

PROGRESS IN INTERNATIONAL READING LITERACY STUDY

# PIRLS



## PIRLS 2011 International Results in Reading

Ina V.S. Mullis, Michael O. Martin, Pierre Foy, and Kathleen T. Drucker



**TIMSS & PIRLS**  
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For more information about PIRLS contact:

TIMSS & PIRLS International Study Center

Lynch School of Education

Boston College

Chestnut Hill, MA 02467

United States

tel: +1-617-552-1600

fax: +1-617-552-1203

e-mail: [pirls@bc.edu](mailto:pirls@bc.edu)

[pirls.bc.edu](http://pirls.bc.edu)

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# Foreword

More than any other skill, the ability to read is fundamental to successfully navigating the school curriculum. Moreover, it is central to shaping each individual's trajectory through life, his or her economic wellbeing, and the ability to actively and fully participate in broader society.

PIRLS 2011 is the third cycle of the Progress in International Reading Literacy Study (PIRLS), and continues the long history of research in the area of reading achievement developed by the International Association for the Evaluation of Educational Achievement (IEA). PIRLS 2011 provides information on trends in reading literacy achievement of fourth grade students for countries that have participated in previous cycles of the assessment, while providing baseline data for new countries.

Two features of PIRLS 2011 have the potential to provide new insights into the role of reading in understanding educational outcomes. First, the coincidence of the TIMSS and PIRLS cycles has allowed countries for the first time to assess the same students in three subjects, enabling new analyses which explore the relationship between reading performance to achievement in mathematics and science.

Second, recognizing that the primary goal of assessments such as PIRLS is to provide countries with information that can contribute to educational reform and policy analysis, IEA has developed a new assessment—prePIRLS. Administered for the first time in 2011 at the end of the primary school cycle, prePIRLS responds to the particular demands and circumstances of those countries and sub-national entities whose children are still developing the fundamental reading skills that are prerequisites for success on PIRLS. This assessment reflects IEAs continued commitment to best serve the interests of its expanding community of participants.

PIRLS and prePIRLS require and represent a significant commitment of resources and dedication to achieve a common vision. Clearly, projects of this magnitude rely on the cooperation and support of a large number of individuals, institutions, and organizations around the world. IEA is particularly indebted to the staff members of the TIMSS & PIRLS International Study Center at Boston College, who have been charged with the overall leadership of this project. Their contributions have been augmented by the staff of the IEA Data Processing and Research Center, the IEA Secretariat, Statistics Canada, and Educational Testing Service, for whose support I am also extremely grateful. While the work of the staff of this consortium makes projects like PIRLS possible, the continued leadership and direction of the PIRLS Executive Directors Ina Mullis and Michael Martin remain central to the success of this project.

In addition, projects of this size are possible only with considerable financial support. I am particularly grateful for support from IEA's major funding partners, including the US National Center for Education Statistics, the World Bank, and the many self-funding countries without which this project would not have been possible. I also wish to thank Boston College and the UK's National Foundation for Educational Research for their continued support.

Finally, as always, PIRLS would not have been possible without the National Research Coordinators and their colleagues, whose responsibility it was to manage the study at the local level, and the participation of the many teachers, students, and policymakers around the world who gave freely of their time in the interest of advancing our common understanding of reading achievement. On behalf of all who benefit from the use of the information provided by PIRLS, we are thankful for this commitment.

Hans Wagemaker  
Executive Director, IEA





# Executive Summary

PIRLS is an international assessment of reading comprehension at the fourth grade that has been conducted every five years since 2001. In 2011, nationally representative samples of students in 49 countries participated in PIRLS and prePIRLS. Forty-five countries assessed fourth grade students, and some countries participated in one or more of the other available options initiated in 2011 to permit wider participation at the end of the primary school cycle: four countries assessed their sixth grade students; and three countries participated in prePIRLS, a less difficult version of PIRLS inaugurated in 2011 to be a stepping stone to PIRLS. In addition, PIRLS 2011 included nine benchmarking participants, mostly regions of countries that also participated in PIRLS, including three Canadian provinces, two Emirates, the Andalusian region of Spain, and the US state of Florida. Malta and South Africa used benchmarking to collect information relevant to their language of instruction policies. In total, approximately 325,000 students participated in PIRLS 2011, including countries assessing students at more than one grade, benchmarking participants, and prePIRLS. PIRLS 2011 continues the series of significant international studies in reading literacy conducted by the International Association for the Evaluation of Educational Achievement (IEA). PIRLS is directed by IEA's TIMSS & PIRLS International Study Center at Boston College.

The students in PIRLS responded to questions designed to measure their reading comprehension across two overarching purposes for reading:

- ◆ Reading for literary experience; and
- ◆ Reading to acquire and use information.

The achievement results are reported on the PIRLS scale, which has a range of 0–1,000 (although student performance typically ranges between 300 and 700). PIRLS uses the centerpoint of the scale (500) as a point of reference that remains constant from assessment to assessment.

### Top-performing Countries in PIRLS 2011

Performance on PIRLS represents the “gold standard” internationally for reading comprehension at the fourth grade. Students with high performance in PIRLS can read, comprehend, and interpret relatively complex information in stories and articles of 800 to 1,000 words.

---

#### Top-performing Countries in PIRLS 2011

Hong Kong SAR
Russian Federation
Finland
Singapore

---

The top-performing countries in PIRLS 2011 were Hong Kong SAR, Russian Federation, Finland, and Singapore. In addition to the four top-performers, Northern Ireland, the United States, Denmark, Croatia, and Chinese Taipei had high average achievement, followed by Ireland and England who also performed very well and rounded out the top eleven high-achieving countries. The US state of Florida and the Canadian province of Ontario also did very well.

In general, fourth grade students from many countries around the world demonstrated high achievement in reading. Of the 45 countries participating at the fourth grade, only twelve countries had average achievement below the PIRLS scale centerpoint of 500. Countries assessing their sixth grade students also had achievement below 500, as did the prePIRLS countries (estimated via linking to PIRLS). There was evidence, however, that countries with many very low-achieving students at the fourth grade make substantial gains in reading achievement by the sixth grade.



## More Increases Than Decreases Over the Past Decade

Compared to 2001, ten countries raised their levels of reading achievement in 2011, and 13 countries improved since 2006.

Declines in reading achievement were primarily in European countries. Only four countries showed net declines in reading achievement over the decade—Bulgaria, Lithuania, the Netherlands, and Sweden—whereas seven had decreases since 2006.

## Little Reduction in Large Gender Gap Favoring Girls

In nearly all of the countries and benchmarking participants, girls outperformed boys in 2011, and there has been little reduction in the reading achievement gender gap over the decade. Across the 45 countries participating at the fourth grade, girls had a 16-point advantage, on average, compared to boys. Only five countries showed no difference: Colombia, Italy, France, Spain, and Israel.

The reading achievement gender gap is larger for literary than for informational reading. In literary reading, girls had higher achievement than boys in nearly every country and benchmarking participant. However, girls and boys had fewer achievement differences in informational reading.

### Countries Improving in Reading Achievement

2001–2011	2006–2011
Colombia	Chinese Taipei
Czech Republic	Denmark
Hong Kong SAR	England
Iran	Georgia
Norway	Hong Kong SAR
Russian Federation	Indonesia
Singapore	Iran
Slovak Republic	Norway
Slovenia	Poland
United States	Singapore
	Slovenia
	Trinidad and Tobago
	United States

### Reading Achievement Gender Gap in PIRLS 2011, Fourth Grade

Girls International Average	Boys International Average
520	504

## High Percentages of Students Reach PIRLS International Benchmarks

**Percentages of Students Reaching International Benchmarks in PIRLS 2011, Fourth Grade**

Advanced 18% or More	High 60% or More	Intermediate 90% or More	Low 99–100%
24% Singapore	67% Hong Kong SAR	93% Hong Kong SAR	100% Netherlands
19% Russian Federation	63% Russian Federation	92% Russian Federation	99% Russian Federation
19% Northern Ireland	63% Finland	92% Finland	99% Finland
18% Finland	62% Singapore	90% Croatia	99% Hong Kong SAR
18% England		90% Netherlands	99% Denmark
18% Hong Kong SAR			99% Croatia

### Overview of PIRLS 2011 International Benchmarks, Fourth Grade

<b>Advanced</b>
<ul style="list-style-type: none"> <li>Integrate ideas and information across texts to provide reasons and explanations.</li> </ul>
<b>High</b>
<ul style="list-style-type: none"> <li>Make inferences and interpretations with text-based support.</li> </ul>
<b>Intermediate</b>
<ul style="list-style-type: none"> <li>Make straightforward inferences.</li> </ul>
<b>Low</b>
<ul style="list-style-type: none"> <li>Locate and retrieve information from different parts of the text.</li> </ul>

This report contains a number of literary and informational items illustrating performance at the PIRLS International Benchmarks.

PIRLS reports achievement at four points along the scale as international benchmarks: Advanced International Benchmark (625), High International Benchmark (550), Intermediate International Benchmark (475), and Low International Benchmark (400).

Singapore had the largest percentage of students (24%) reaching the PIRLS Advanced International Benchmark, followed by the Russian Federation, Northern Ireland, Finland, England, and Hong Kong SAR (18–19%). The US state of Florida performed similarly (22%).

Impressively, the majority of the PIRLS 2011 countries were able to educate 95 percent of their fourth grade students to a basic level (Low Benchmark), and six countries had essentially all of their fourth grade students reading at that level.

Reflecting the upward trends in average achievement, there were more improvements across the International Benchmarks in 2011 than there were declines. Remarkably, six countries showed improvement at all four benchmarks over the last decade, raising the level of performance across the entire distribution of student achievement: Singapore, the Russian Federation, Hong Kong SAR, the United States, Slovenia, and Iran.

---

**Countries with Increases at All Four PIRLS International Benchmarks, Fourth Grade**

Singapore
Russian Federation
Hong Kong SAR
United States
Slovenia
Iran

---

### Top-performing Countries Demonstrate Relative Strength in Interpreting, Integrating, and Evaluating Comprehension Skills

Within both the literary and informational reading purposes, PIRLS measures a range of reading comprehension purposes and reports the results on two scales:

- ◆ Retrieving and straightforward inferencing; and
- ◆ Interpreting, integrating, and evaluating.

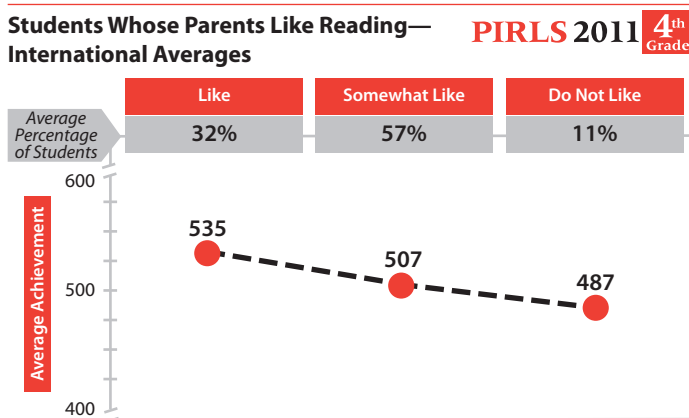
Generally, the PIRLS 2011 participants with the highest achievement overall also had the highest achievement in both reading processes. Nevertheless, many top-performing countries had a relative strength in the interpreting, integrating, and evaluating reading comprehension skills and strategies compared to their reading achievement overall—Hong Kong SAR, the Russian Federation, Singapore, Northern Ireland, and the United States, as well as the Canadian province of Ontario and the US state of Florida.

## Supportive Home Environment and Early Start Crucial in Developing Children’s Reading Achievement

A supportive home environment and an early start are crucial in shaping children’s reading literacy. In PIRLS 2011, at the fourth grade, sixth grade, and for the prePIRLS and benchmarking participants, students had higher reading achievement if their parents reported the following:

- ◆ They themselves liked reading;
- ◆ They often engaged in early literacy activities with their children;
- ◆ They had more home resources for learning; and
- ◆ Their children had attended preprimary education.

Children also had higher reading achievement by the fourth grade if their parents reported that their children started school able to do early literacy tasks (e.g., read some sentences and write some words).

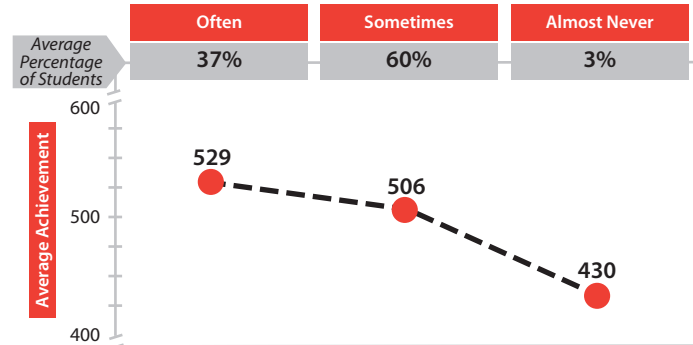


For most children, the home provides modeling and direct guidance in effective literacy practices. Young children who see adults and older children reading or using texts in different ways are learning to appreciate and use printed materials. PIRLS 2011 categorized students on the Parents Like Reading scale according to their parents’ responses to seven

statements about reading and how often they read for enjoyment. Internationally, on average, students whose parents **Like** reading (32%) had substantially higher average reading achievement than the students whose parents reported they **Do Not Like** reading (11%).

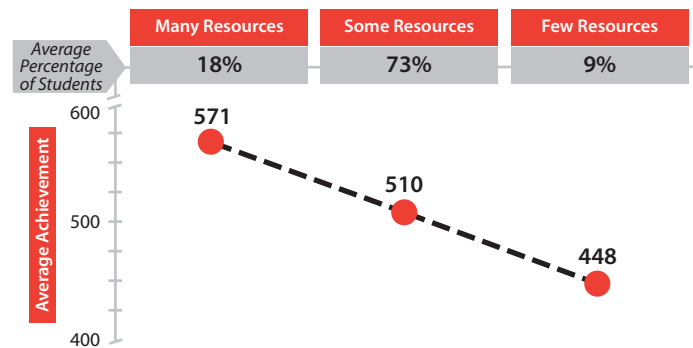
Throughout a child’s development, the time devoted to literacy-related activities remains essential to the acquisition of reading literacy skills. To examine students’ early home literacy experiences, PIRLS includes parents’ reports about the frequency of having done nine activities with their child, such as playing with alphabet toys, reading aloud, and writing letters or words. Internationally, the 37 percent of students whose parents **Often** engaged them had higher average achievement than the students whose parents only **Sometimes** (60%) engaged them, and the small percentage of students whose parents **Almost Never** (3%) did any of the activities with them had the lowest average reading achievement.

**Early Literacy Activities Before Beginning Primary School—International Averages** PIRLS 2011 4<sup>th</sup> Grade



Of course, home resources also can play an important role in acquiring reading literacy skills. PIRLS used the parents’ reports on the availability of key home resources to create the Home Resources for Learning scale, including parents’ education, parents’ occupation, books in the home, and study supports. Internationally, on average, the 18 percent of students with **Many Resources** had substantially higher average reading achievement than the nine percent with **Few Resources**—a 123-point difference. However, almost three-quarters of the fourth grade students had **Some Resources**.

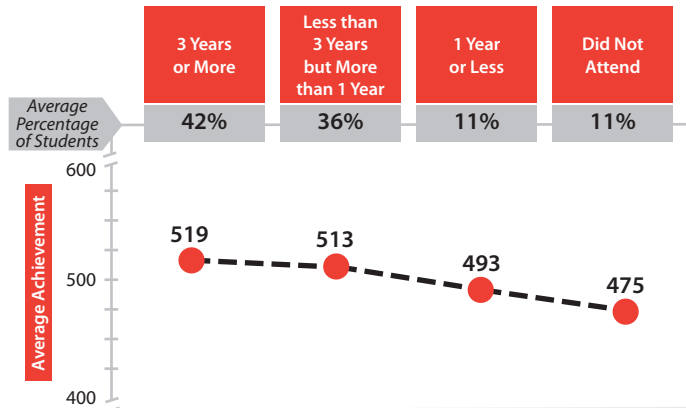
**Home Resources for Learning—International Averages** PIRLS 2011 4<sup>th</sup> Grade



18 percent of students with **Many Resources** had substantially higher average reading achievement than the nine percent with **Few Resources**—a 123-point difference. However, almost three-quarters of the fourth grade students had **Some Resources**.

**Students Attended Preprimary Education—International Averages**

**PIRLS 2011** <sup>4<sup>th</sup></sup> Grade



Preprimary education, in the form of preschool, kindergarten, or an early childhood education program, plays an important role in preparing children for primary school. Besides giving students an early start in school and life, preprimary education provides an avenue for overcoming children’s disadvantages and can help to break the generational cycles of poverty and low achievement.

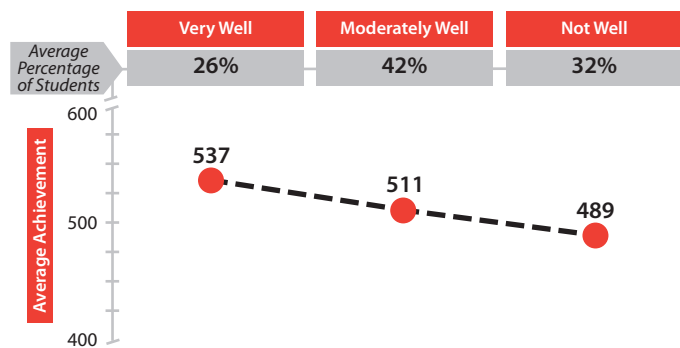
According to the *PIRLS 2011 Encyclopedia*, some countries already have mandatory preprimary education and some have nearly 100 percent enrollment even though attendance is not mandatory. Of course, school policies of entering primary school at older ages permit opportunities for more years of preschool attendance than when children start primary school at younger ages.

Although attendance in preprimary education differed dramatically from country to country, on average, the fourth grade students with at least three years of preprimary education (42%), or even more than one year (36%), had higher average achievement than their counterparts with only one year or less (11%) of preprimary education. Most notably, the eleven percent of students, on average, that did not attend preschool had much lower average reading achievement.

Considering that 1) parents are students' first teachers and many parents have concentrated on literacy skills, and that 2) substantial percentages of students in some countries have attended several years of preprimary education, it is not surprising that many students begin primary school with some literacy skills. PIRLS included the Early Literacy Tasks scale based on parents'

responses to how well their children could do five early literacy tasks (e.g., read sentences, write some words) upon entering school. Parents' assessments of their children's initial literacy skills corresponded well with reading achievement at the fourth grade, sixth grade, and among the prePIRLS and benchmarking participants. For example, reading achievement at the fourth grade was substantially higher for the one-quarter of students whose parents reported their children could perform the activities **Very Well**, next highest for the 42 percent whose parents reported **Moderately Well**, and much lower for the one-third whose parents reported **Not Well**.

