



# ISA Data Patterns 2005

## Who uses the ISA?

In 2005 the ISA was administered to over 15000 students in 128 international schools: Of these schools, 65 were located in the Asia-Pacific region; 44 in Europe; 16 in Africa and the Middle East; and 3 in the Americas. Use of the ISA is growing rapidly. In 2006–7 the ISA was administered to over 28000 students in 174 international schools in a similar proportion of countries. Students taking the ISA are citizens of about 150 different countries, with the largest single group being USA citizens. The modal size of schools using the ISA is between 200–500 students. The smallest school has fewer than 50 students and the largest school over 2000 students. Two-thirds of the schools offer Pre-school to Grade 12.

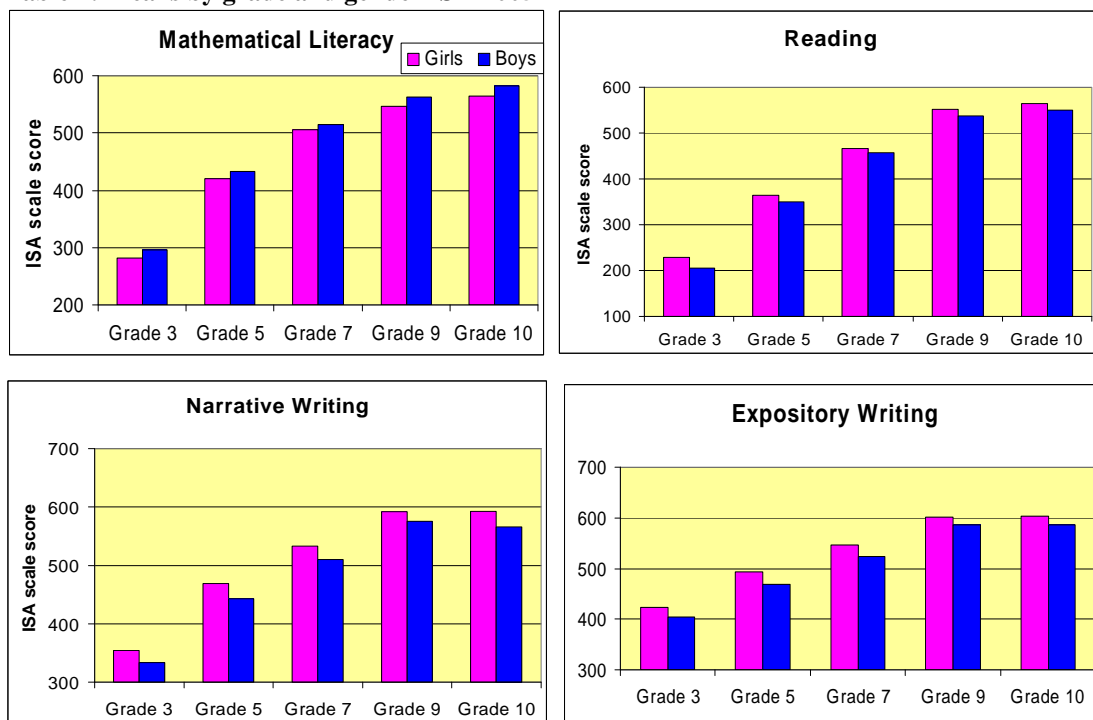
## What patterns do the ISA data show?

Reviewing the ISA data collected between 2002 and 2005 shows some consistent patterns in the effect of variables of gender, language background, years at school and International Baccalaureate school background. Only the 2005 data is shown here as the patterns are similar for previous years.

### Gender

There were slightly more boys than girls overall (between 51% and 57% of each grade level in October 2005 ISA). Table 1 shows a comparison of the mean performance of boys and girls in the ISA in 2005 in the four ISA tests.

