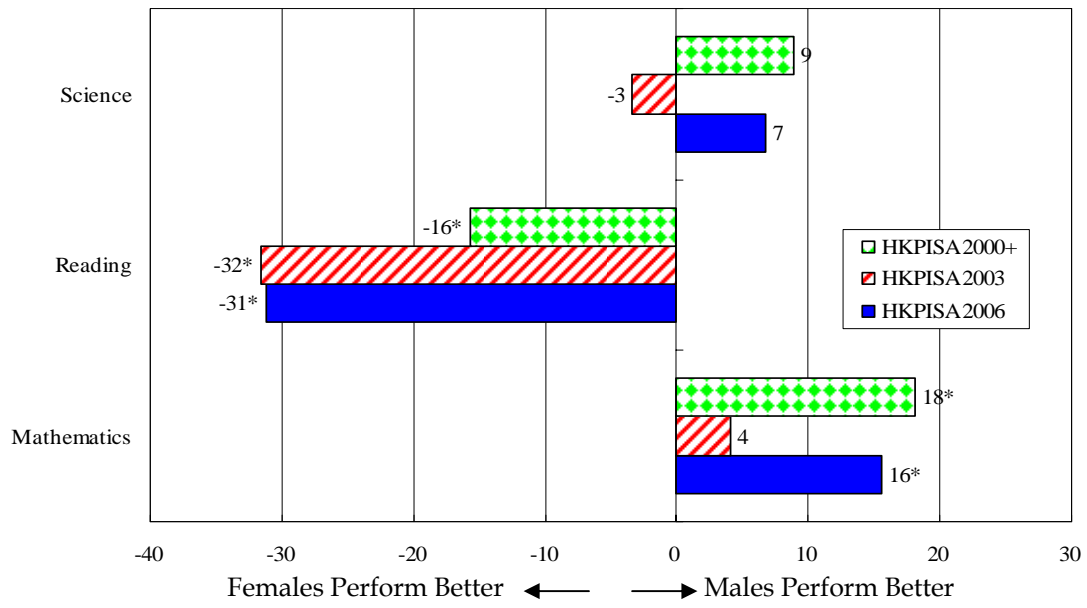


Figure 4 PISA 2006 Literacy Performance of Hong Kong Students by Immigration Status