**Students Could Do Early Literacy Tasks When Began Primary School— International Averages** **PIRLS 2011** 4<sup>th</sup> Grade



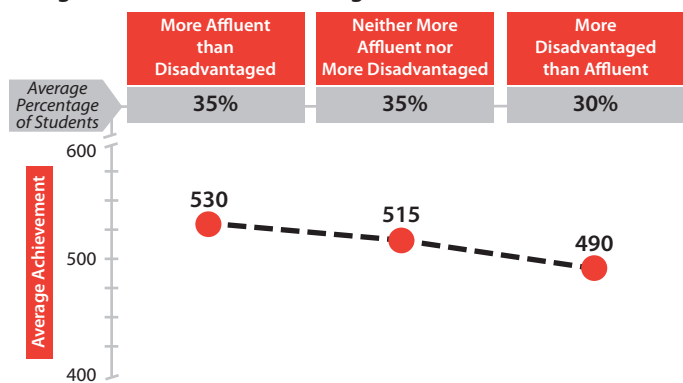
## Successful Schools Tend to Be Well-resourced

Ever since the Coleman report in 1966, researchers have recognized that the compositional characteristics of a school's student body can affect student achievement. To provide information on this topic, PIRLS routinely asks school principals to report on the composition of the student body in terms of economic home background, home language, and prerequisites for learning to read. At the fourth grade, sixth grade, and for the benchmarking participants and prePIRLS, there was variation across countries; however, higher average achievement on PIRLS 2011 was associated with students attending schools where a greater percentage of students had the following characteristics:

- ◆ Were from relatively affluent socioeconomic backgrounds;
- ◆ Spoke the language of the PIRLS assessment as their first language; and
- ◆ Entered school with early literacy skills.

For example, across countries at the fourth grade, students were distributed relatively equally across three types of schools categorized by the affluence of their home backgrounds. Thirty-five percent attended schools with relatively

**School Composition by Student Home Economic Background—International Averages** PIRLS 2011 <sup>4<sup>th</sup></sup> Grade



more students from affluent than from economically disadvantaged homes, and these students had the highest average achievement. At the other end of the range, 30 percent of students attended schools with relatively more students from economically disadvantaged homes, and these students had the lowest average achievement.

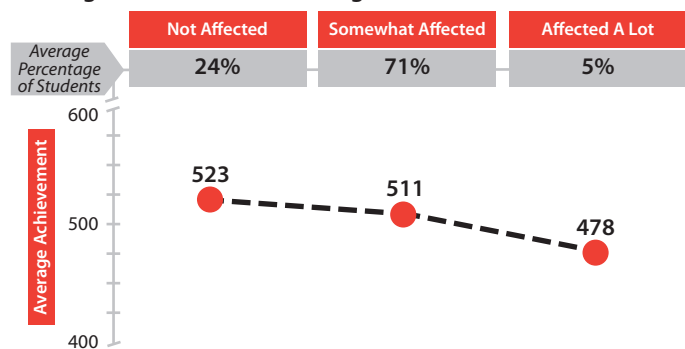


Successful schools also are likely to have better working conditions and facilities as well as more instructional materials, such as books, computers, technological support, and supplies. To provide information on the extent to which school resources are available to support reading instruction, PIRLS 2011 created the Reading Resource Shortages scale based on principals’

responses concerning inadequacies in general school resources (materials, supplies, heating/cooling/lighting, buildings, space, staff, and computers) as well as about resources specifically targeted to support reading instruction (specialized teachers, computer software, library books, and audio-visual resources).

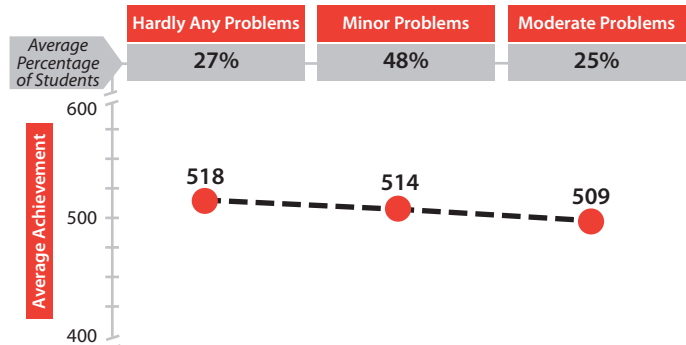
Many countries were fortunate to have very few, if any, students in schools where instruction was **Affected A Lot** by resource shortages. However, this was a crucial problem in some countries. On average, reading achievement for students in such poorly-resourced schools was substantially lower (by 45 points) than for students in schools **Not Affected** by resource shortages. For students at the sixth grade and in prePIRLS, there was more impact from lack of resources, with greater percentages of students in schools **Affected A Lot** by resource shortages.

**Instruction Affected by Reading Resource Shortages—International Averages** PIRLS 2011 **4<sup>th</sup> Grade**



## Teacher Working Conditions— International Averages

PIRLS 2011 **4<sup>th</sup>**  
Grade



PIRLS 2011 asked students' reading teachers to provide their views on the adequacy of their working conditions. Teachers were asked about five potential problem areas, such as the building needing significant repair, overcrowding, and inadequate instructional materials. Students whose teachers reported **Hardly Any Problems** in their working conditions had

higher reading achievement, on average, than those whose teachers reported **Moderate Problems**. However, teachers reporting **Hardly Any Problems** ranged from 5 to 49 percent across the fourth grade countries, and the results need to be considered in the context of expectations and economic situations. In the sixth grade and prePIRLS countries, substantial percentages of students (more than half in some cases) had teachers reporting **Moderate Problems** with school conditions.

### Successful Schools Emphasize Academic Success and Have Safe and Orderly Environments

Students with the highest reading achievement typically attend schools that emphasize academic success, as indicated by rigorous curricular goals, effective teachers, students that desire to do well, and parental support. Both principals and teachers answered the questions comprising the School Emphasis on Academic Success scale, and both were extremely positive and remarkably similar in their responses.

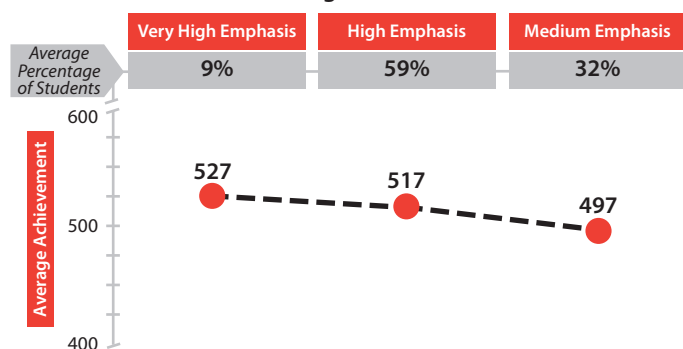
On average, there was a direct correspondence between average reading achievement and principals' reports, with higher emphasis on academic success related to higher average reading achievement. However, across the fourth grade countries, nine percent of the students attended schools where the principal reported a **Very High Emphasis**

on academic success, 59 percent reported a **High Emphasis**, and 32 percent a **Medium Emphasis**. The results were similar for the sixth grade, benchmarking, and prePIRLS participants.

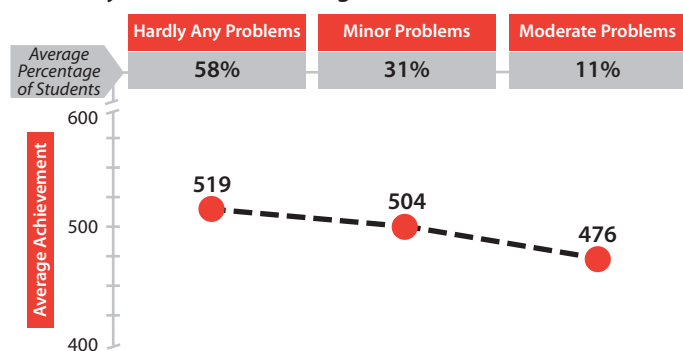
In contrast, schools with discipline and safety problems are not conducive to high achievement. Students who attended schools with disorderly environments and who reported more frequent bullying had much lower achievement than their counterparts in safe and orderly schools. The sense of security that comes from attending a school with few behavior problems and having little or no concern about student or teacher safety promotes a stable learning environment. To create the School Discipline and Safety scale, principals provided their perceptions about the degree to which a series of ten discipline, disorderly, and bullying behaviors were problems in their schools.

The eleven percent of fourth grade students attending schools that had **Moderate Problems** with discipline or safety had substantially lower reading achievement (by 43 points) than the 58 percent of students in schools with **Hardly Any Problems**. Nearly one-third attended schools with **Minor Problems**. In several instances, large percentages of students in sixth grade and in the prePIRLS countries had principals reporting **Moderate Problems** with school discipline.

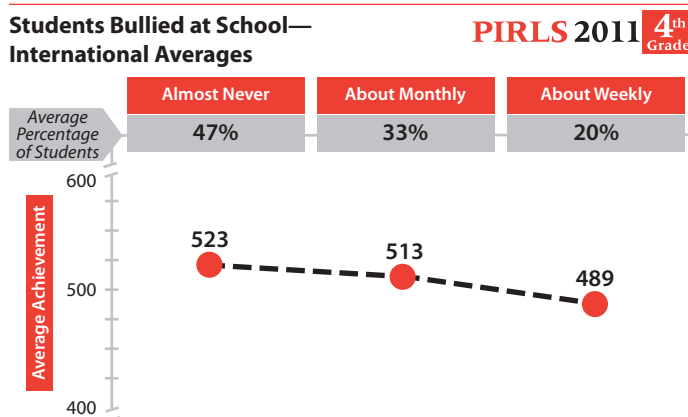
**Principals' School Emphasis on Academic Success—International Averages** PIRLS 2011 4<sup>th</sup> Grade



**Principals' Problems with School Discipline and Safety—International Averages** PIRLS 2011 4<sup>th</sup> Grade



There is growing evidence that bullying in schools is on the rise, especially with the emergence of cyber-bullying, and that bullying does have a negative impact on students' educational achievement. The Students Bullied at School scale was based on how often students experienced six bullying behaviors, such as "Someone spread lies about me" and "I was made to do things I didn't want to do by other students."



At the fourth grade, an increase in the frequency of bullying was related to a decrease in average reading achievement. Unsettlingly, across countries, although nearly half (47%) of the fourth grade students reported **Almost Never** being bullied, the majority were bullied either **About Monthly** (33%) or **About Weekly** (20%).

### Teacher Education and Career Satisfaction Related to Higher Reading Achievement

Internationally, 72 percent of the fourth grade students had reading teachers with an emphasis on language in their formal education and training, 62 percent with an emphasis on pedagogy/teaching reading, and 33 percent with an emphasis on reading theory. In all three instances, although differences were small, higher average reading achievement was associated with teachers having this specialized education.

It is difficult to examine the effects of teacher experience on student achievement, because sometimes more senior teachers prefer assignments with students of higher ability and fewer discipline problems, and other times more experienced teachers are assigned to lower-achieving students in need of more help. Nevertheless, internationally, close to three-fourths of the fourth grade students had very experienced teachers (10–20, or more, years of experience), with reading achievement highest for the 41 percent of students whose teachers had taught for 20 or more years, and lowest for the 12 percent whose teachers had less than five years of experience.

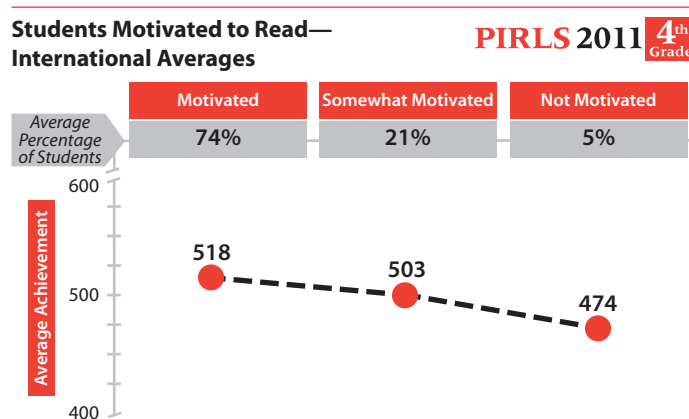
The PIRLS 2011 Teacher Career Satisfaction scale was positively related to average reading achievement, in that, internationally, students with **Satisfied** teachers (54%) had higher achievement than those with teachers that were

only **Somewhat Satisfied** (40%) or **Less Than Satisfied** (5%). Students were categorized based on how much their teachers agreed with six statements, such as “I am content with my profession as a teacher,” “I do important work as a teacher,” and “I plan to continue as a teacher for as long as I can.” Despite the fact that satisfaction could be relative, and dependent on the teaching situation, very few of the fourth grade students had reading teachers that expressed any dissatisfaction except in a small number of countries. However, there were differences from country to country and across the fourth grade, sixth grade, benchmarking, and prePIRLS participants. That is, some high-performing and low-performing countries had large percentages of students taught by **Satisfied** teachers, while some high-performing and low-performing countries had large percentages of students taught by teachers reporting to be only **Somewhat Satisfied**.

### Students with Positive Attitudes Toward Reading Have Higher Achievement

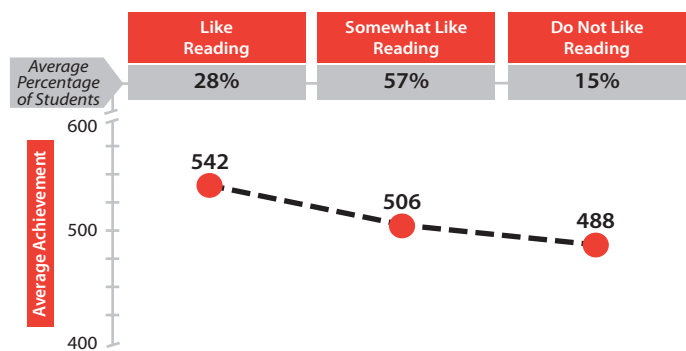
Each successive PIRLS assessment has shown a strong positive relationship within countries between student attitudes toward reading and their reading achievement. The relationship is bidirectional, with attitudes and achievement mutually influencing each other. Because spending time reading is so fundamental to developing reading skills, considerable research has been done on increasing students’ motivation to read. Some students have the disposition to read simply because they like it, but it also is possible for parents and teachers to provide motivation in the form of recognition, rewards, or incentives.

The Students Motivated to Read scale asked students about six different motivational facets of reading (e.g., “My parents like it when I read” and “I need to read well for my future”). Internationally, three-fourths of the fourth grade students reported being **Motivated** readers and very few reported a lack of motivation (5%), although these students had substantially lower reading achievement than their more motivated counterparts.



**Students Like Reading—  
International Averages**

**PIRLS 2011** <sup>4<sup>th</sup></sup> Grade

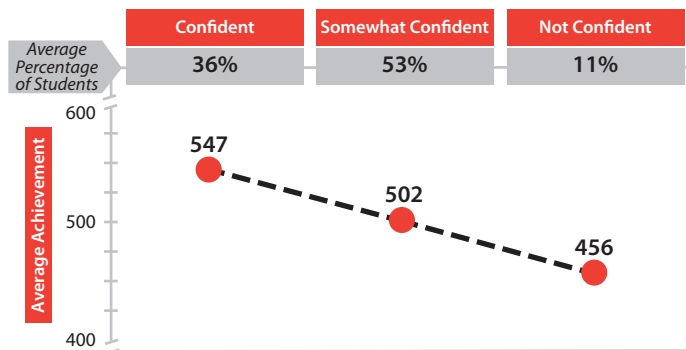


It seems, however, that although many students understand the value of reading, on average, substantially fewer reported liking it—only about one-fourth. The Students Like Reading scale was based on students’ degree of agreement with six statements, such as “I read only if I have to” (reverse coded), “I like talking about what I read with other people,” and “I would like to have more time for reading,” together with how often they read for pleasure. For nearly every PIRLS 2011 participant, including sixth grade, benchmarking, and prePIRLS, students who **Like Reading** had higher average achievement than those who only **Somewhat Like Reading**; in particular, those students who reportedly **Do Not Like Reading** had the lowest average reading achievement. However, although a greater percentage of the fourth grade students, internationally, **Like Reading** than **Do Not Like Reading** (28% vs. 15%), the majority of students only **Somewhat Like Reading** (57%).

Research, including the results from PIRLS assessments, has shown that children with greater self-efficacy or high self-esteem about themselves as readers typically are better readers. The Students Confident in Reading scale included statements, such as “Reading is harder for me than for many of my classmates” (reverse coded) and “My teacher tells me I am a good reader.” Internationally, average reading achievement was highest for the one-third of the fourth grade students who were **Confident** in their reading, and lowest—by 91 points—for

**Students Confident in Reading—  
International Averages**

**PIRLS 2011** <sup>4<sup>th</sup></sup> Grade



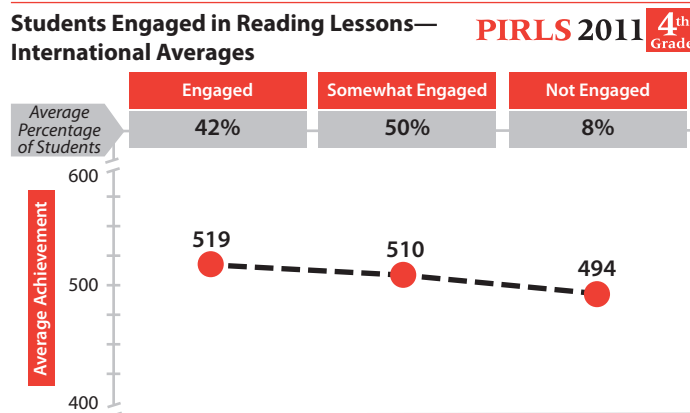
the eleven percent who were **Not Confident**. It is clear that students have a sense of themselves as readers, including knowing when they are struggling. For example, higher than average percentages of students expressed a lack of confidence in their reading in the prePIRLS countries of South Africa (18%) and Botswana (30%).

## Engaging Instruction Related to Higher Reading Achievement

To help build a better bridge between curriculum and instruction, PIRLS 2011 collected information about the concept of student engagement in learning, which focuses on the cognitive interaction between the student and the instructional content. To measure aspects of student engagement, PIRLS 2011 developed both a student scale called the Engaged in Reading Lessons scale, and a teacher scale, called the Engaging Students in Learning scale.