**Table 1: Means by grade and gender ISA 2005**



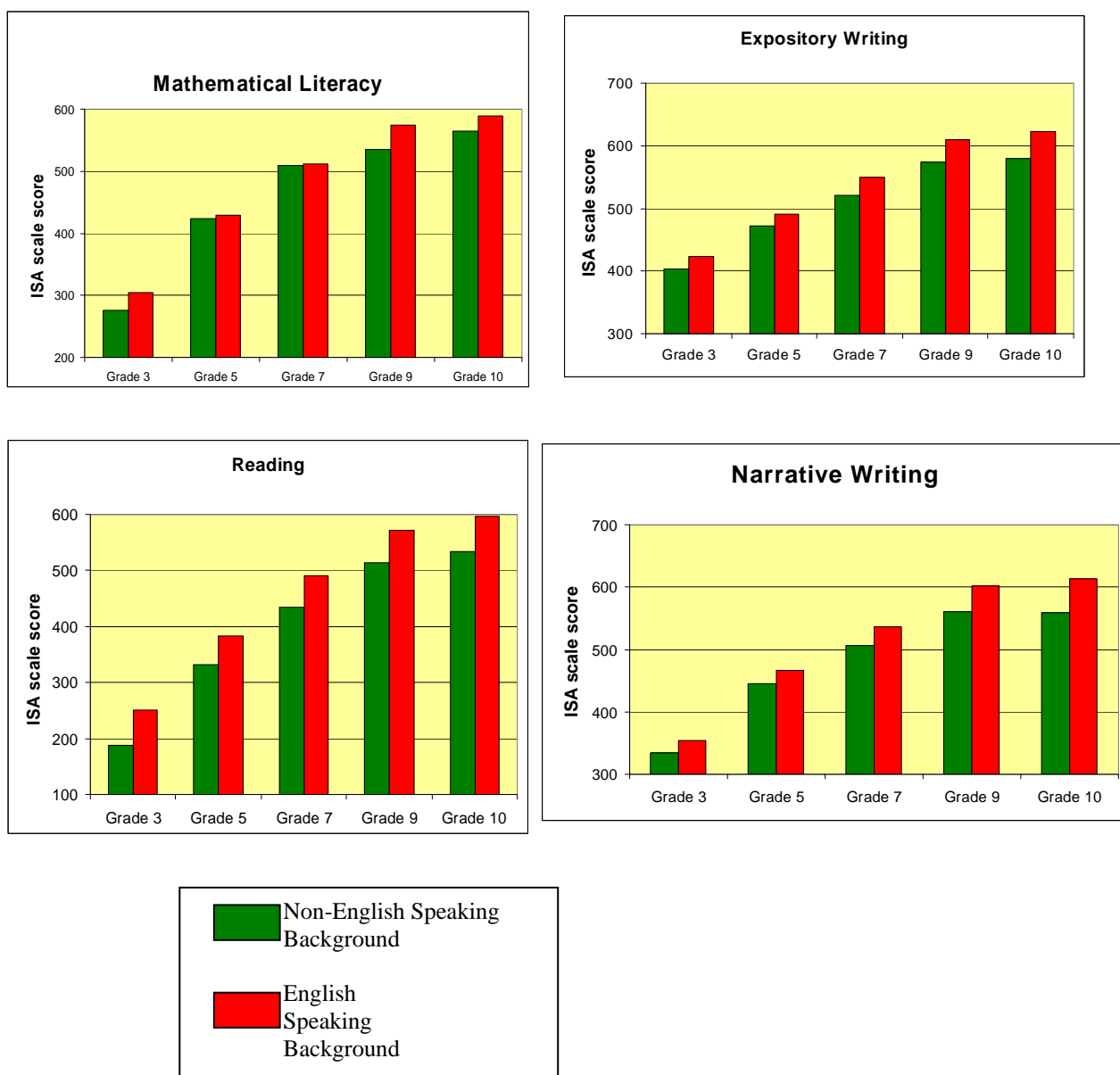
The data show that overall boys did better than girls in mathematical literacy at all grade levels and girls did better than boys in reading and both narrative and expository writing at all grade levels. These findings are consistent with national and international studies such as the National Assessment of Educational Progress (NAEP) and PISA. It is interesting to note that the difference between girls' and boys' performance in mathematical literacy and reading is smallest at Grade 7.

These data suggest that differences in performance between genders that are evident at Grade 3 are difficult to change. That is, schools do not seem to be able to accelerate girls' performance in mathematics or boys' performance in reading and writing to bring the mean levels of performance together for both genders. Schools wishing to improve the overall performance of girls in mathematics and boys in reading and writing may need to consider some kind of intensive catch up program for these students to help to bridge the performance gap.

### English language background

In 2005 53% of students sitting the ISA came from non-English speaking backgrounds. Table 2 shows a comparison of the mean performance of students from a non-English speaking background and an English speaking background.