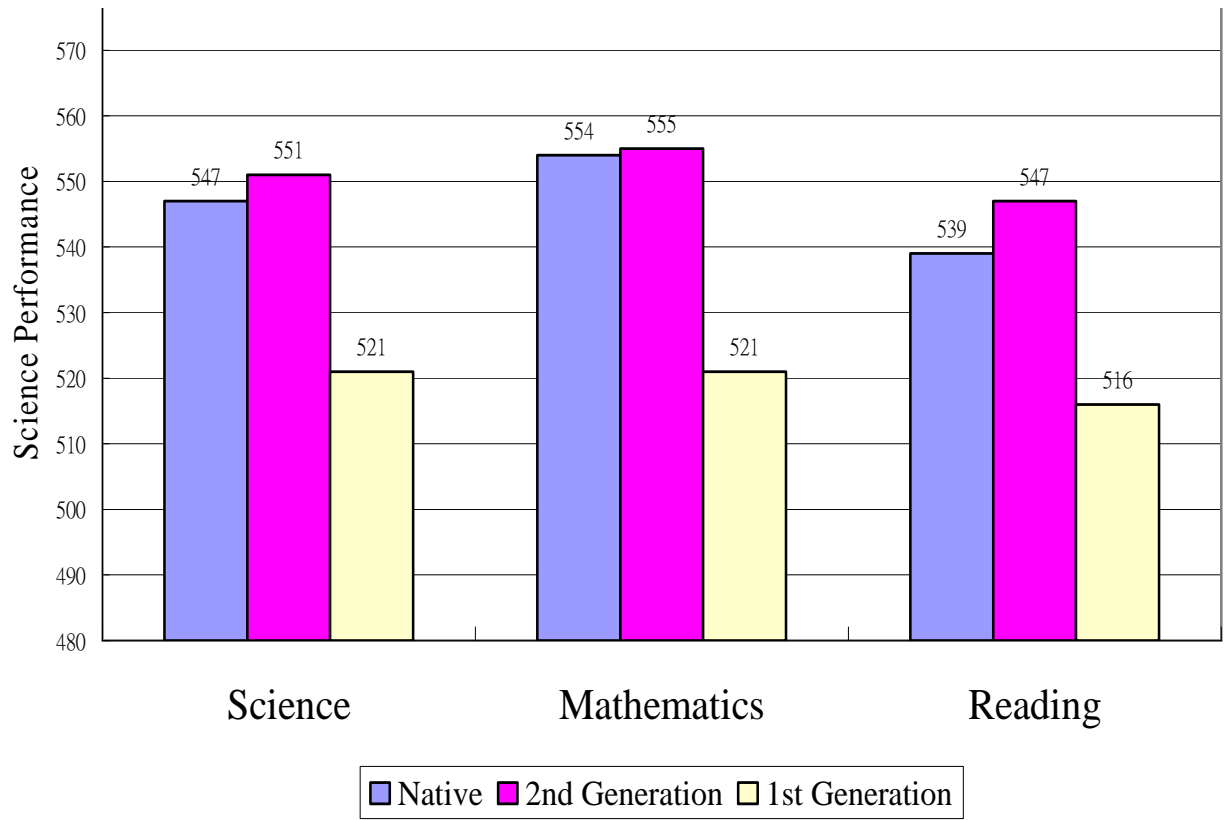


Figure 5. Self-belief, Motivation and Science Performance

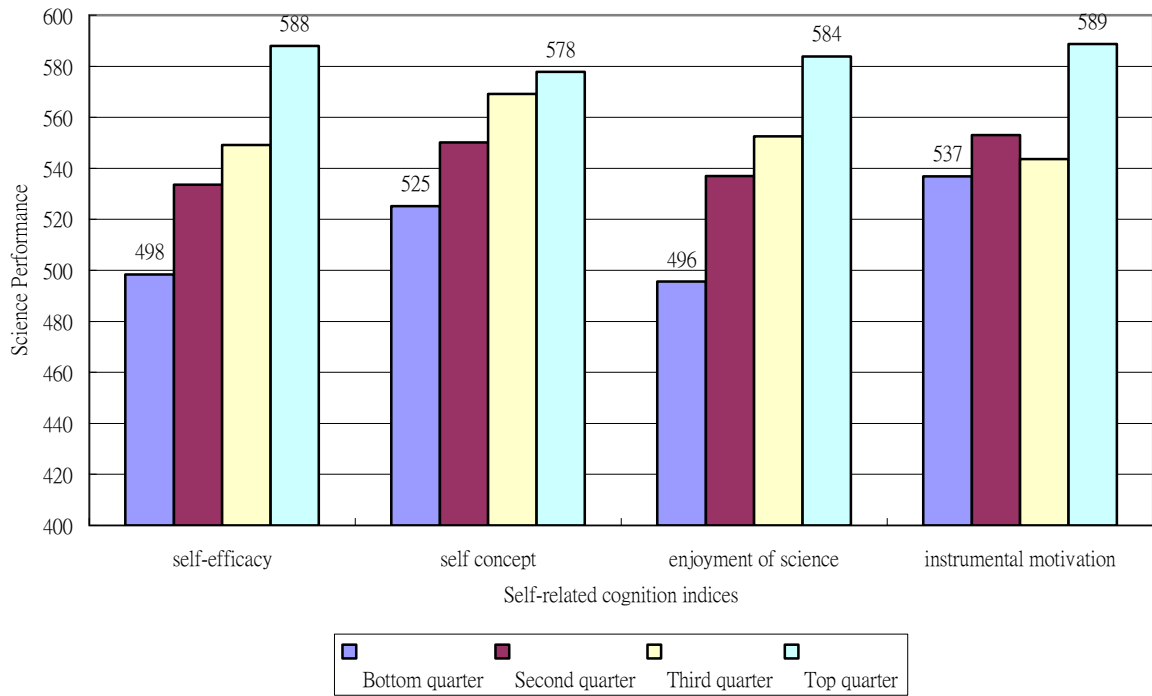


Figure 6. Students' Value of Science, Engagement in Environmental Issues and Science Performance