From the student perspective, the Engaged in Reading Lessons scale asked how much students agreed with seven statements, such as “I like what I read in school” and “I am interested in what my teacher says.” Internationally, across the fourth grade, sixth grade, benchmarking, and prePIRLS participants, there was a positive relationship between students’ reports about being more engaged and higher average reading achievement. **Engaged** students had higher achievement than their counterparts that reported being only **Somewhat Engaged**, and students **Not Engaged** had the lowest achievement. On average, only 8 percent of the fourth grade students reported being **Not Engaged** during their reading lessons, while 42 percent reported being **Engaged**, and half reported being **Somewhat Engaged**.

Also, students were categorized according to how often their teachers reported using six instructional practices intended to interest students and reinforce learning (e.g., summarizing the lesson’s learning goals, questioning to elicit reasons and explanations, and bringing interesting things to class). Many fourth grade students (71% on average), internationally, had reading teachers that made efforts to engage them during **Most Lessons**, and the rest had teachers that used such practices in **About Half the Lessons** (with a few exceptions). Across the fourth grade, sixth grade, benchmarking, and prePIRLS participants, students often had slightly higher average reading achievement if their teachers used engaging instruction in **Most Lessons** rather than in **About Half the Lessons**.



## Instruction Affected by Students Lacking in Basic Nutrition and Sleep

Finally, the characteristics of the students themselves can be very important to the classroom atmosphere. Unfortunately, some children in many countries around the world suffer from hunger, and a growing body of research, mostly in developing countries, is providing evidence that malnutrition has a negative impact on educational achievement. Similarly, a number of studies in a variety of countries have shown sleep duration and quality to be related to academic functioning at school.

On average, internationally, 73 percent of the fourth grade students were in classrooms where instruction was “not at all” limited because students were lacking in basic nutrition. These fourth grade students had higher average reading achievement than the 27 percent of their peers in classrooms where instruction was limited “some or a lot” because teachers reported students suffering from lack of basic nutrition (519 vs. 495). The percentage lacking in basic nutrition was much higher in some countries, including some of those that participated at the sixth grade and in prePIRLS.

The achievement gap for sleep deprivation (518 vs. 507) was somewhat less than that related to lack of nutrition, but the fourth grade students suffering from some amount of sleep deprivation did have lower average reading achievement. Teachers reported that only a scant majority of fourth grade students (51%), internationally, were in classrooms where instruction was “not at all” limited by students suffering from not enough sleep. Further, while there was considerable variation across countries, the majority of students were reportedly at least somewhat sleep deprived in a number of PIRLS 2011 countries and benchmarking participants.







# Introduction

Reading is perhaps the most important skill that a child can develop, and it is important for parents to help their children develop the habit of reading at a young age. Fourth grade is an important transition point in children's development as readers, because at this stage most students should have learned to read, and are now reading to learn. Regardless of the subject matter taught, reading is crucial to success in school, and students need good reading comprehension to understand and learn the material being covered in their various classes.

Reading also can play an important role in self-realization, helping children learn about themselves and their potential. Reading makes students more knowledgeable, not just about school subjects but about many topics relevant to everyday life and society more generally. They will encounter new words, phrases, and idioms that will improve vocabulary and language skills, and learning about patterns and connections will increase thinking skills and creativity.

PIRLS (Progress in International Reading Literacy Study) has the goal of helping countries make informed decisions about how to improve teaching and learning in reading. This PIRLS 2011 report provides information about trends in how well fourth grade students around the world can read. It provides a wealth of information about changes over the past decade, which has seen

enormous growth in a myriad of ways for children to spend their spare time other than reading. Are fourth grade students reading better than ever? Or perhaps, have the many competing media activities (e.g., watching TV, social networking, listening to music on phones and computers, and playing video games) supplanted reading in children's lives to the point that reading skills are eroding? This report also contains important information about how well children's home environments are fostering reading skills, and about children's attitudes toward reading. Are parents encouraging children to improve their reading comprehension skills? Are more or fewer children enjoying reading than a decade ago?

Finally, the report includes information about the major factors contributing to effective school and classroom learning environments. Are schools well-resourced? Do they have climates conducive to learning? Are teachers well-prepared? Do they cover the content? Do they provide engaging instruction? Are classrooms equipped with books and technology?

## Countries Participating in PIRLS 2011

The PIRLS 2011 international reading assessment of fourth grade students in countries around the world continues the series of significant international studies in reading literacy conducted by the International Association for the Evaluation of Educational Achievement (IEA). Also, to meet the needs of the increasing number of developing countries wanting to participate in PIRLS 2011, IEA developed a less difficult assessment to bridge to PIRLS, called prePIRLS. IEA is an independent international cooperative of national research institutions and government agencies with nearly 70 member countries worldwide. IEA has a permanent secretariat based in Amsterdam, and a thriving data processing and research center in Hamburg (the IEA DPC). The decision to participate in an IEA study is coordinated through the IEA Secretariat in Amsterdam and made solely by each member country according to its own data needs and resources.

Exhibit 1 shows the PIRLS 2011 participants. Altogether, there were 49 countries in the PIRLS and prePIRLS assessments, including some distinct education systems within countries that have always participated separately throughout IEA's long history (e.g., the French-speaking part of Belgium and Hong Kong SAR). In addition, PIRLS 2011 included nine benchmarking participants, mostly regions of countries that also participated in PIRLS, including three Canadian provinces, two Emirates, the Andalusian region of Spain, and the US state Florida. However, Malta and South Africa used

Australia  
Austria  
Azerbaijan  
Belgium (French)  
Botswana  
Bulgaria  
Canada  
Chinese Taipei  
Colombia  
Croatia  
Czech Republic  
Denmark  
England  
Finland  
France  
Georgia  
Germany  
Honduras  
Hong Kong SAR  
Hungary  
Indonesia  
Iran, Islamic Rep. of  
Ireland  
Israel

Italy  
Kuwait  
Lithuania  
Malta  
Morocco  
Netherlands  
New Zealand  
Northern Ireland  
Norway  
Oman  
Poland  
Portugal  
Qatar  
Romania  
Russian Federation  
Saudi Arabia  
Singapore  
Slovak Republic  
Slovenia  
Spain  
Sweden  
Trinidad and Tobago  
United Arab Emirates  
United States

### **Benchmarking Participants**

Alberta, Canada  
Ontario, Canada  
Quebec, Canada  
Maltese - Malta  
English/Afrikaans - South Africa  
Andalusia, Spain  
Abu Dhabi, UAE  
Dubai, UAE  
Florida, USA

### **prePIRLS Participants**

Botswana  
Colombia  
South Africa

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

benchmarking to collected information relevant to their language of instruction policies. PIRLS 2011 also was pleased to welcome the inaugural prePIRLS participants—Botswana, Colombia, and South Africa.

In each country, nationally representative samples of approximately 4,000 students from 150–200 schools participated in each PIRLS or prePIRLS assessment. In total, approximately 325,000 students participated in PIRLS 2011, including countries assessing students at more than one grade, benchmarking assessments, and prePIRLS.

## The PIRLS Trend Assessments in Reading Comprehension

IEA pioneered international comparative assessments of educational achievement to gain a deeper understanding of the effects of policies and practices across countries' different systems of education. IEA has conducted a number of international reading literacy assessments during its 50-year history of educational research. Most recently, IEA marked the beginning of the 21<sup>st</sup> century by inaugurating PIRLS to measure children's reading achievement every five years, and to provide trends into the future. PIRLS is directed by IEA's TIMSS & PIRLS International Study Center at Boston College.

PIRLS 2011 is the third in the trend series, following PIRLS 2001 and PIRLS 2006. For each PIRLS 2011 participant, Appendix A shows participation in earlier PIRLS assessments. All of the countries, institutions, and agencies involved in successive PIRLS assessments have worked collaboratively in building the most comprehensive and innovative measure of reading comprehension possible, beginning in 2001 and improving with each cycle since then. Performance on PIRLS represents the “gold standard” internationally for reading comprehension at the fourth grade. Students with high performance in PIRLS can read, comprehend, and interpret relatively complex information in stories and articles of 800 to 1,000 words.

## New Policy-relevant Context Questionnaire Scales

PIRLS 2011 provides extensive information about home supports for literacy and school environments for teaching and learning. In particular, in 2011 the trend cycles of IEA's PIRLS and TIMSS international assessments came together, producing a synergy that led to advancements in the quality of background data collected by both projects. Because TIMSS (Trends in International Mathematics and Science Study) also assess students at the fourth grade (as well as at the eighth grade), the alignment of the two projects provided the opportunity for

countries to assess the same fourth grade students in reading, mathematics, and science in conjunction with collecting the extensive background data characteristic of IEA assessments—most notably the *PIRLS Learning to Read Survey*, completed by students’ parents or caregivers.

Having almost 40 countries participate in both assessments required a great deal of coordination, innovation, and creativity, most notably in the area of background data collection. The *PIRLS 2011 Student Questionnaire*, *Teacher Questionnaire*, *School Questionnaire*, *Home Questionnaire*, and *Curriculum Questionnaire* were developed jointly by PIRLS and TIMSS participants, including several joint meetings of the PIRLS 2011 Questionnaire Development Group and the TIMSS Questionnaire Item Review Committee. This effort yielded nearly 20 new context questionnaire scales about learning and teaching developed in parallel across reading, mathematics, and science. Underpinning a new approach to interpreting the questionnaire data, each context questionnaire scale was created using IRT methods, and results presented for three regions of the scale (most to least desirable) using scale score equivalents of response combinations to determine the cutpoints for the regions.

## New Initiatives for Developing Countries

As a new initiative in 2011, prePIRLS (a less difficult version of PIRLS) makes it possible for a range of developing countries to assess their children’s reading comprehension at the end of the primary school cycle. The prePIRLS assessment has shorter and easier reading texts than PIRLS, and places less emphasis on higher-order reading skills. Depending on a country’s educational development, prePIRLS can be given at the fourth, fifth, or sixth grade.

prePIRLS is based on the same view of reading comprehension as PIRLS but is designed to test basic reading skills that are prerequisites for success on PIRLS. In prePIRLS, students read and answer questions about stories and articles just like in PIRLS, except the stories and articles are shorter, with easier vocabulary as well as simpler grammar and syntax.

As another new initiative, PIRLS 2011 also could be given to students in the fifth or sixth grade in countries where the assessment might be too difficult for fourth grade students. With the two new initiatives, PIRLS and prePIRLS together now meet the needs of a broader range of countries, providing new options for developing countries to assess reading at the end of the primary school cycle.

## The PIRLS 2011 Assessment of Reading Comprehension

The PIRLS reading assessment is based on a comprehensive framework developed collaboratively with the participating countries. The framework specifies in some detail the types of texts and reading comprehension strategies to be assessed.

As described in the *PIRLS 2011 Assessment Framework* (Mullis, Martin, Kennedy, Trong, & Sainsbury, 2009), the PIRLS and prePIRLS assessments measure two purposes for reading that account for most of the reading done by young students in and out of school:

- ◆ For literary experience; and
- ◆ To acquire and use information.

Within each of these two major reading purposes, four processes of comprehension are assessed:

- ◆ Focus on and retrieve explicitly stated information;
- ◆ Make straightforward inferences;
- ◆ Interpret and integrate ideas and information; and
- ◆ Examine and evaluate content, language, and textual elements.

Both PIRLS and prePIRLS devote half of the assessment to reading for literary experience and half to reading to acquire and use information. Both also assess reading comprehension processes across the two purposes for reading, although prePIRLS places more emphasis on children being able to comprehend and retrieve information from text.

PIRLS and prePIRLS employ the same assessment approach whereby students are given reading passages (texts) and asked 13 to 16 questions about each passage. PIRLS and prePIRLS contain 135 and 123 questions, respectively, with approximately half being multiple choice questions and half being in a constructed response format where students write their answers (see Appendix B for further information).

The passages in both PIRLS and prePIRLS were accompanied by colorful illustrations to help engage student interest, and a number of the informational articles had non-continuous text features such as text boxes or diagrams. In PIRLS 2011, the reading purposes and comprehension processes were assessed based on ten passages—five for the literary purpose, and five for the informational purpose—ranging in length from approximately 800 to 1,000 words. Six of the ten passages and item sets (three literary and three



informational) were retained from previous assessments to provide a foundation for measuring trends in reading achievement; the remaining four passages and item sets (two literary and two informational) were developed for PIRLS 2011.

As noted previously, the prePIRLS passages were similar to the PIRLS passages but shorter—approximately 400 words—and there were slightly fewer of them—eight passages, four literary and four informational. Of course, all eight passages and item sets were newly developed for this first prePIRLS assessment in 2011. Many of the items were in the short constructed response format because field testing indicated that students had the most success with short answer items requiring a word or phrase. Also, the format interspersed questions throughout the passages so that students could read short portions of text and then answer questions, then read a little more and answer more questions, with several questions about the entire passage at the end.

Developing the materials for the 2011 PIRLS and prePIRLS assessments was a cooperative venture, involving the National Research Coordinators (NRCs) from the participating countries throughout the entire process. Identifying prospective passages began even before the first NRC meeting for PIRLS 2011, so that initial review could take place and consensus established about the characteristics of desirable texts. To develop the items based on the text passages identified for the field test, the TIMSS & PIRLS International Study Center conducted an item-writing workshop for NRCs and their colleagues with particular backgrounds in reading assessment and item development. Participating countries field tested the items and scoring guides with representative samples of students, and the results were scrutinized internally by the PIRLS 2011 Reading Development Group of internationally recognized experts.

## Quality Assurance

The PIRLS and prePIRLS reading assessments were given to carefully selected and well-documented probability samples of students. The student sampling for PIRLS 2011 was conducted with careful attention to quality and comparability. Staff from Statistics Canada and the IEA DPC worked with the participants on all phases of the sampling activities. The Statistics Canada sampling experts, in conjunction with the PIRLS 2011 sampling referee (Keith Rust, Westat, Inc.), evaluated the quality of the samples and found excellent adherence to sampling and participation requirements, with the exception of a few cases that

are annotated in the report. Appendix C provides detail about national target population coverage and sampling participation rates.

PIRLS 2011 made every effort to attend to the quality and comparability of the data through careful planning and documentation, cooperation among participating countries, standardized procedures, and rigorous attention to quality control throughout. For example, an extensive series of verification checks was conducted to ensure the comparability of the text translations as well as the translations of the items and questionnaires, detailed documentation was required to satisfy adherence to the sampling standards, and an ambitious quality assurance program was conducted during data collection.

## PIRLS 2011 Reports

The results from PIRLS 2011 are presented in a series of major reports.

- ◆ This present report, *PIRLS 2011 International Results in Reading*, summarizes fourth grade students' reading achievement on the PIRLS and prePIRLS achievement scales and at the PIRLS International Benchmarks of achievement for each of the 49 countries and nine benchmarking participants of PIRLS and prePIRLS 2011. Achievement results also are presented for reading purposes and comprehension processes. The report includes trends in reading achievement for participants in the PIRLS 2001 and 2006 assessments. It presents a rich array of information about students' home environments and attitudes toward reading, school environments for learning and instruction, teachers' education and training, and classroom characteristics and activities.
- ◆ The *PIRLS 2011 Encyclopedia: Education Policy and Curriculum in Reading, Volumes 1 and 2* (Mullis, Martin, Minnich, Drucker, & Ragan, 2012) describes national contexts for the teaching and learning of reading. Each PIRLS 2011 country and benchmarking participant prepared a chapter summarizing the structure of its education system, the reading curriculum and reading instruction in primary school, teacher education requirements, and assessment and examination practices. Together with selected introductory data about the countries collected via online questionnaires, the chapters comprising the two volumes of the *PIRLS 2011 Encyclopedia* provide an important resource for helping to understand the teaching and learning of reading around the world. The Encyclopedia reveals a number of themes across countries, including the growing importance of preprimary education,

rising teacher education requirements, and the impact that participating in PIRLS has had on countries' education policies and curricula.

- ◆ The online publication, *Methods and Procedures in TIMSS and PIRLS 2011* (Martin & Mullis, 2012), describes the methods and procedures used to develop, implement, and analyze the results from PIRLS 2011 and is available from the TIMSS & PIRLS International Study Center's website: <http://timssandpirls.bc.edu>.

The fully documented PIRLS 2011 international database can be downloaded from the TIMSS & PIRLS International Study Center's website.

In addition, special analyses are being conducted using the TIMSS and PIRLS database of fourth grade students. This report, *TIMSS and PIRLS 2011: Relationships among Reading, Mathematics, and Science Achievement—Implications for Early Learning* consists of in-depth analyses of fourth grade student achievement in reading, mathematics, and science in the countries that administered TIMSS and PIRLS to the same students in 2011. The report addresses four issues:

- ◆ Are primary schools providing a solid foundation in core subjects—reading, mathematics, and science?
- ◆ How does reading ability impact mathematics and science achievement?
- ◆ What are the characteristics of effective schools in reading, mathematics, and science? and
- ◆ How do homes support literacy and numeracy?



# Chapter 1



## International Student Achievement in Reading

Hong Kong SAR, the Russian Federation, Finland, and Singapore were the top-performing countries in PIRLS 2011.

Since 2001, ten countries have raised their levels of reading achievement, and only four have had decreases. Girls outperformed boys in 2011 in nearly all of the countries and benchmarking participants, and there has been little reduction in the reading achievement gender achievement gap over the decade.

Chapter 1 contains PIRLS 2011 and prePIRLS achievement results for the 49 participating countries and nine benchmarking participants. To summarize reading achievement across participants, the chapter provides:

- ◆ Averages (means) and distributions of reading achievement;
- ◆ Trends in reading achievement over time for participants in previous PIRLS assessments in 2001 and 2006;
- ◆ Achievement differences by gender; and
- ◆ Trends in achievement differences by gender.

The results for percentages of students reaching the PIRLS International Benchmarks (Advanced, High, Intermediate, and Low) are presented in Chapter 2.

## Reading Achievement Across Countries

### *PIRLS 2011 Reading Achievement*

This section reports the PIRLS 2011 reading results as average scores and distributions on the PIRLS scale, which has a range of 0–1,000 (although student performance typically ranges between 300 and 700). The PIRLS reading achievement scale was established in PIRLS 2001 based on the achievement distribution across all participating countries, treating each country equally. The scale centerpoint of 500 was set to correspond to the mean of the overall achievement distribution, and 100 points on the scale was set to correspond to the standard deviation. Achievement data from subsequent PIRLS assessment cycles were linked to this scale so that increases or decreases in average achievement may be monitored across assessments.<sup>1</sup> PIRLS uses the scale centerpoint as a point of reference that remains constant from assessment to assessment.

Exhibit 1.1 shows the distributions of student achievement for the participants in PIRLS 2011, including the average scale score with its 95 percent confidence interval and the ranges in performance for the middle half of the students (25<sup>th</sup> to 75<sup>th</sup> percentiles) as well as the extremes (5<sup>th</sup> and 95<sup>th</sup> percentiles).