**Table 2: Means by grade and English language background ISA 2005**



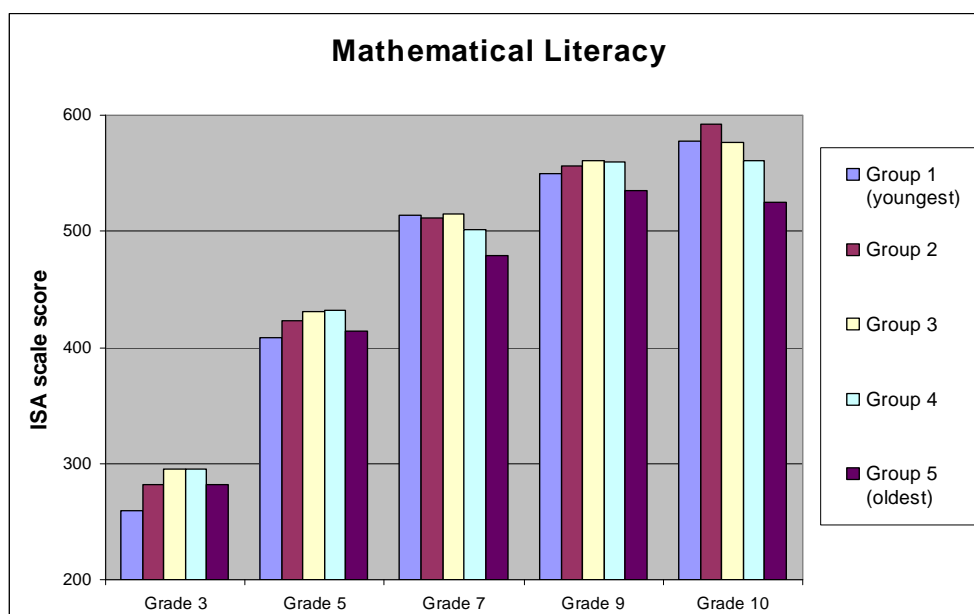
Not surprisingly, students with a non-English speaking background had a consistently lower mean level of performance in reading and writing compared with students from English speaking backgrounds. These data suggest that differences in mean performance in reading and writing, evident from Grade 3, are not easily made up for students from non-English speaking backgrounds.

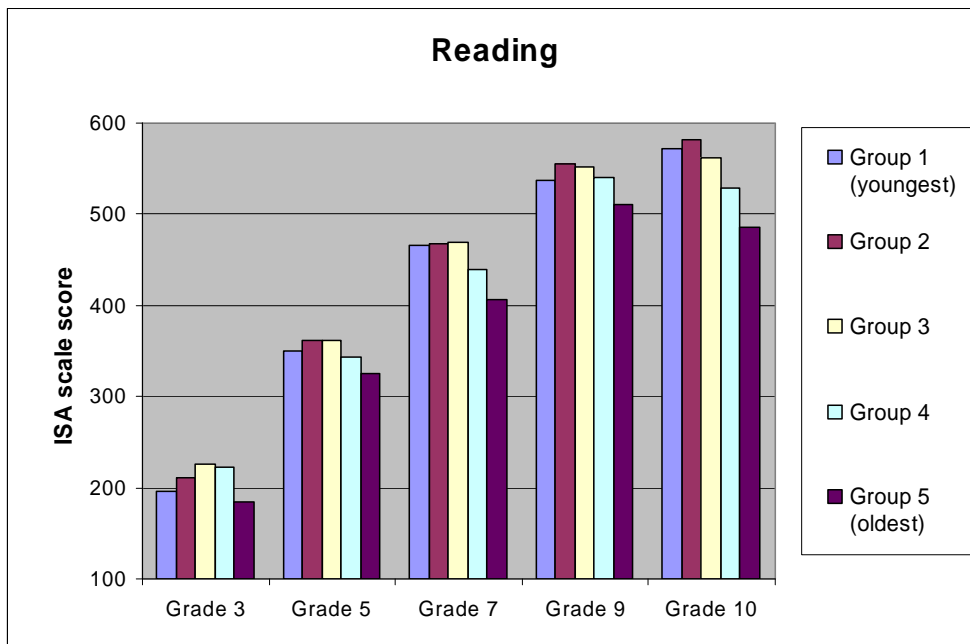
Similarly, in Grade 3 mathematical literacy, there is a significant gap in performance between students from English speaking and non-English speaking backgrounds. However, by Grades 5 and 7 the difference in performance is minimal. These results suggest that students from non-English speaking backgrounds are to a very large extent able to overcome language deficits in the area of mathematics (even though the mathematical literacy component in the ISA has a strong verbal component). These differences are made up in mathematical literacy in Grades 5 and 7, but appear to be lost again in Grades 9 and 10; however it appears that this is most likely due to changes in international school intake at these levels in comparison to the earlier levels of schooling.