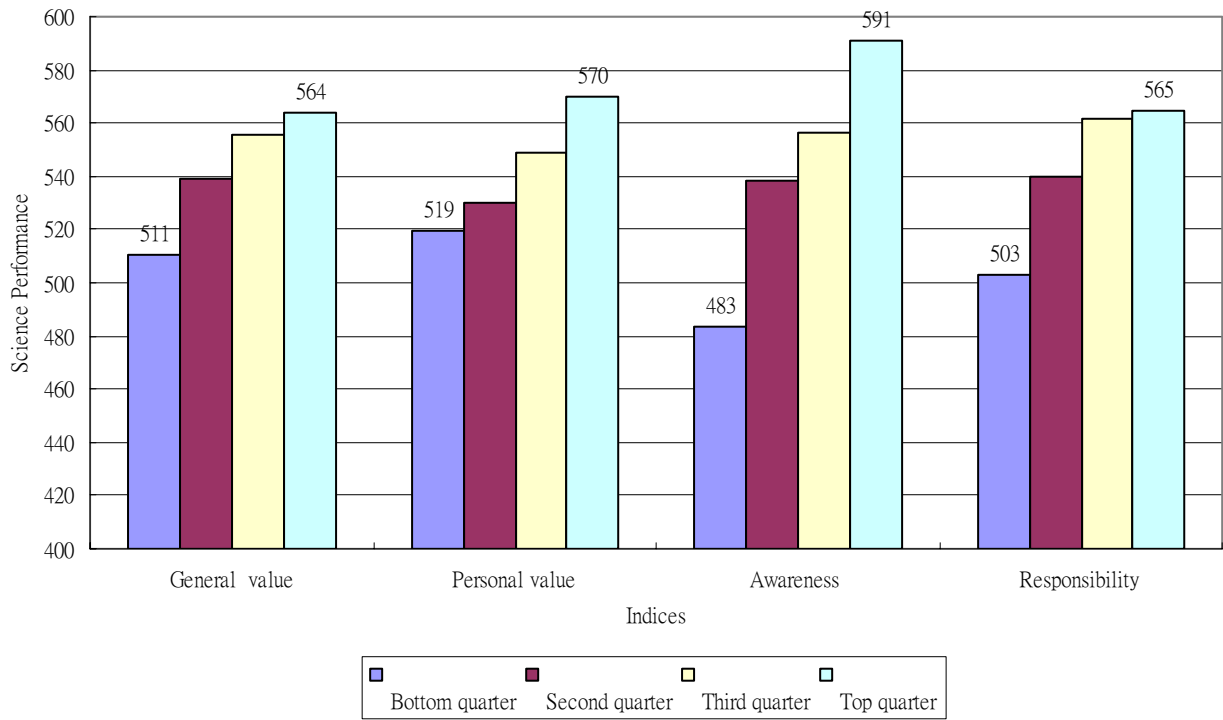
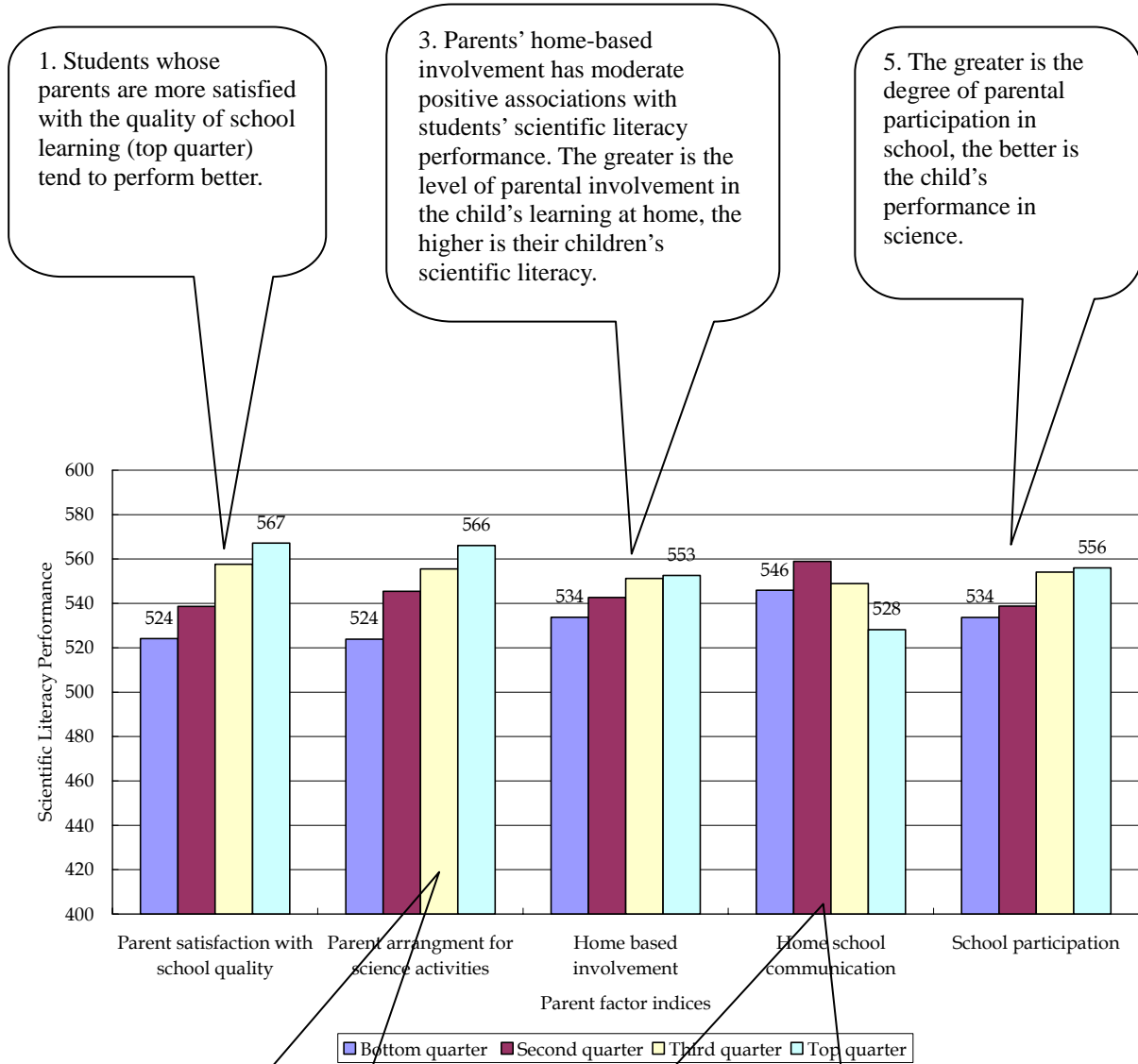


Figure 7. Parents' Perception, Parental Involvement and their Children's Science Performance



1. Students whose parents are more satisfied with the quality of school learning (top quarter) tend to perform better.

3. Parents' home-based involvement has moderate positive associations with students' scientific literacy performance. The greater is the level of parental involvement in the child's learning at home, the higher is their children's scientific literacy.

5. The greater is the degree of parental participation in school, the better is the child's performance in science.

2. Parents reported more arrangement of science activities when their children was 10 year old, their children's science performance at age 15 tend to be higher.

4. Interestingly, home-school communication does not exhibit a positive relationship with the child's science performance. Parents with the most home-school communication (top quarter) appears to have the worst performance. One possible explanation is that teacher-parent contact is often initiated by incidents related to students' academic or behavioral issues. In other words, home-school communication is more likely to be problem oriented rather than positive communication.

**Figure 8. Between School Variance in Science Performance
from 2000+, 2003 to 2006**