The first page of Exhibit 1.1 presents the results for the 45 countries that assessed students at the PIRLS target population of fourth grade. In particular, the PIRLS target population is the grade that represents four years of schooling,

<sup>1</sup> Please see *Methods and Procedures in TIMSS and PIRLS 2011* on the TIMSS and PIRLS website for further detail ([timssandpirls.bc.edu](http://timssandpirls.bc.edu)).

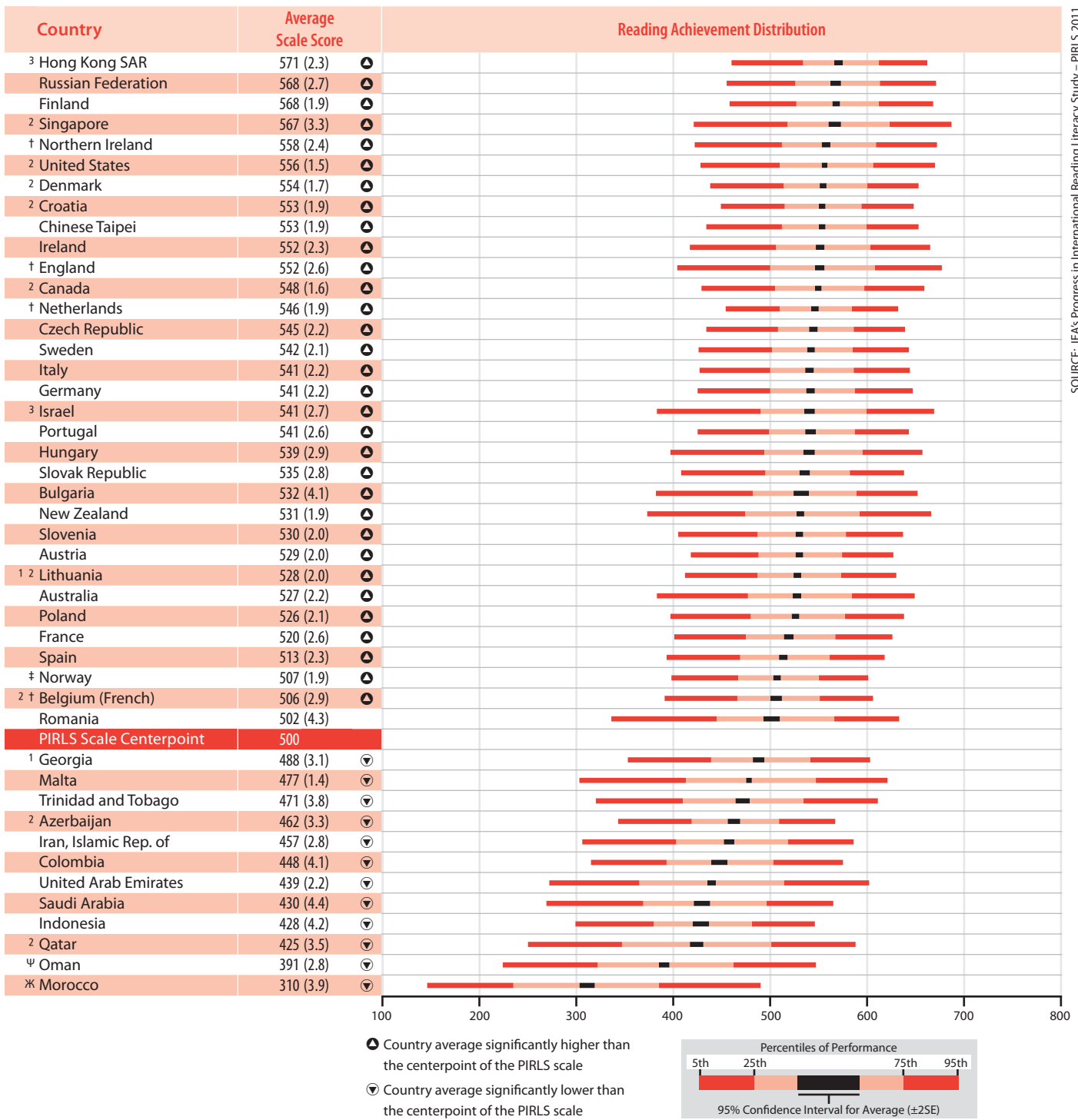
counting from the first year of ISCED Level 1.<sup>2</sup> Level 1 corresponds to primary education or the first stage of basic education, with the first year of Level 1 marking “systematic apprenticeship of reading, writing and mathematics.” However, IEA has a policy that children should be at least 9 years old before being asked to participate in a paper-and-pencil assessment such as PIRLS. Thus, as a policy, PIRLS also tries to ensure that, at the time of testing, students do not fall under the minimum average age of 9.5 years old. So, England, Malta, New Zealand, and Trinidad and Tobago, where students start school at a young age, were assessed in their fifth year of schooling, but still have among the youngest students and are reported together with the fourth grade countries. Exhibit C.1 in Appendix C shows the grades and average ages of the students tested across countries, together with information about the policies and practices related to age of entry to primary school across countries. The *PIRLS 2011 Encyclopedia* contains further details, such as countries’ policies about promotion and retention.

The second page of Exhibit 1.1 shows the results for several countries that assessed their sixth grade students. To meet the needs of the increasing number of developing countries wanting to participate in PIRLS 2011, the TIMSS & PIRLS International Study Center encouraged countries where the assessment was too difficult for fourth grade students to give PIRLS at the fifth or sixth grade or to participate in prePIRLS, depending on a country’s educational development. Four countries elected to assess sixth grade students, including Morocco (which also assessed its fourth grade students) and Botswana (which also participated in prePIRLS at the fourth grade).

The second page of Exhibit 1.1 also presents the results for the PIRLS 2011 benchmarking participants. The benchmarking participants followed the same procedures and met the same standards as the countries, the difference being that for the most part they are regional entities of countries included on the first page of Exhibit 1.1. As another innovation in 2011, Malta and South Africa used the PIRLS benchmarking opportunity to collect information relevant to their language of instruction policies.

2 ISCED stands for the International Standard Classification of Education developed by the UNESCO Institute for Statistics (OECD, 1999).

**Exhibit 1.1: Distribution of Reading Achievement**

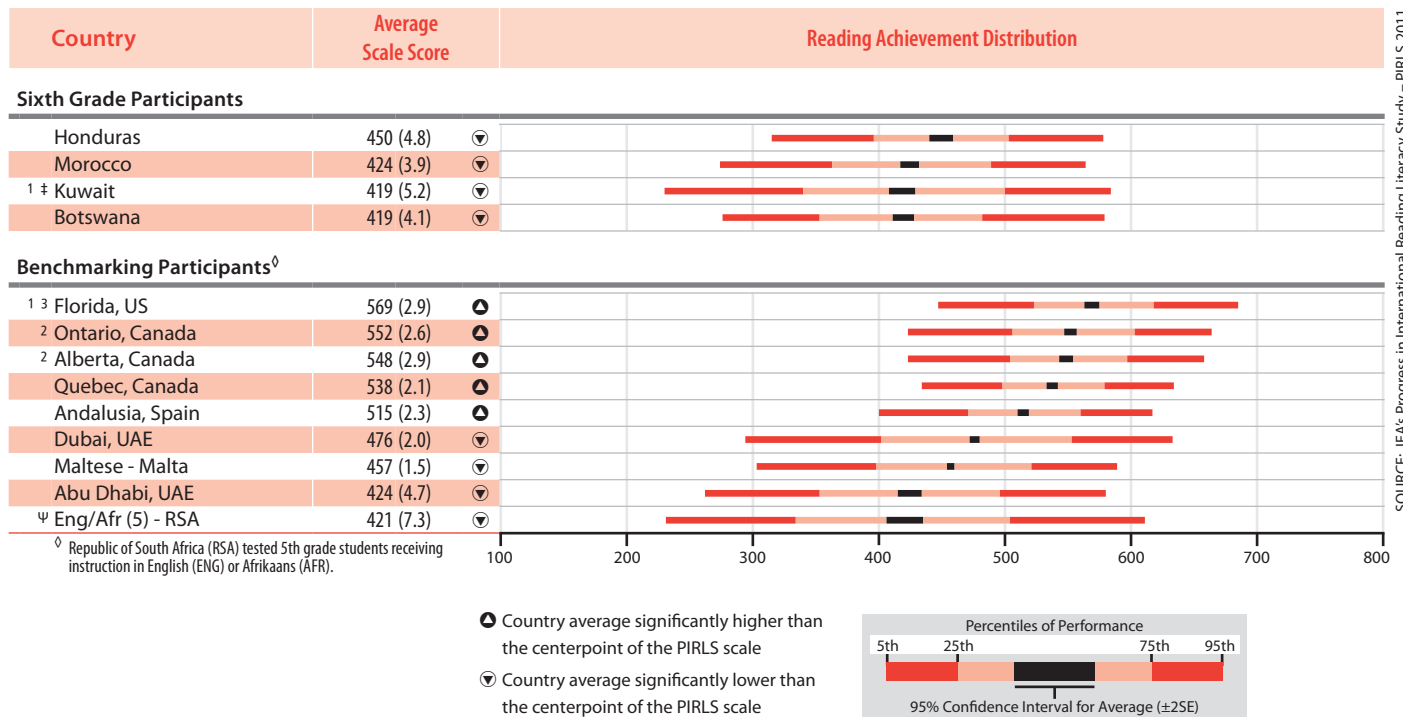


SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

✳ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.  
 ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.  
 See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.



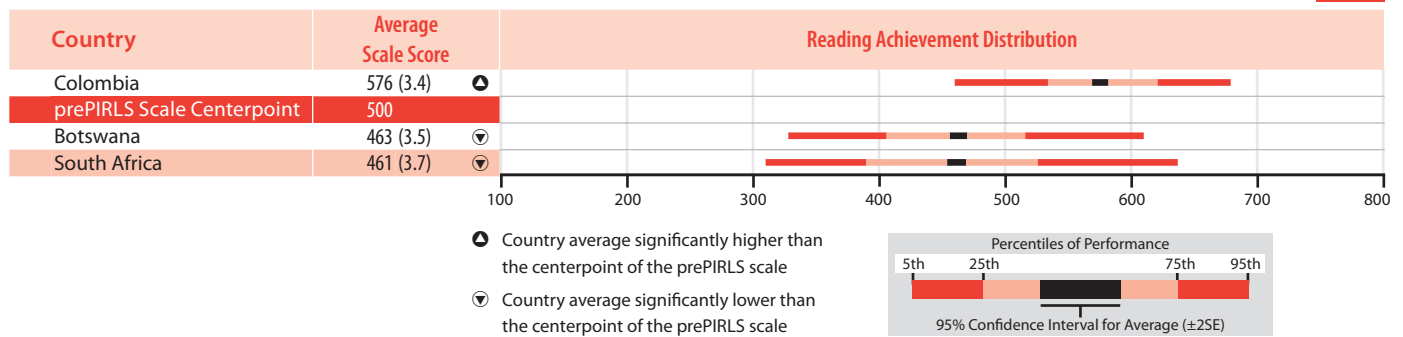
**Exhibit 1.1: Distribution of Reading Achievement (Continued)**



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>⊠</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

**Exhibit 1.2: Distribution of Reading Achievement**



( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit 1.2 (also on the second page of Exhibit 1.1) presents the results for the three countries that participated in prePIRLS: Botswana, Colombia, and South Africa.

For each section of Exhibit 1.1 and in Exhibit 1.2, participants are shown in decreasing order of average achievement. Also, there is a symbol by a participant's average scale score indicating if the average achievement is significantly higher (up arrow) or lower (down arrow) than the scale centerpoint of 500. PIRLS uses the centerpoint of the scale as a point of reference that remains constant from assessment to assessment. (In contrast, the international average, obtained by averaging across the mean scores for each of the participating countries, changes from assessment to assessment as the number and characteristics of the participating countries change.) Finally, several countries have annotations about 1) population coverage (detailed in Exhibit C.2); 2) sampling participation rates (explained in Exhibit C.8), and 3) the potential for bias in their achievement estimates (explained in the section after next).

### *Achievement in PIRLS 2011 at the Fourth Grade*

The results in Exhibit 1.1 (first page) reveal that a number of countries performed quite well on PIRLS 2011, with 32 countries having higher achievement than the scale centerpoint of 500. Impressively, a number of countries had higher achievement on average than the High International Benchmark of 550. Because there are often relatively small differences between participants in average achievement, Exhibit 1.3 shows whether or not the differences in average achievement among the countries are statistically significant.

Hong Kong SAR, the Russian Federation, Finland, and Singapore were the top-performing countries in PIRLS 2011. Looking at the results in Exhibit 1.1 and taking into account the information in Exhibit 1.3, it can be seen that these four countries performed similarly and had higher achievement than all of the other countries. The next tier of high-performing countries included Northern Ireland, the United States, Denmark, Croatia, and Chinese Taipei, followed closely by Ireland and England, who rounded out the top eleven high-achieving countries. Among the benchmarking participants, the state of Florida in the United States was a top performer, similar to the top-tier of high-achieving countries. The Canadian province of Ontario also did very well, with achievement similar to the second tier of high-achieving countries.

While there were small differences from country to country, there was a substantial range in performance from the top-performing to the lower-performing countries. Twelve countries had average achievement below the PIRLS centerpoint of 500. For the most part, these countries had average achievement from 425 to 488, falling between the Intermediate (475) and Low International Benchmarks (400).

### *Very Low Performance on PIRLS 2011*

It is a well-known principle of educational measurement that the difficulty of the items used to assess student achievement should match the ability of the students taking the assessment. In the context of assessing reading comprehension, measurement is most efficient when there is a reasonable match between the reading ability level of the student population being assessed and the difficulty of the assessment passages and items. The greater the mismatch, the more difficult it becomes to achieve reliable measurement. In particular, when the assessment tasks are much too challenging for most students, to the extent that many students are responding at chance level, it is extremely difficult to achieve acceptable measurement quality.

Monitoring trends over time is particularly problematic for a country with a high degree of mismatch between assessment difficulty and student achievement. If there are substantial numbers of students with very low scores, their achievement is likely to be overestimated and, consequently, the overall achievement distribution becomes biased upwards. Educators and policy makers may work hard and make real strides in improving education from this assessment cycle to the next. However, because the achievement distribution at the earlier cycle was overestimated to begin with, the country would not see evidence of this improvement in the assessment results. The apparently poor return for all of the effort could be very disheartening to those who worked so hard and could prove a disincentive to further investment and effort.

Having substantial numbers of students with very low scores in a country also makes it difficult to estimate performance separately for the literary and informational reading purposes and, in particular, for the reading comprehension processes. The items comprising the interpreting, integrating, and evaluating scale were particularly difficult for such countries.

To identify countries where performance is deemed too low to provide reliable measurement of achievement and meaningful trend comparisons, the

**Exhibit 1.3: Multiple Comparisons of Average Reading Achievement**

Instructions: Read across the row for a country to compare performance with the countries listed along the top of the chart. The symbols indicate whether the average achievement of the country in the row is significantly lower than that of the comparison country, significantly higher than that of the comparison country, or if there is no statistically significant difference between the average achievement of the two countries.

Country	Average Scale Score	Hong Kong SAR	Russian Federation	Finland	Singapore	Northern Ireland	United States	Denmark	Croatia	Chinese Taipei	Ireland	England	Canada	Netherlands	Czech Republic	Sweden	Italy	Germany	Israel	Portugal	Hungary	Slovak Republic	Bulgaria	New Zealand	Slovenia	Austria	Lithuania	Australia	Poland	France	Spain
Hong Kong SAR	571 (2.3)					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Russian Federation	568 (2.7)																														
Finland	568 (1.9)																														
Singapore	567 (3.3)																														
Northern Ireland	558 (2.4)																														
United States	556 (1.5)	▼	▼	▼	▼																										
Denmark	554 (1.7)	▼	▼	▼	▼																										
Croatia	553 (1.9)	▼	▼	▼	▼																										
Chinese Taipei	553 (1.9)	▼	▼	▼	▼																										
Ireland	552 (2.3)	▼	▼	▼	▼	▼																									
England	552 (2.6)	▼	▼	▼	▼	▼																									
Canada	548 (1.6)	▼	▼	▼	▼	▼	▼	▼																							
Netherlands	546 (1.9)	▼	▼	▼	▼	▼	▼	▼	▼																						
Czech Republic	545 (2.2)	▼	▼	▼	▼	▼	▼	▼	▼	▼																					
Sweden	542 (2.1)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼																				
Italy	541 (2.2)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼																			
Germany	541 (2.2)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼																		
Israel	541 (2.7)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼																	
Portugal	541 (2.6)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼																
Hungary	539 (2.9)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼															
Slovak Republic	535 (2.8)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼														
Bulgaria	532 (4.1)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼													
New Zealand	531 (1.9)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼												
Slovenia	530 (2.0)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼											
Austria	529 (2.0)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼										
Lithuania	528 (2.0)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼									
Australia	527 (2.2)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼								
Poland	526 (2.1)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼							
France	520 (2.6)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼						
Spain	513 (2.3)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼					
Norway	507 (1.9)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼				
Belgium (French)	506 (2.9)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼				
Romania	502 (4.3)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Georgia	488 (3.1)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Malta	477 (1.4)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Trinidad and Tobago	471 (3.8)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Azerbaijan	462 (3.3)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Iran, Islamic Rep. of	457 (2.8)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Colombia	448 (4.1)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
United Arab Emirates	439 (2.2)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Saudi Arabia	430 (4.4)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Indonesia	428 (4.2)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Qatar	425 (3.5)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Oman	391 (2.8)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Morocco	310 (3.9)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Honduras (6)	450 (4.8)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Morocco (6)	424 (3.9)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Kuwait (6)	419 (5.2)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			
Botswana (6)	419 (4.1)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼			

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Benchmarking Participants**

Country	Average Scale Score	Hong Kong SAR	Russian Federation	Finland	Singapore	Northern Ireland	United States	Denmark	Croatia	Chinese Taipei	Ireland	England	Canada	Netherlands	Czech Republic	Sweden	Italy	Germany	Israel	Portugal	Hungary	Slovak Republic	Bulgaria	New Zealand	Slovenia	Austria	Lithuania	Australia	Poland	France	Spain
Florida, US	569 (2.9)					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Ontario, Canada	552 (2.6)	▼	▼	▼	▼																										
Alberta, Canada	548 (2.9)	▼	▼	▼	▼																										
Quebec, Canada	538 (2.1)	▼	▼	▼	▼	▼																									
Andalusia, Spain	515 (2.3)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
Dubai, UAE	476 (2.0)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
Maltese - Malta	457 (1.5)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
Abu Dhabi, UAE	424 (4.7)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
Eng/Afr (5) - RSA	421 (7.3)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	