### Student Age

The ISA is a grade-based rather than an age-based assessment. One of the concerns of international schools is that children in Grade 3 / Year 3 (for example) in different schools systems vary widely in age. In fact, our data show that at each grade level of the ISA, almost all students fall within a two-and-a-half year age range. It is therefore of interest to international schools to examine the effect of age on student performance. For this analysis, the students at each grade level were divided into five groups based on age. Table 3 shows a comparison of the performance of the different groups by grade. The bar to the left shows the performance of the youngest students.

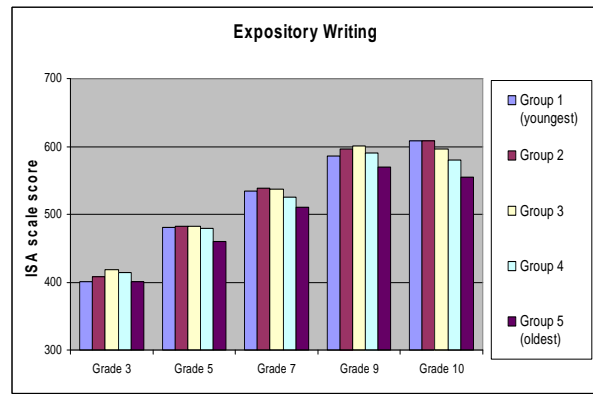
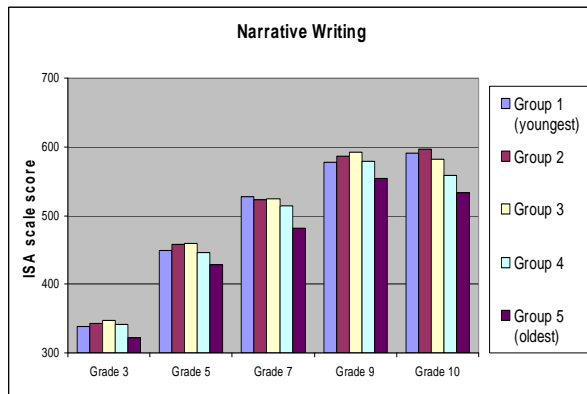
**Table 3: Means by grade and age ISA 2005 Mathematical Literacy and Reading**





In Grade 3 the youngest students have the lowest mean performance of all the age groups in mathematical literacy and reading. At Grade 7 there is a minimal difference in the performance of the youngest students and the students of average age. However, in Grade 9 and 10 the youngest students' performance is, once again, slightly lower. The oldest students have a consistently lower level of performance in mathematical literacy and reading compared with the students of average age. The difference in the performance of the oldest students is most marked at Grade 10. Table 4 shows the comparison in mean performance by grade and age for writing.