Significance tests were not adjusted for multiple comparisons. Five percent of the comparisons would be statistically significant by chance alone.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

**Exhibit 1.3: Multiple Comparisons of Average Reading Achievement (Continued)**

Average achievement significantly higher than comparison country										Average achievement significantly lower than comparison country											
Benchmarking Participants										Benchmarking Participants										Average Scale Score	Country
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	571 (2.3)	Hong Kong SAR
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	568 (2.7)	Russian Federation
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	568 (1.9)	Finland
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	567 (3.3)	Singapore
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	558 (2.4)	Northern Ireland
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	556 (1.5)	United States
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	554 (1.7)	Denmark
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	553 (1.9)	Croatia
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	553 (1.9)	Chinese Taipei
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	552 (2.3)	Ireland
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	552 (2.6)	England
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	548 (1.6)	Canada
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	546 (1.9)	Netherlands
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	545 (2.2)	Czech Republic
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	542 (2.1)	Sweden
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	541 (2.2)	Italy
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	541 (2.2)	Germany
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	541 (2.7)	Israel
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	541 (2.6)	Portugal
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	539 (2.9)	Hungary
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	535 (2.8)	Slovak Republic
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	532 (4.1)	Bulgaria
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	531 (1.9)	New Zealand
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	530 (2.0)	Slovenia
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	529 (2.0)	Austria
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	528 (2.0)	Lithuania
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	527 (2.2)	Australia
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	526 (2.1)	Poland
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	520 (2.6)	France
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	513 (2.3)	Spain
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	507 (1.9)	Norway
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	506 (2.9)	Belgium (French)
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	502 (4.3)	Romania
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	488 (3.1)	Georgia
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	477 (1.4)	Malta
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	471 (3.8)	Trinidad and Tobago
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	462 (3.3)	Azerbaijan
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	457 (2.8)	Iran, Islamic Rep. of
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	448 (4.1)	Colombia
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	439 (2.2)	United Arab Emirates
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	430 (4.4)	Saudi Arabia
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	428 (4.2)	Indonesia
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	425 (3.5)	Qatar
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	391 (2.8)	Oman
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	310 (3.9)	Morocco
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	450 (4.8)	Honduras (6)
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	424 (3.9)	Morocco (6)
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	419 (5.2)	Kuwait (6)
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	419 (4.1)	Botswana (6)
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	569 (2.9)	Florida, US
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	552 (2.6)	Ontario, Canada
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	548 (2.9)	Alberta, Canada
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	538 (2.1)	Quebec, Canada
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	515 (2.3)	Andalusia, Spain
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	476 (2.0)	Dubai, UAE
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	457 (1.5)	Maltese - Malta
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	424 (4.7)	Abu Dhabi, UAE
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	421 (7.3)	Eng/Afr (5) - RSA

Significance tests were not adjusted for multiple comparisons. Five percent of the comparisons would be statistically significant by chance alone.  
 (.) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

SOURCE: IEAs Progress in International Reading Literacy Study - PIRLS 2011

TIMSS & PIRLS International Study Center conducted extensive investigations to detect when the quality of measurement erodes (Martin, Mullis, & Foy, in press). The proportion of students unable to respond to any items on the assessment was selected as the best indicator of degree of mismatch between students' skills and those demanded by the assessment. Although the absolute lower limit would be no items answered correctly, about half of the items were in multiple-choice format and guessing on these was possible. Thus, beginning in 2011, the criterion for having achievement too low for estimation was established based on the percentage of the students having a score no higher than what a student would achieve by guessing on all the multiple-choice questions—essentially the percentage of students performing below chance.

For each country, Appendix D shows the percentage of students with achievement too low for estimation (Exhibit D.1 for the fourth grade and D.2 for the eighth grade). When, as in Morocco, the percentage of students with achievement too low for estimation exceeded 25 percent, the country was annotated with the symbol Ж. Achievement trends are not reported for these countries because of concerns about bias in the estimation of achievement for the student population. When, as in Oman, the percentage of students with achievement too low for estimation exceeded 15 percent but did not exceed 25 percent, the country was annotated with the symbol Ψ, indicating reservations about the reliability of the achievement estimates.

### *Achievement in PIRLS 2011 at the Sixth Grade*

As a group, the countries assessing their sixth grade students had average achievement between 419 and 450, falling between the Intermediate (475) and Low International Benchmarks (400). This level of achievement is comparable to that of most of lower-performing countries at the fourth grade.

In addition, these countries made the appropriate decision to assess their sixth grade rather than their fourth grade students. It is likely that there would have been difficulty in estimating reading achievement at the fourth grade. As a case in point, Morocco's sixth grade students had an average achievement of 424 compared to the fourth grade average of 310, which was much too low for reliable estimation.

### *Achievement in prePIRLS 2011*

Exhibit 1.2 presents the achievement distributions on prePIRLS for the three countries that pioneered this assessment at the fourth grade. The results demonstrate how prePIRLS results can complement PIRLS results, since

Botswana, Colombia, and South Africa also participated in some aspect of PIRLS 2011. South Africa engaged in a PIRLS 2011 benchmarking effort to link back to its PIRLS 2006 results for fifth grade students receiving instruction in English or Afrikaans. Botswana participated in PIRLS 2011 at the sixth grade, and Colombia administered both PIRLS and prePIRLS to the same fourth grade students.

Because PIRLS has a well-established achievement scale, and PIRLS and prePIRLS are based on the same framework, it was possible to use the Colombian data to link the two assessments. Subsequent to verifying that PIRLS and prePIRLS were measuring the same underlying reading comprehension construct, the prePIRLS scale was established by using the Colombian data to calibrate the prePIRLS items in the context of PIRLS. Essentially the stable PIRLS 2011 item parameters were used to anchor the prePIRLS scale.

Because prePIRLS is a separate assessment, the results are being reported on its own scale. Given the widespread familiarity with the 0–1,000 scale metric used by PIRLS and TIMSS, this metric also was used for prePIRLS. The prePIRLS scale centerpoint of 500 was set to the mean achievement of the three countries combined, and 100 points on the scale was set to the standard deviation of the combined achievement distribution.

The results in Exhibit 1.2 show that the Colombian fourth grade students performed above the scale centerpoint, on average, whereas those from Botswana and South Africa performed below the scale centerpoint. The results from Botswana and South Africa were very similar, except that South Africa had a larger range of performance.

Because the Colombian fourth grade students were able to participate in both PIRLS and prePIRLS with good measurement in both assessments, the Colombian data provide a rough estimate of the relative difficulty of prePIRLS compared to PIRLS. The Colombian fourth grade students had an average achievement of 448 on PIRLS and 576 on prePIRLS, a difference of 128 points. This indicates that PIRLS is, on average, approximately 130 points more difficult than prePIRLS. For example, under this assumption, the fourth grade students in Botswana and South Africa would have an average score on the PIRLS scale of about 330. First, this confirms that fourth grade students in these two countries have average reading achievement below the PIRLS Low International Benchmark (400). It also is interesting to compare the estimated PIRLS difference in reading achievement between the fourth and sixth grade students in Botswana of about 90 points with the Moroccan PIRLS difference

in reading between fourth and sixth grade of 114 points. Apparently, countries with many very low achieving students in the fourth grade make substantial gains in reading achievement by the sixth grade.

### *Trends in Reading Achievement*

Exhibit 1.4 displays changes in average reading achievement for the countries and benchmarking participants that have comparable data from previous PIRLS assessments. The participants are shown in alphabetical order, with 30 countries and four benchmarking participants having data from 2001 and 2006, or either 2001 or 2006, that can be compared to 2011.

It is particularly interesting to consider the PIRLS 2011 achievement results in light of the information countries provided in the *PIRLS 2011 Encyclopedia*. Many countries are engaged in implementing important structural, curricular, and instructional reforms based on PIRLS 2001 and 2006 results. Looking at the trends across the participants during the decade of 2001 to 2011, there have been more increases than decreases in reading achievement. Ten countries had gains in achievement in 2011 compared to 2001, and 13 countries showed recent improvement between 2006 and 2011. A few of these countries are the same, showing improvement from assessment to assessment, including Hong Kong SAR and Singapore with the bulk of their dramatic improvements between 2001 and 2006, and Slovenia showing a similar pattern but with improvement more equivalent over the two five-year periods. Iran, Norway, and the United States show improvement between 2001 and 2011, but only due to gains between 2006 and 2011.

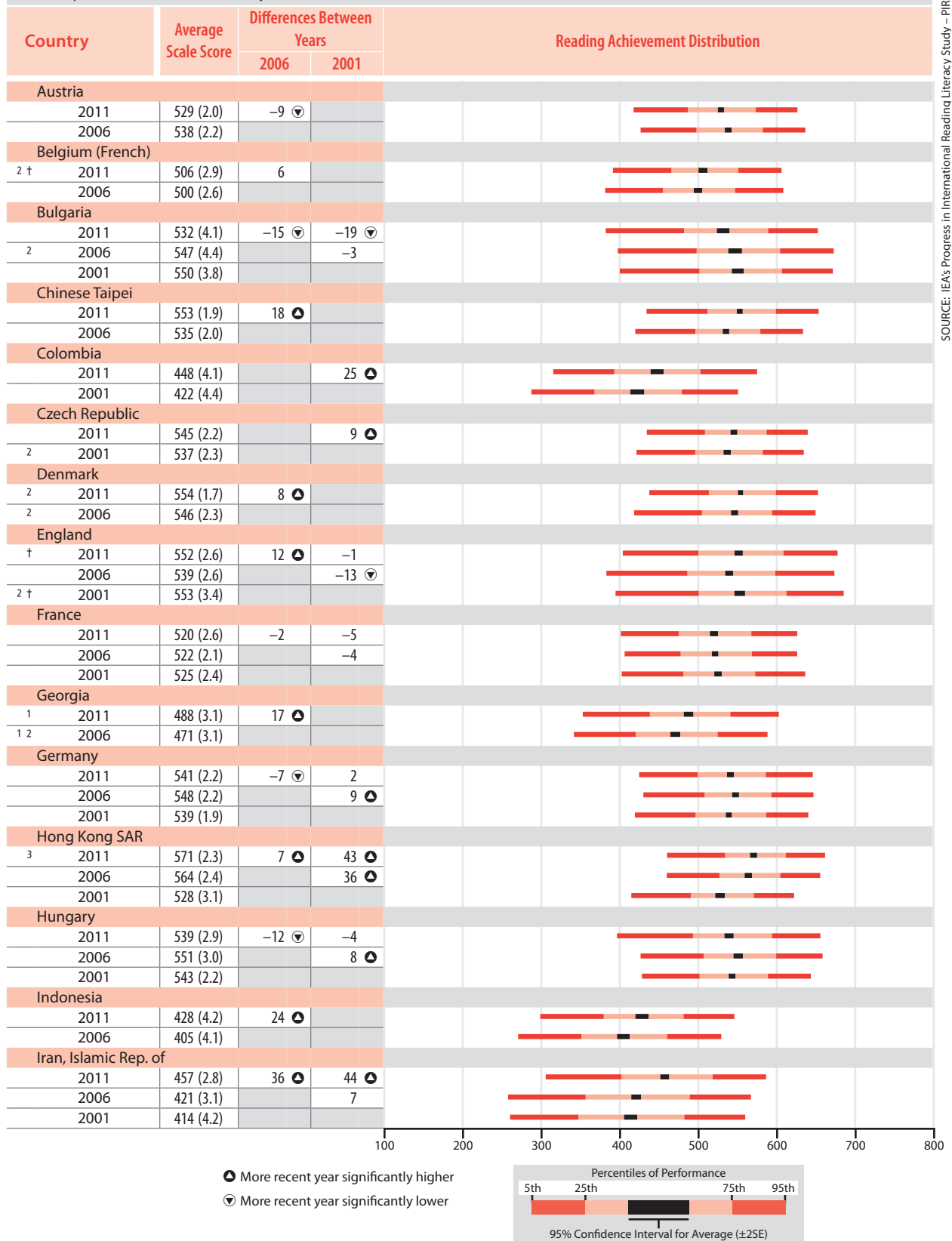
Declines in reading achievement were primarily in European countries, and more often since 2006. Four European countries—Bulgaria, Lithuania, the Netherlands, and Sweden—showed net declines in reading achievement over the decade, with decreases in average reading achievement since 2006. The ten-year decline in Bulgaria mostly occurred since 2006, and the ten-year decline in Lithuania was relatively comparable from assessment to assessment but slightly larger more recently. The ten-year decline in Sweden was relatively comparable from assessment to assessment but at a decreasing rate. In addition, another four European countries—Austria, Germany, Hungary, and Italy—had declines between 2006 and 2011.



Among the benchmarking participants, the Canadian province of Alberta had lower average reading achievement in 2011 than in 2006. The South African fifth grade students receiving instruction in English and Afrikaans showed signs of improvement compared to those in 2006, but the results were not statistically significant.

**Exhibit 1.4: Trends in Reading Achievement**

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

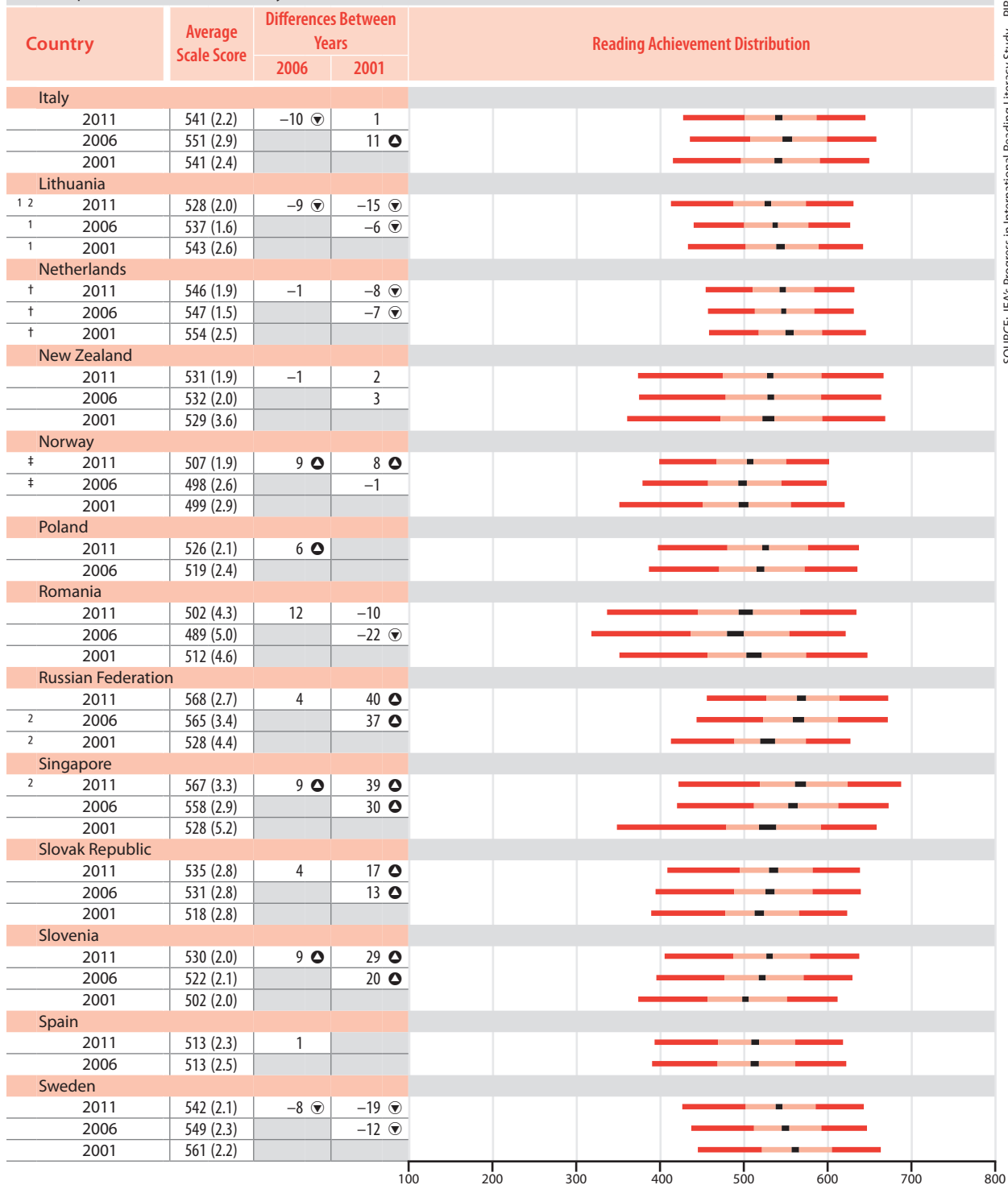
Ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%. Such annotations in exhibits with trend data began in 2011, so data from assessments prior to 2011 are not annotated for reservations.

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

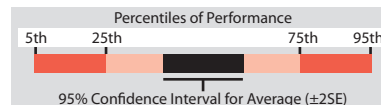
**Exhibit 1.4: Trends in Reading Achievement (Continued)**

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.



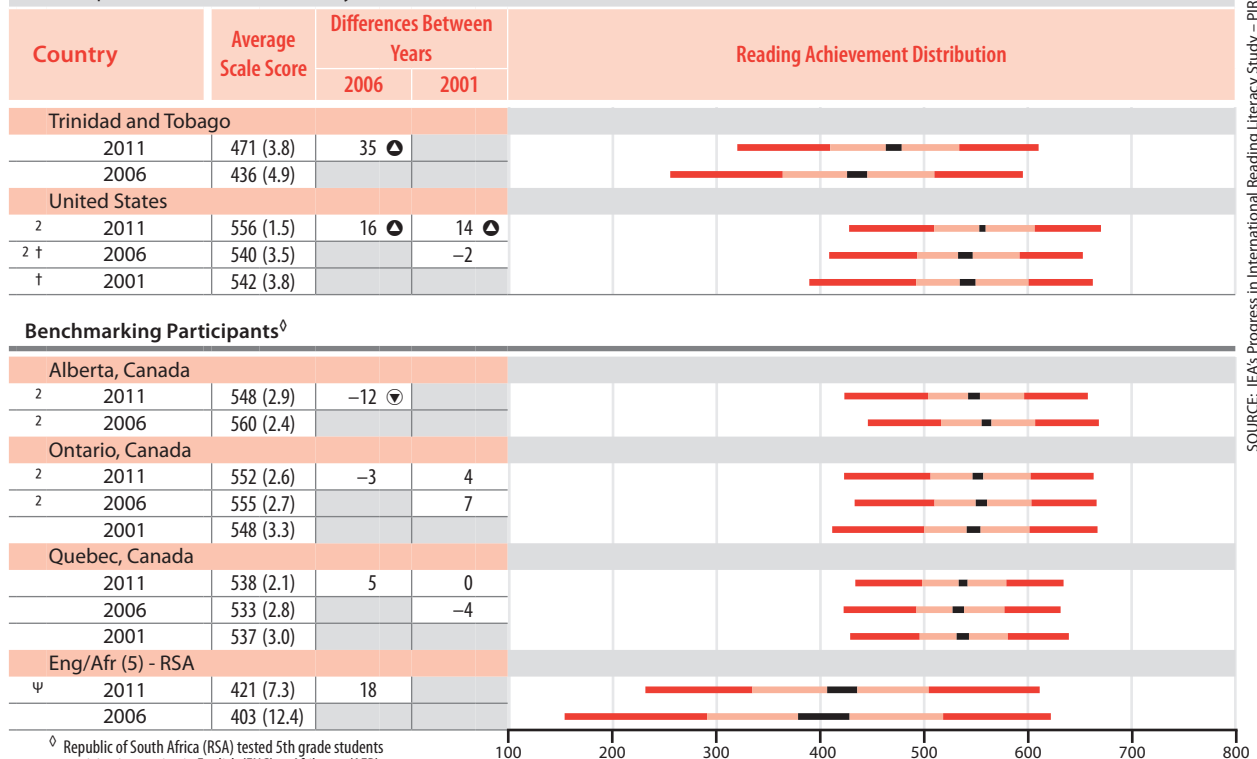
SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

▲ More recent year significantly higher  
▼ More recent year significantly lower



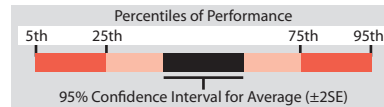
**Exhibit 1.4: Trends in Reading Achievement (Continued)**

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.



<sup>⊠</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ More recent year significantly higher
- ▼ More recent year significantly lower



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

## Gender Differences in Reading

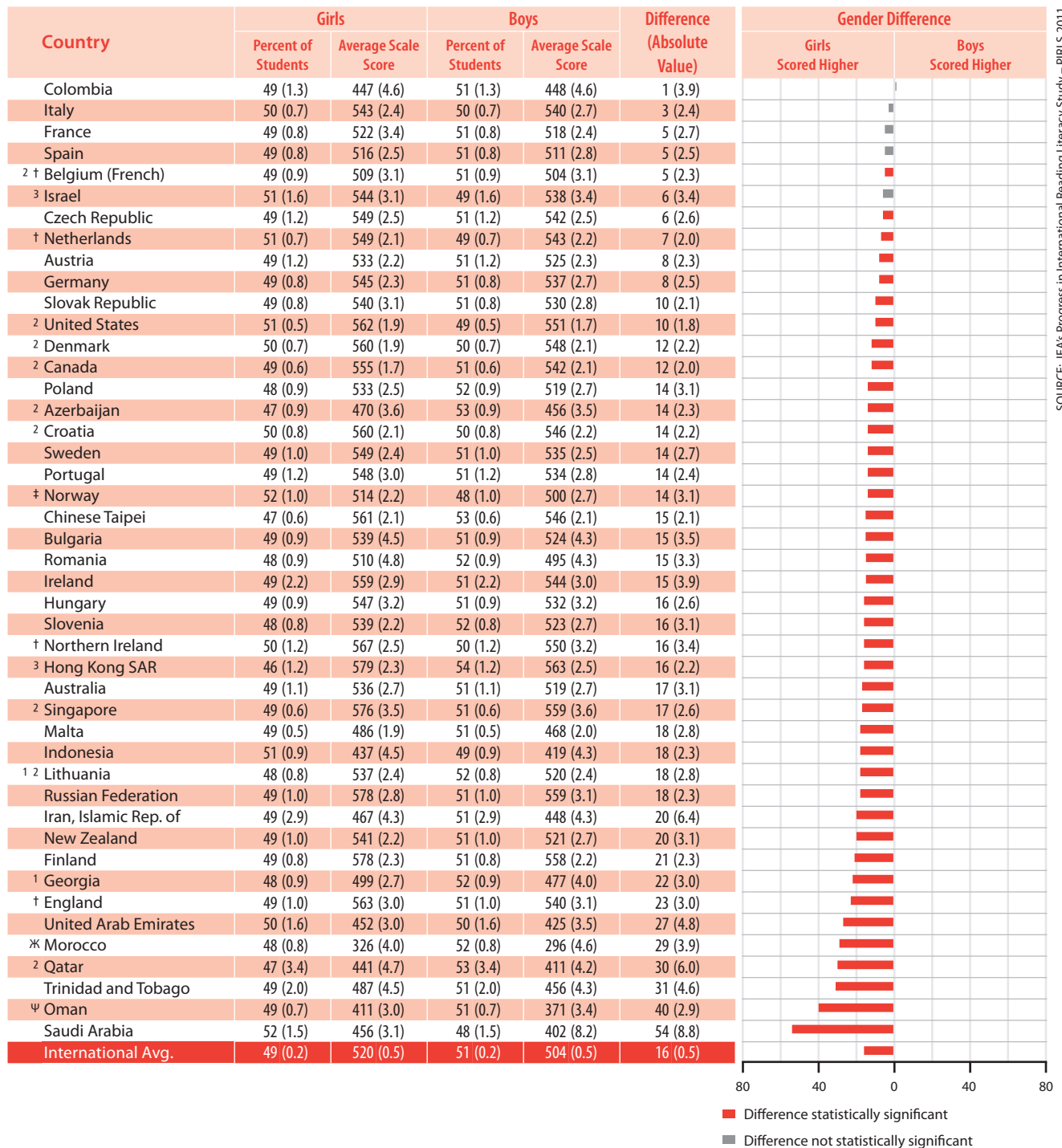
In each successive assessment, PIRLS has consistently found that fourth grade girls have much higher average reading achievement than boys in most countries, and the 2011 results continue this pattern. Recent research in the United States found that girls had an advantage in reading at all grades from kindergarten through the eighth grade (Robinson & Lubienski, 2011), and PISA 2009 reported that 15-year-old girls performed consistently better in reading than boys (OECD, 2010). That gender gaps favoring girls persist across grades is an issue of concern, given the fundamental importance of reading for success in school. However, as noted in the *PIRLS 2011 Encyclopedia*, a number of countries are undertaking wide ranging steps across their educational systems specifically to improve reading teaching and learning for both boys and girls.

### *Differences in Reading Achievement by Gender*

Exhibit 1.5 presents the PIRLS 2011 gender differences in reading achievement. For the PIRLS 2011 countries at fourth grade, at sixth grade, and the benchmarking participants, it shows girls' average achievement, boys' average achievement, and the difference between the two averages. The bar graph shows the size of the difference and whether that difference is statistically significant (as indicated by a darkened bar). For countries participating at the fourth grade, international averages also are shown (averages across the mean scores for girls in each of the countries and the mean scores for boys in each of the countries). Exhibit 1.6 presents corresponding data for prePIRLS participants.

In each section of Exhibit 1.5, the countries are shown in order by the increasing size of the difference between girls and boys in average reading achievement. Internationally, on average, the difference at the fourth grade favoring girls was 520 compared to 504, an advantage of 16 score points (after rounding). For the countries at the fourth grade, the first countries listed in the exhibit showed no reading achievement differences between girls and boys, including Colombia, Italy, France, Spain, and Israel. However, the remaining countries all had differences favoring girls to some extent, from small to quite substantial gaps. Some of the largest differences (27–54 score points) were found in some of the Arabic-speaking countries, including the United Arab Emirates, Morocco, Qatar, Oman, and Saudi Arabia. At the sixth grade, girls had higher average reading achievement than boys in all four countries. Girls also had higher average reading achievement than boys in each of the benchmarking entities.

**Exhibit 1.5: Average Reading Achievement by Gender**



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

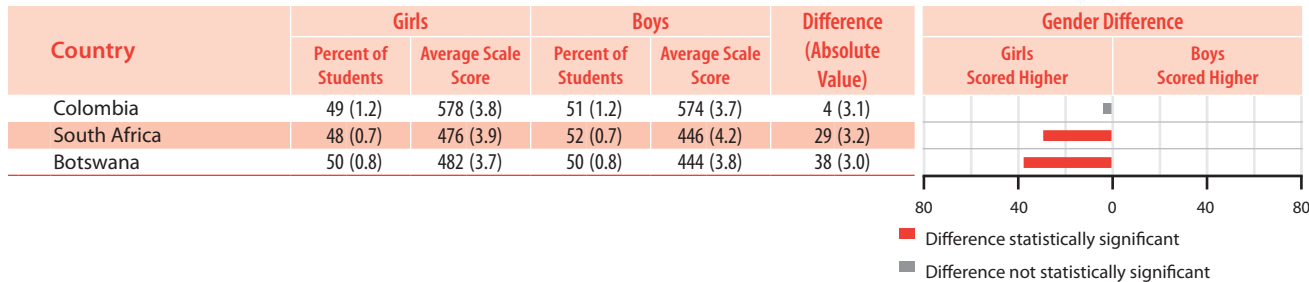
⌘ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.  
 ⚭ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.  
 See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

**Exhibit 1.5: Average Reading Achievement by Gender (Continued)**



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 1.6: Average Reading Achievement by Gender**



( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit 1.6 displays the results for prePIRLS and shows that fourth grade girls had higher average reading achievement than boys in both South Africa and Botswana. The prePIRLS results for Colombian girls and boys paralleled those in PIRLS (Exhibit 1.5), showing essentially no difference in average achievement between the genders.

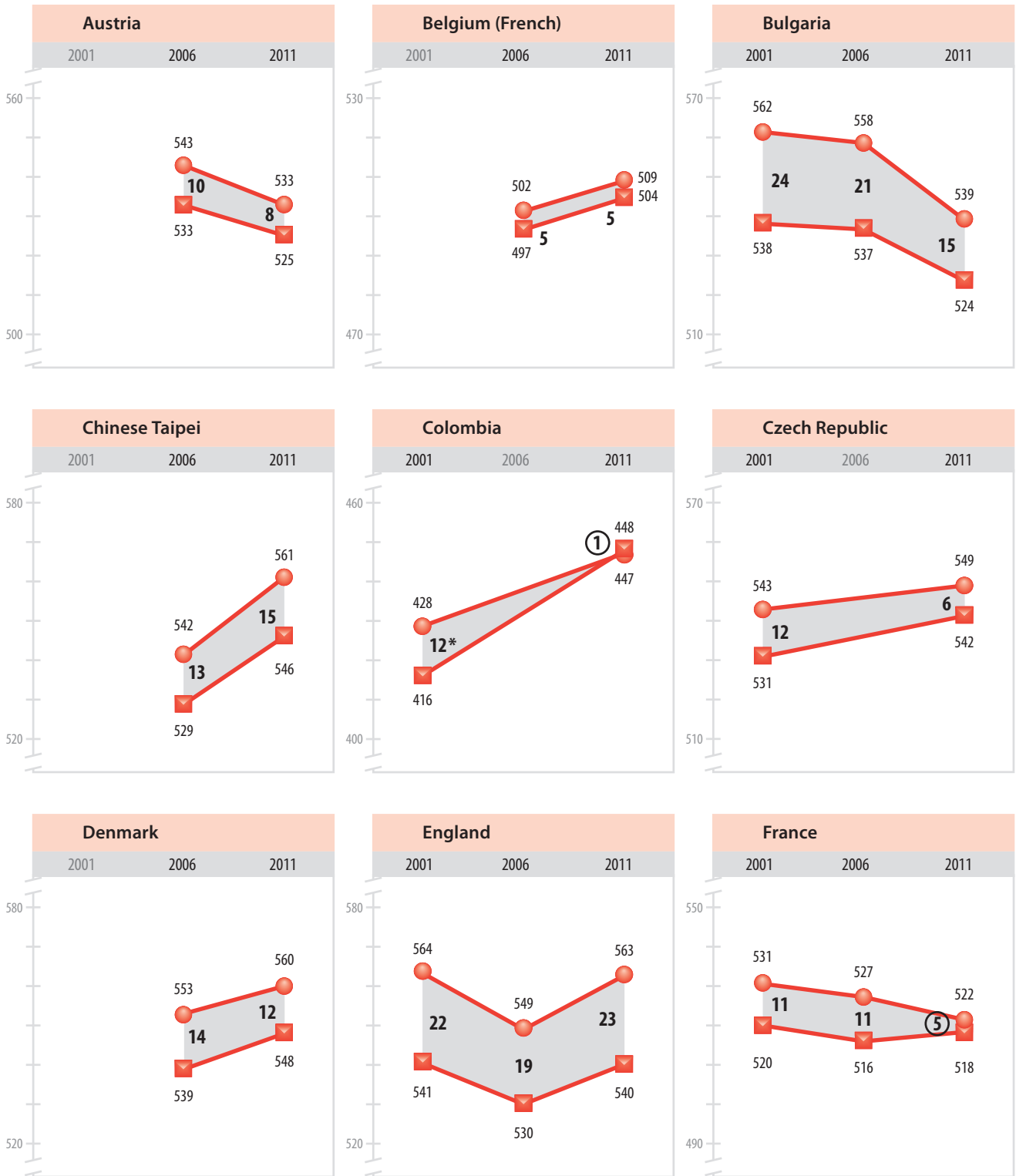
### *Trends in Reading Achievement by Gender*

Exhibit 1.7 shows a graphic representation, for each country in alphabetical order, of whether the gender gap at fourth grade favoring girls in reading achievement has grown or diminished over the past decade. The scale interval is the same for each country (10 points) to permit comparisons, although the part of the scale shown differs according to each country's average achievement. Unfortunately, the gender gap appears to have remained consistent over time for a number of the countries that participated in prior PIRLS assessments in 2001 and 2006.

Some reduction of the achievement gap has occurred in several countries. Colombia shows an excellent result in having closed the gender gap in average reading achievement between 2001 and 2011. France and Italy, who had differences in average reading achievement in 2001 and 2006 that favored girls, also have narrowed the gender gap, but there was no difference in average achievement in 2011 and this narrowing is due in part to declines in girls' reading achievement in the two countries. Compared to 2001, the Netherlands decreased the size of the gap in 2006 but made no further progress in 2011. In Sweden, the achievement gap remained substantial in 2011, but average reading achievement for girls has declined more than it has for boys across the assessments, thereby reducing the gender gap. Only two examples clearly run contrary to the desired trend: the Russian Federation has increased the gender gap from 2001 to 2011, and Hungary also has a significantly larger gender gap than in 2006.



**Exhibit 1.7: Trends in Reading Achievement by Gender**

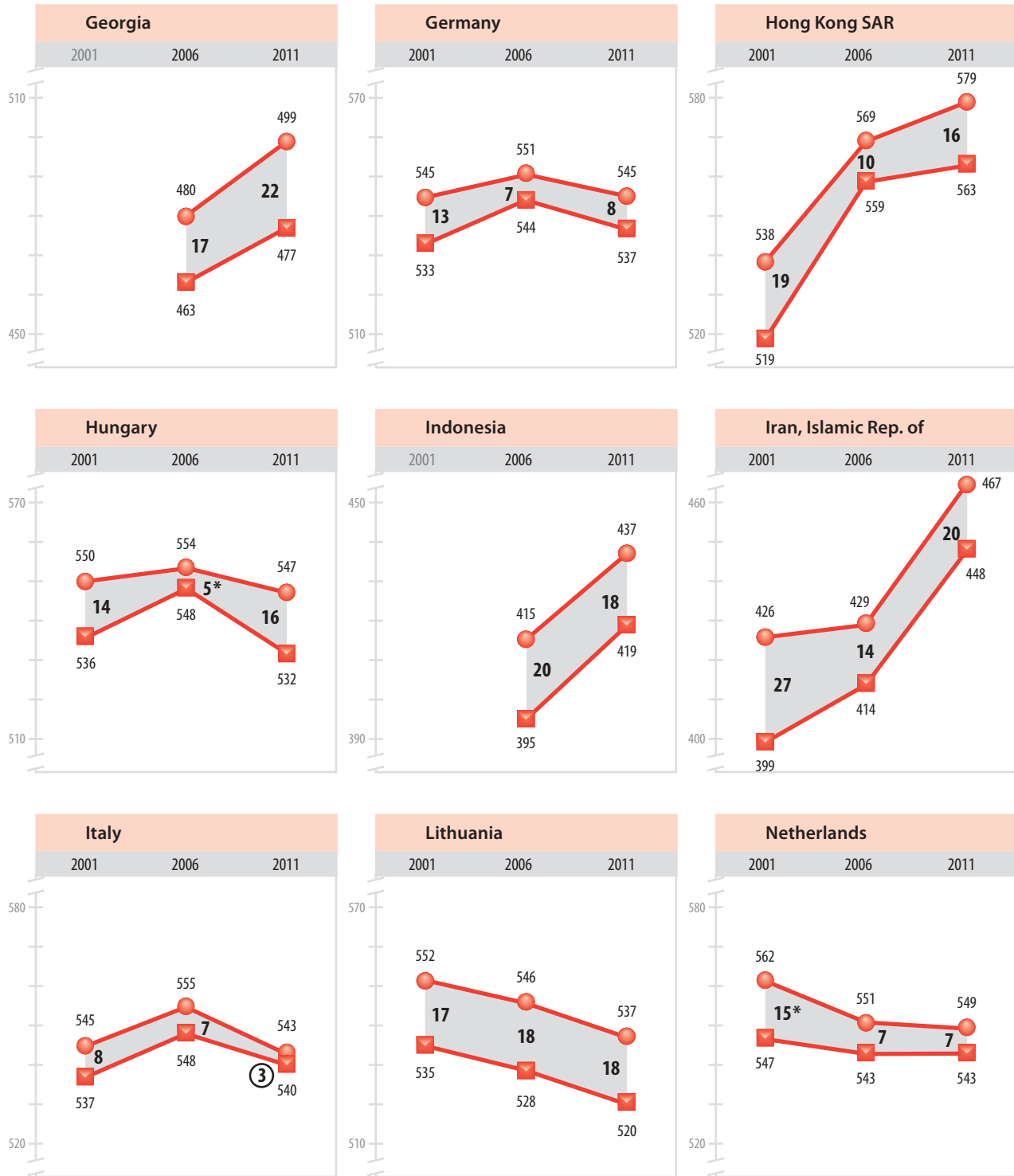


SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Girls —●— Boys —■— Achievement gaps are statistically significant unless they are circled.  
 \* Indicates achievement gap is significantly different from 2011 achievement gap.

Scale interval is 10 points for each country, but the part of the scale shown differs according to each country's average achievement.