**Table 4: Means by grade and age ISA 2005 Writing**



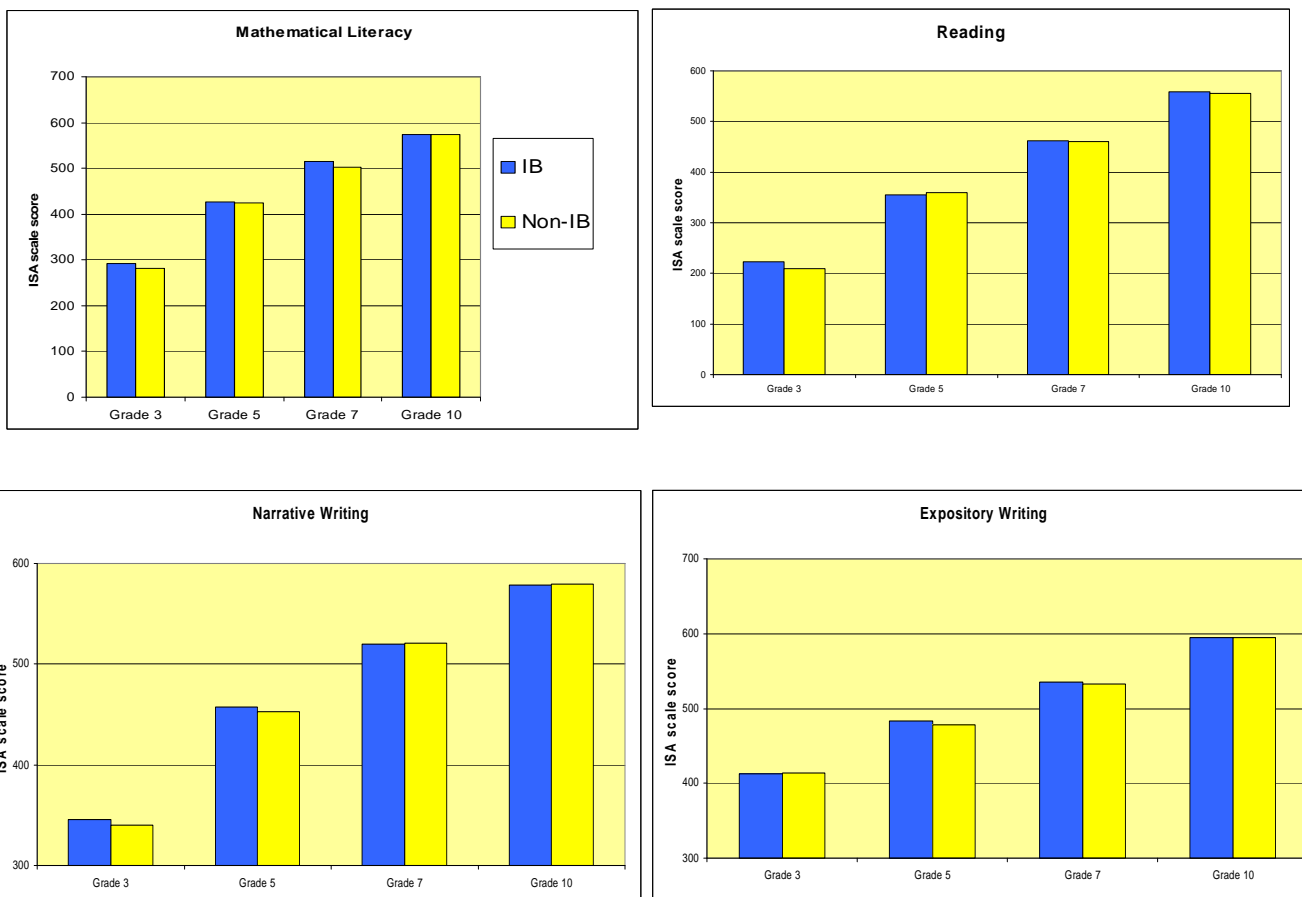
The youngest students' mean writing performance is either slightly less than or the same as that of the average age students for both narrative and expository writing. The oldest students' mean writing performance is the lowest for all grade levels.

These data suggest that the students most at risk of low performance are the oldest students in the class. A possible explanation is that this group includes students who have repeated classes because they are struggling with their learning. The data also suggests that while the youngest students have amongst the lowest mean performances in Grades 3 and 5, their mean performances are amongst the highest groups for Grades 7, 9 and 10. A possible explanation is that the youngest student group includes bright students who started school early or who have skipped a grade.

## International Baccalaureate Curriculum

Nearly three-quarters of the ISA schools use at least one component of the International Baccalaureate (IB) in their curriculum: Primary Years Programme (PYP), Middle Years Programme (MYP) or Diploma Programme. Table 5 shows a comparison of the performance of students in IB and non-IB programmes, In this analysis, schools that offer PYP the were treated as “IB” for Grades 3 and 5, and schools that offer the MYP were treated as “IB” for Grades 7 and 10.

**Table 5: Means by grade and IB or non-IB programmes ISA 2005**



Overall, there is a minimal difference in the performance of students from IB schools and non-IB schools in mathematical literacy, reading and writing. Grade 3 students from IB schools did slightly better in the ISA than those from non-IB schools, but in Grade 10 the mean performances are almost the same.

## Future Research

As the use of the ISA continues to grow we are acquiring a rich source of international student achievement data that we intend to regularly investigate and report on our website at conferences and in journals. Schools using the ISA can also investigate their own research questions. ISA scale scores are comparable from year to year, so schools can identify patterns in students' performance over time and between grade levels.

Our website has more information about the ISA: [www.acer.edu.au/isa](http://www.acer.edu.au/isa)