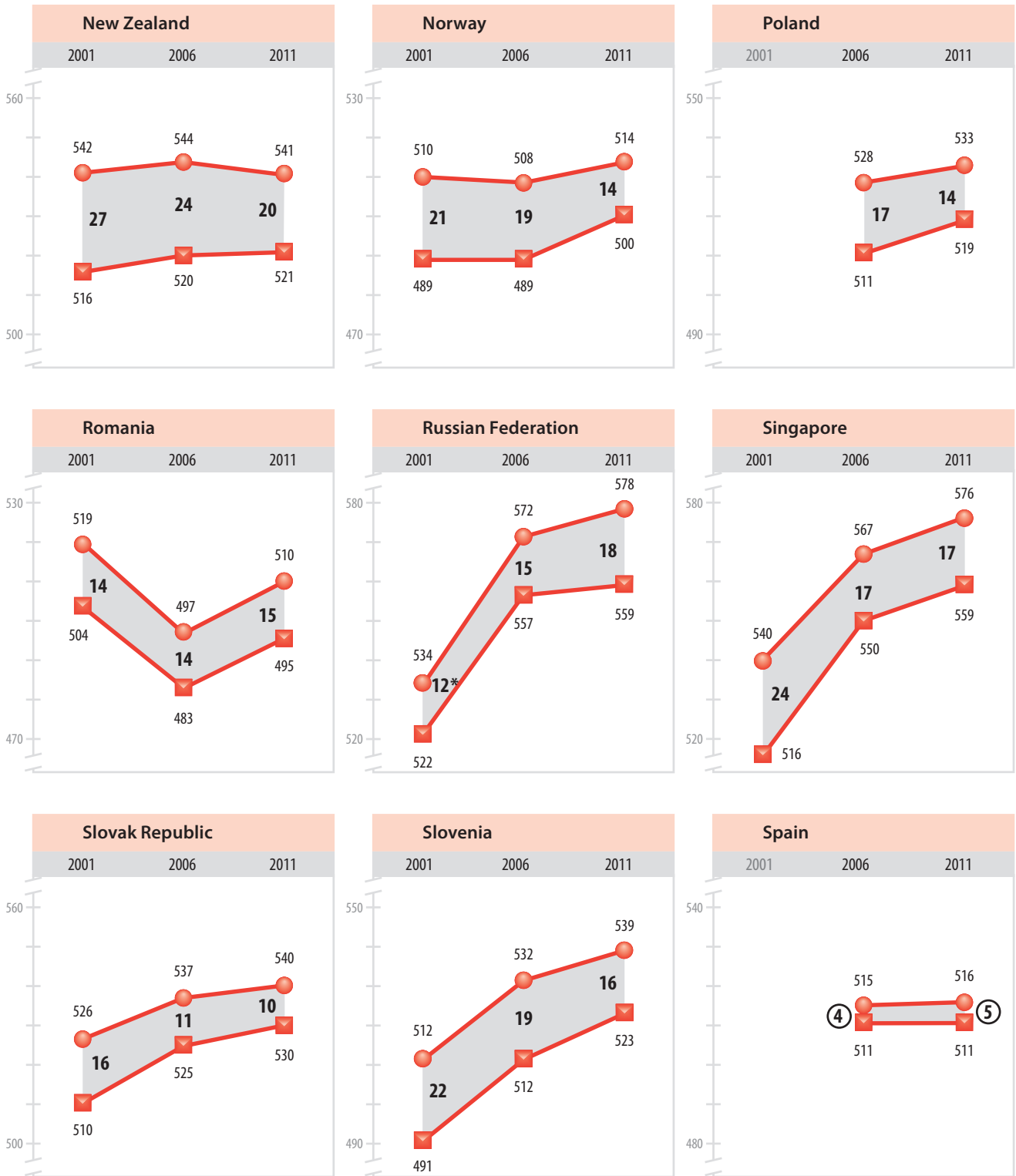
**Exhibit 1.7: Trends in Reading Achievement by Gender (Continued)**



SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2011

Girls —●— Boys —■— Achievement gaps are statistically significant unless they are circled.  
 \* Indicates achievement gap is significantly different from 2011 achievement gap.

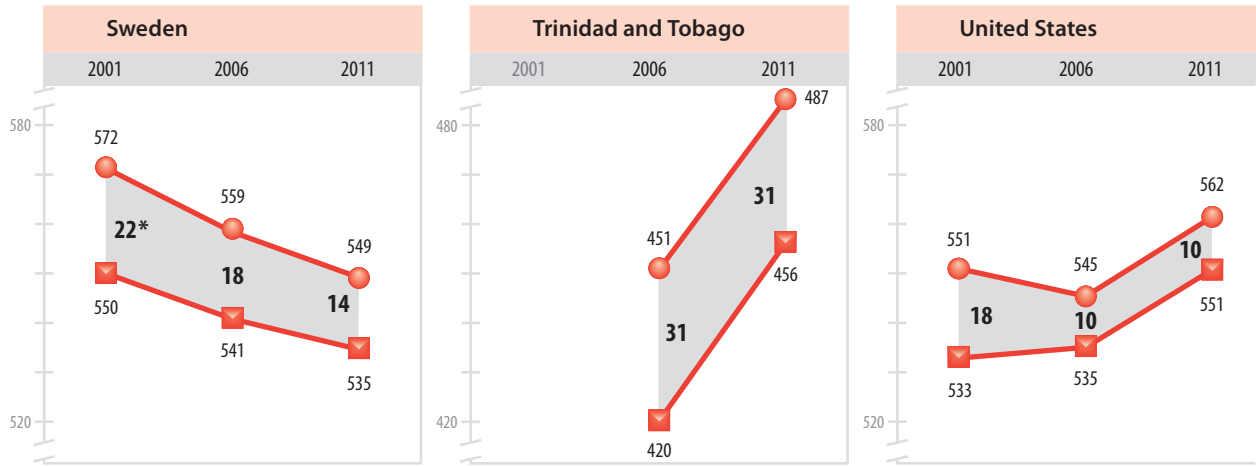
**Exhibit 1.7: Trends in Reading Achievement by Gender (Continued)**



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

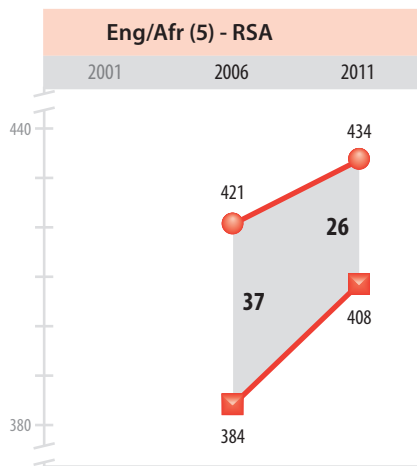
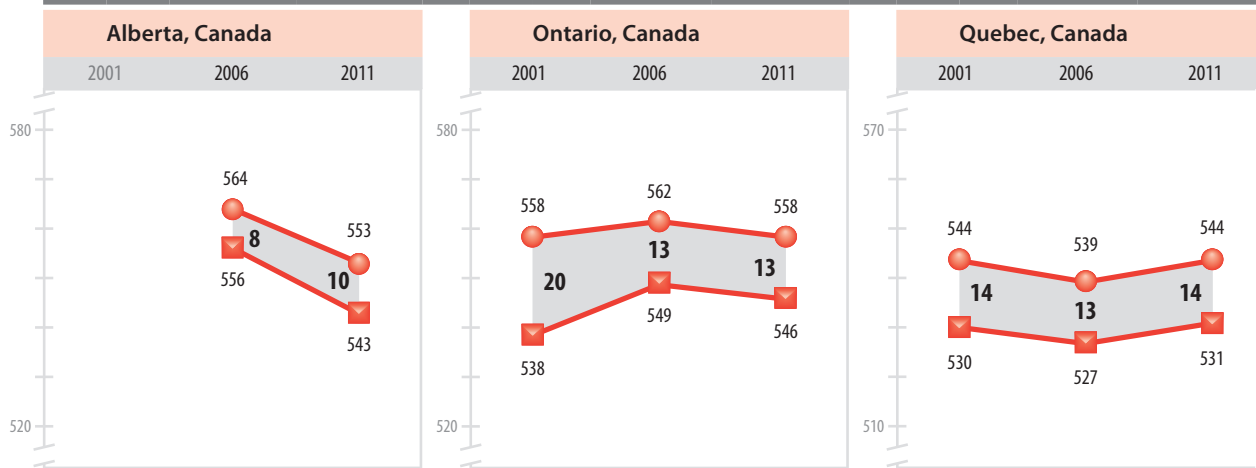
Girls —●— Boys —■— Achievement gaps are statistically significant unless they are circled.  
 \* Indicates achievement gap is significantly different from 2011 achievement gap.

**Exhibit 1.7: Trends in Reading Achievement by Gender (Continued)**



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Benchmarking Participants<sup>o</sup>**



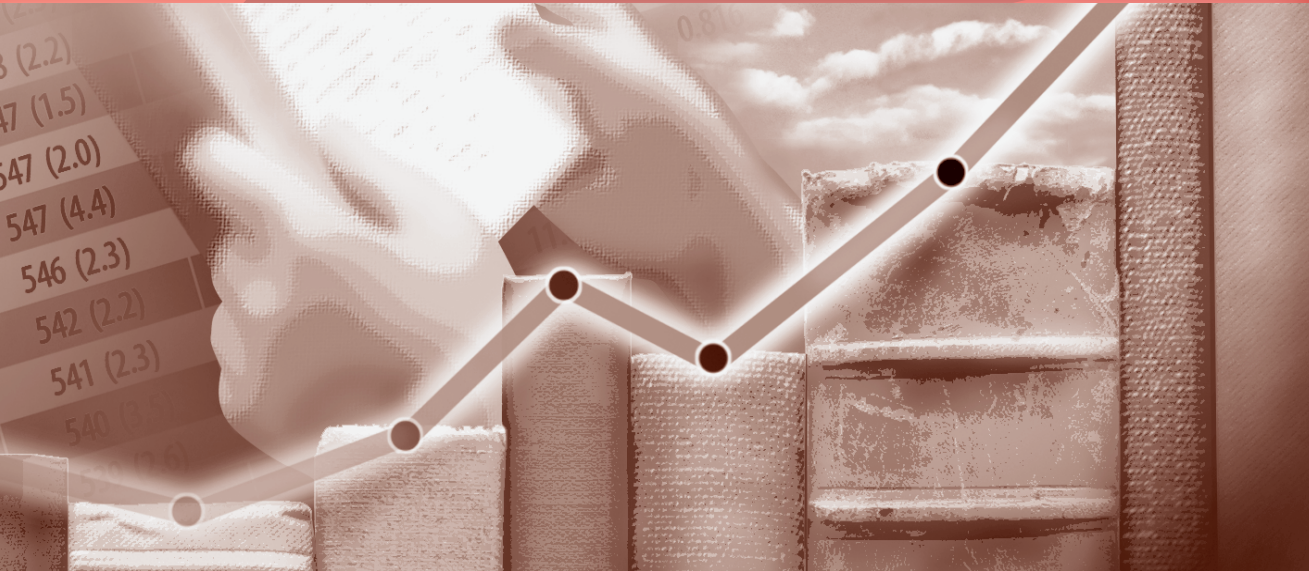
<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Girls ● Boys ■ Achievement gaps are statistically significant unless they are circled.  
 \* Indicates achievement gap is significantly different from 2011 achievement gap.





# Chapter 2



## Performance at the PIRLS 2011 International Benchmarks

Singapore had the largest percentage of students (24%) reach the PIRLS 2011 Advanced International Benchmark, followed by the Russian Federation, Northern Ireland, Finland, England, and Hong Kong SAR (18–19%).

Impressively, the majority of the PIRLS 2011 countries were able to educate 95 percent of their fourth grade students to a basic reading level (Low Benchmark).

Six countries raised the achievement of their entire distribution of students from low to high performers and showed improvement across all four international benchmark over the past decade.

**PIRLS Benchmarks:**

**Advanced International Benchmark 625**

**High International Benchmark 550**

**Intermediate International Benchmark 475**

**Low International Benchmark 400**

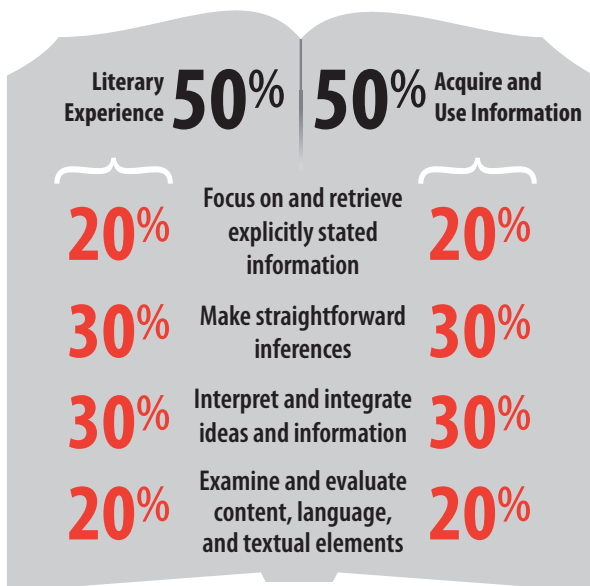
The PIRLS achievement scale summarizes fourth-grade students' performance in reading a range of literary and informational texts. For each of these texts, students responded to questions measuring a variety of comprehension processes, including retrieval, inferencing, integrating, and evaluating what they have read. PIRLS reports achievement at four points along the scale as international benchmarks: Advanced International Benchmark (625), High International Benchmark (550), Intermediate International Benchmark (475), and Low International Benchmark (400).

This chapter presents the results at the PIRLS 2011 International Benchmarks. To interpret achievement at the benchmarks, the TIMSS & PIRLS International Study Center worked with the PIRLS 2011 Reading Development Committee (RDG) to conduct a detailed scale anchoring analysis to describe reading achievement at the benchmarks. The chapter also contains a number of example items together with results, to illustrate performance at the benchmarks.

*PIRLS 2011 Assessment Framework*

The texts and items used in PIRLS 2011 were selected and developed based on the *PIRLS 2011 Assessment Framework*. The Framework describes the PIRLS view of reading literacy as an interactive process between the text and the reader, and describes the ways that PIRLS measures students' reading. It specifies two purposes that account for most of the reading done by young students in and out of school: for literary experience (50%), and to acquire and use information (50%).

The assessment is divided evenly between these two purposes, with half of the PIRLS texts being literary, and the other half informational. The adjacent graphic describes the features of the texts used in PIRLS 2011, and shows the diversity of the assessment material within and across reading purposes. Within each of the two reading purposes, the PIRLS items measure four processes of comprehension: focus on and retrieve explicitly stated information (20%), make straightforward inferences (30%), interpret and integrate ideas and information (30%), and examine and evaluate content, language, and textual elements (20%).





## LITERARY

The literary texts were complete short stories or episodes accompanied by supportive illustrations. The five passages included contemporary and traditional stories of approximately 800 words in length with a variety of settings. Each had essentially two main characters and a plot with one or two central events. The passages included a range of styles and language features, such as first person narration, humor, dialogue, and some figurative language.

## INFORMATIONAL

The five informational passages included a variety of continuous and non-continuous texts from 600 to 900 words in length. They had presentational features such as diagrams, maps, illustrations, photographs, or tables. The range of material covered scientific, ethnographic, biographical, historical, and practical information and ideas. Texts were structured in a number of ways, including by logic, argument, chronology, and topic. Several included organizational features such as subheadings, text boxes, or lists.

### *PIRLS 2011 International Benchmarks of Reading Achievement*

Exhibit 2.1 describes the skills demonstrated by students at each of the four International Benchmarks, which largely reflect the purposes and processes described in the *PIRLS 2011 Assessment Framework*. Benchmark descriptions are shown separately for literary and informational reading to reflect the varying demands that different types of texts present. Within each reading purpose, the progression of reading processes is evident across the International Benchmarks.

Students at the Advanced International Benchmark take the entire text into account to provide text-based support for their interpretations and explanations. Students at the High International Benchmark were able to distinguish significant actions and information, make inferences and interpretations with text-based support, evaluate content and textual elements, and recognize some language features. At the Intermediate International Benchmark, students could retrieve information, make straightforward inferences, use some presentational features, and begin to recognize language features. Lastly, students at the Low International Benchmark demonstrated the ability to retrieve information from a text when it is explicitly stated or easy to locate.

● **Advanced** International Benchmark

**625** *When reading **Literary** Texts, students can:*

- Integrate ideas and evidence across a text to appreciate overall themes
- Interpret story events and character actions to provide reasons, motivations, feelings, and character traits with full text-based support

*When reading **Informational** Texts, students can:*

- Distinguish and interpret complex information from different parts of text, and provide full text-based support
- Integrate information across a text to provide explanations, interpret significance, and sequence activities
- Evaluate visual and textual features to explain their function

○ **High** International Benchmark

**550** *When reading **Literary** Texts, students can:*

- Locate and distinguish significant actions and details embedded across the text
- Make inferences to explain relationships between intentions, actions, events, and feelings, and give text-based support
- Interpret and integrate story events and character actions and traits from different parts of the text
- Evaluate the significance of events and actions across the entire story
- Recognize the use of some language features (e.g., metaphor, tone, imagery)

*When reading **Informational** Texts, students can:*

- Locate and distinguish relevant information within a dense text or a complex table
- Make inferences about logical connections to provide explanations and reasons
- Integrate textual and visual information to interpret the relationship between ideas
- Evaluate content and textual elements to make a generalization

● **Intermediate** International Benchmark

**475** *When reading **Literary** Texts, students can:*

- Retrieve and reproduce explicitly stated actions, events, and feelings
- Make straightforward inferences about the attributes, feelings, and motivations of main characters
- Interpret obvious reasons and causes and give simple explanations
- Begin to recognize language features and style

*When reading **Informational** Texts, students can:*

- Locate and reproduce two or three pieces of information from within the text
- Use subheadings, text boxes, and illustrations to locate parts of the text

○ **Low** International Benchmark

**400** *When reading **Literary** Texts, students can:*

- Locate and retrieve an explicitly stated detail

*When reading **Informational** Texts, students can:*

- Locate and reproduce explicitly stated information that is at the beginning of the text

### *Achievement at the PIRLS 2011 International Benchmarks of Reading Achievement*

Exhibit 2.2 presents the percentage of students reaching each International Benchmark. The results are presented in descending order according to the percentage of students reaching the Advanced International Benchmark, first for countries that tested fourth grade students, followed by those who tested sixth grade students and benchmarking participants on the following page. The percentage of students reaching the Advanced Benchmark is indicated in the bar graph with a black dot. Because students who reached the Advanced Benchmark also reached the other benchmarks, the percentages illustrated in the graphic and shown in the columns to the right are cumulative.

Singapore had nearly a quarter (24%) of their students reach the Advanced International Benchmark, followed by the Russian Federation, Northern Ireland, Finland, England, Hong Kong SAR, the United States, Ireland, and Israel with 15 to 19 percent of students reaching the Advanced International Benchmark. The state of Florida in the United States also had more than one-fifth (22%) of students reach the Advanced International Benchmark.

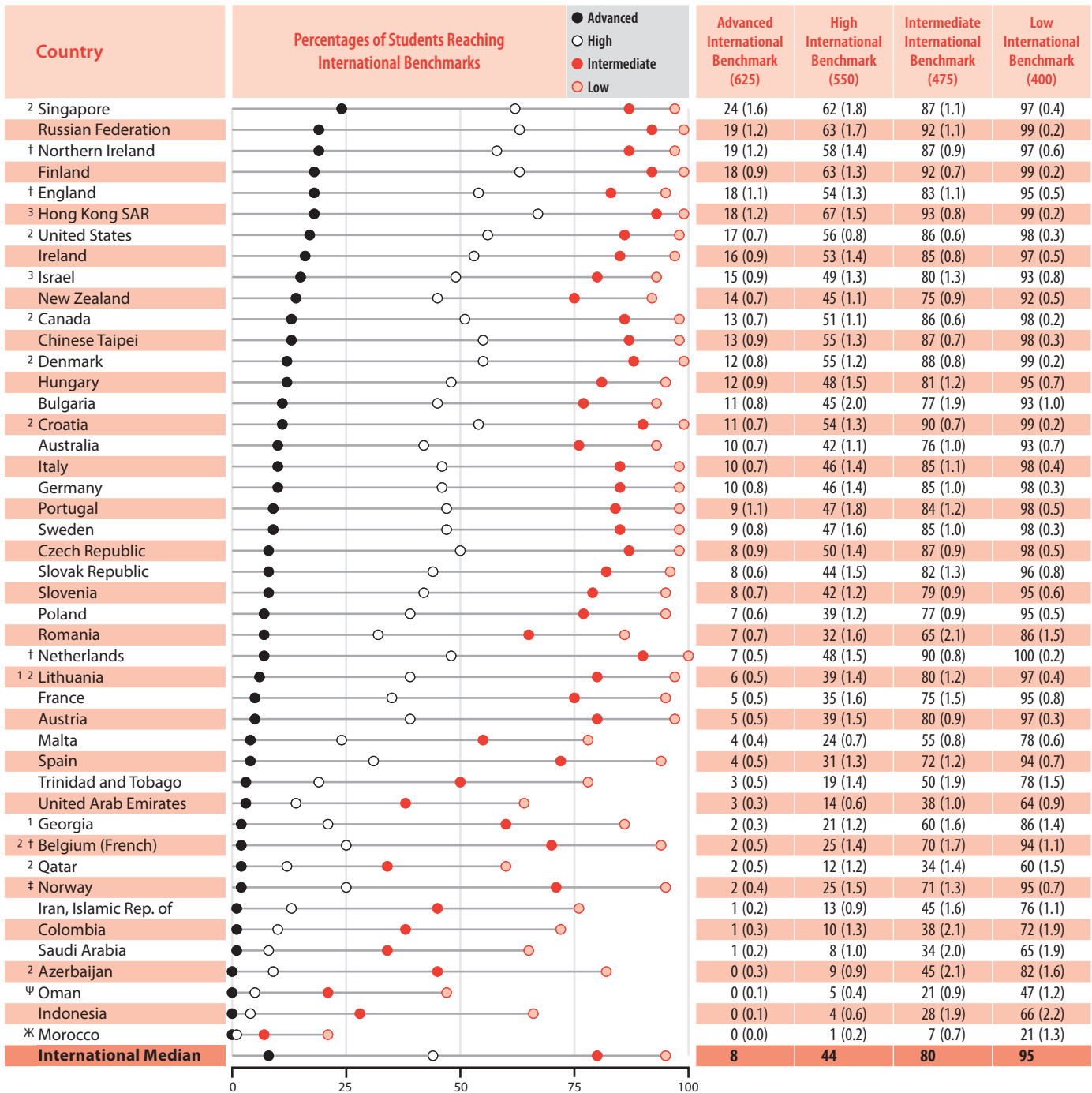
Exhibit 2.2 provides useful information about the distribution of achievement in each country. For example, France, Austria, Spain, Belgium (French), and Norway all had comparatively high percentages (70% or greater) of students reaching the Intermediate International Benchmark, although five percent or fewer reached the Advanced level.

As a point of reference, Exhibit 2.2 provides the median at the fourth grade for each of the benchmarks at the bottom of each of the four right-hand columns. By definition, half of the countries will have a percentage in the column above the median and half will be below the median. The median percentages of students reaching the International Benchmarks were as follows: Advanced—8 percent, High—44 percent, and Intermediate—80 percent. Impressively, many countries are able to educate almost all of their fourth-grade students to a basic reading level; the median percentage for the Low International Benchmark was 95 percent, meaning that half the PIRLS countries (20 after rounding) had more than 95 percent of their students reaching the Low International Benchmark. In five countries (the Russian Federation, Finland, Hong Kong SAR, Denmark, and Croatia), 99 percent of students reached this level, while 100 percent of students did so in the Netherlands.

*Trends in Performance at the PIRLS 2011  
International Benchmarks of Reading Achievement*

Exhibit 2.3 shows the changes in percentages of students reaching the benchmarks for countries and benchmarking participants that also participated in PIRLS 2001 and/or 2006. An up arrow indicates that the percentage of students reaching a benchmark is higher in 2011 than the past cycle, and a down arrow indicates that the percentage is lower in 2011. The patterns in this exhibit generally mirror the trends in average achievement discussed in Chapter 1, and can provide further information about countries' improvement or decline over time.

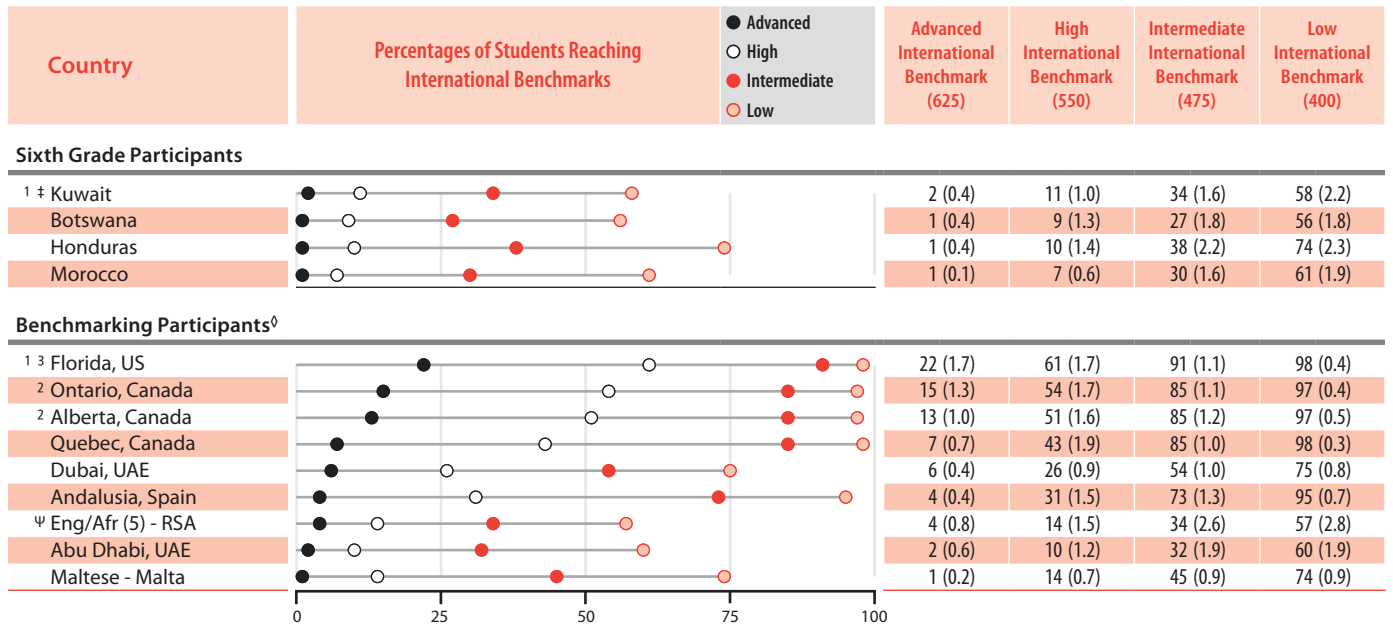
**Exhibit 2.2: Performance at the International Benchmarks of Reading Achievement**



SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

✳ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.  
 ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.  
 See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes †, ‡, and §.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

**Exhibit 2.2: Performance at the International Benchmarks of Reading Achievement (Continued)**



<sup>‡</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

**Exhibit 2.3: Trends in Percentages of Students Reaching the International Benchmarks of Reading Achievement**

Country	Advanced International Benchmark (625) Percent of Students			High International Benchmark (550) Percent of Students			Intermediate International Benchmark (475) Percent of Students			Low International Benchmark (400) Percent of Students		
	2011	2006	2001	2011	2006	2001	2011	2006	2001	2011	2006	2001
	Singapore	24	19 ▲	12 ▲	62	58	45 ▲	87	86	76 ▲	97	97
Russian Federation	19	19	5 ▲	63	61	39 ▲	92	90	80 ▲	99	98	96 ▲
England	18	15 ▲	20	54	48 ▲	54	83	78 ▲	82	95	93 ▲	94
Hong Kong SAR	18	15 ▲	5 ▲	67	62 ▲	39 ▲	93	92	81 ▲	99	99	97 ▲
United States	17	12 ▲	15 ▲	56	47 ▲	50 ▲	86	82 ▲	80 ▲	98	96 ▲	94 ▲
New Zealand	14	13	14	45	45	45	75	76	74	92	92	90
Chinese Taipei	13	7 ▲		55	43 ▲		87	84 ▲		98	97	
Denmark	12	11		55	52		88	85 ▲		99	97 ▲	
Hungary	12	14	10 ▲	48	53 ▼	49	81	86 ▼	85 ▼	95	97 ▼	98 ▼
Bulgaria	11	16 ▼	17 ▼	45	52 ▼	54 ▼	77	82	83 ▼	93	95	95
Italy	10	14 ▼	11	46	52 ▼	48	85	87	83	98	98	97
Germany	10	11	9	46	52 ▼	47	85	87	83	98	97	97
Sweden	9	11	15 ▼	47	53 ▼	59 ▼	85	88	90 ▼	98	98	98 ▼
Czech Republic	8		7	50		45 ▲	87		83 ▲	98		97
Slovak Republic	8	8	5 ▲	44	43	34 ▲	82	80	76 ▲	96	94	94
Slovenia	8	6 ▲	3 ▲	42	37 ▲	25 ▲	79	76 ▲	67 ▲	95	94	91 ▲
Poland	7	7		39	36		77	73 ▲		95	93	
Romania	7	4 ▲	9	32	27 ▲	35	65	61	69	86	84	88
Netherlands	7	6	10 ▼	48	49	54 ▼	90	91	92	100	99	99
Lithuania	6	5	9 ▼	39	43 ▼	48 ▼	80	86 ▼	85 ▼	97	99 ▼	98 ▼
France	5	5	7 ▼	35	35	37	75	76	77	95	96	95
Austria	5	8 ▼		39	45 ▼		80	84 ▼		97	98	
Spain	4	5		31	31		72	72		94	94	
Trinidad and Tobago	3	2		19	13 ▲		50	38 ▲		78	64 ▲	
Georgia	2	1 ▲		21	15 ▲		60	50 ▲		86	82 ▲	
Belgium (French)	2	3		25	23		70	66 ▲		94	92	
Norway	2	2	4 ▼	25	22	28	71	67 ▲	65 ▲	95	92 ▲	88 ▲
Iran, Islamic Rep. of	1	1	0 ▲	13	8 ▲	7 ▲	45	30 ▲	28 ▲	76	60 ▲	56 ▲
Colombia	1		0	10		5 ▲	38		27 ▲	72		61 ▲
Indonesia	0	0		4	2 ▲		28	19 ▲		66	54 ▲	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Benchmarking Participants<sup>♠</sup>**

Ontario, Canada	15	16	15	54	54	50	85	87	84	97	98	96
Alberta, Canada	13	17 ▼		51	57 ▼		85	89 ▼		97	99 ▼	
Quebec, Canada	7	6	8	43	41	43	85	83	84	98	97	98
♠ Eng/Afr (5) - RSA	4	5		14	17		34	36		57	53	

<sup>♠</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ 2011 percent significantly higher
- ▼ 2011 percent significantly lower

♠ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%. Such annotations in exhibits with trend data began in 2011, so data from assessments prior to 2011 are not annotated for reservations. An empty cell indicates a country did not participate in that year's assessment.



In general, there were more improvements across the International Benchmarks in 2011 than there were declines. Six countries showed improvement at all four benchmarks over the last decade, including Singapore, the Russian Federation, Hong Kong SAR, the United States, Slovenia, and Iran. In other countries, improvement has happened primarily at the lower or the higher end of the distribution. Denmark and Norway, for example, increased the percentage of students reaching the Low and Intermediate International Benchmarks, but there has been no change in the High or Advanced levels for Denmark, and the percentage of students at the Advanced International Benchmark has decreased slightly in Norway. Romania, on the other hand, has made progress at the Advanced and High International Benchmarks, but there were no changes at lower levels. There were also three participants with decreases at each of the benchmarks, including Sweden, Lithuania, and the Canadian province of Alberta.

## What Can Students Do at the PIRLS International Benchmarks?

The items presented in this report were selected from the PIRLS 2011 released assessment blocks. The passages and detailed constructed response scoring guides that accompany these items are provided in Appendix C and the back pocket of this report. Reflecting the performance distribution on the assessment, there are more example items at the High Benchmark than the other benchmarks.

### *PIRLS 2011 Low International Benchmark—Example Item*

Exhibit 2.4 shows an example of a literary item that anchored at the Low International Benchmark. The exhibit shows the achievement results for each PIRLS 2011 participant, with up and down arrows indicating a significantly higher or lower percent of students than the international average. The reading purpose, comprehension process, and scale anchoring description are provided above the item. For multiple-choice items, the correct response is indicated. In this “Fly Eagle Fly” item, students demonstrated that they could retrieve an explicitly stated detail from the beginning of a text. A high proportion (89%) of students internationally accomplished this task.

Country	Percent Correct
Russian Federation	99 (0.4) ▲
<sup>2</sup> Croatia	98 (0.7) ▲
<sup>3</sup> Hong Kong SAR	97 (0.8) ▲
Italy	96 (0.7) ▲
Finland	96 (0.7) ▲
Austria	96 (0.7) ▲
† Northern Ireland	96 (1.0) ▲
Chinese Taipei	95 (0.8) ▲
Czech Republic	95 (1.2) ▲
<sup>3</sup> Israel	95 (0.8) ▲
Germany	95 (0.9) ▲
<sup>2</sup> Denmark	94 (0.7) ▲
† Netherlands	94 (0.8) ▲
Slovenia	94 (1.0) ▲
Bulgaria	94 (0.9) ▲
Sweden	94 (1.3) ▲
<sup>2</sup> Canada	94 (0.6) ▲
<sup>1 2</sup> Lithuania	93 (1.1) ▲
Portugal	93 (1.1) ▲
Ireland	93 (0.9) ▲
France	93 (0.8) ▲
<sup>1</sup> Georgia	93 (1.1) ▲
<sup>2</sup> Singapore	92 (0.9) ▲
<sup>2</sup> Azerbaijan	92 (1.1) ▲
Hungary	91 (1.0) ▲
Australia	91 (1.0) ▲
† England	91 (1.1) ▲
New Zealand	91 (1.0)
Slovak Republic	90 (1.2)
‡ Norway	90 (1.5)
Poland	90 (1.1)
<sup>2</sup> United States	90 (0.8)
<b>International Avg.</b>	<b>89 (0.2)</b>
Romania	88 (1.5)
<sup>2</sup> † Belgium (French)	87 (1.5)
Spain	86 (1.1) ▼
Iran, Islamic Rep. of	85 (1.4) ▼
Malta	84 (1.3) ▼
Indonesia	82 (1.6) ▼
Colombia	81 (2.0) ▼
Trinidad and Tobago	81 (1.7) ▼
United Arab Emirates	74 (0.9) ▼
Saudi Arabia	73 (1.7) ▼
Oman	72 (1.3) ▼
<sup>2</sup> Qatar	71 (1.7) ▼
Morocco	52 (1.8) ▼

**Purpose: Literary Experience**

**Process: Focus on and Retrieve Explicitly Stated Information and Ideas**

**Description: Locate and retrieve explicitly stated detail from the beginning of the text**

1. What did the farmer set out to look for at the beginning of the story?

a calf

herders

rocky cliffs

an eagle chick

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Country	Percent Correct
<b>Sixth Grade Participants</b>	
Honduras	81 (2.2) ▼
Morocco	75 (2.5) ▼
<sup>1</sup> ‡ Kuwait	64 (1.9) ▼
Botswana	57 (2.2) ▼

Country	Percent Correct
<b>Benchmarking Participants<sup>◇</sup></b>	
<sup>2</sup> Ontario, Canada	94 (1.1) ▲
Quebec, Canada	92 (1.0) ▲
<sup>2</sup> Alberta, Canada	92 (1.4) ▲
<sup>1 3</sup> Florida, US	91 (1.4)
Andalusia, Spain	87 (1.6)
Maltese - Malta	84 (1.3) ▼
Dubai, UAE	81 (1.0) ▼
Abu Dhabi, UAE	71 (2.0) ▼
Eng/Afr (5) - RSA	65 (3.0) ▼

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.

(.) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

### *PIRLS 2011 Intermediate International Benchmark—Example Items*

As shown in Exhibit 2.5, students responding correctly to “Enemy Pie” Item 2 were able to make an inference about a character’s reaction from the beginning of the story. In PIRLS 2011, constructed response items were worth 1, 2, or 3 points. Each constructed response item is shown with an illustrative student response and the amount of credit awarded the response is shown across the bottom of the exhibit, usually full credit. Singapore had the best achievement with 87 percent correct; across the PIRLS fourth-grade countries, 70 percent of students responded correctly, on average.

The “Day Hiking” item in Exhibit 2.6 asked students to identify the main message of the leaflet. This item was relatively easy for students, with 76 percent providing the correct answer, on average, internationally. More than 90 percent of the students in Chinese Taipei, the Russian Federation, the Netherlands, and Hong Kong SAR recognized the main message of the leaflet.

Country	Percent Full Credit
<sup>2</sup> Singapore	87 (1.1) ⬆
Ireland	86 (1.4) ⬆
<sup>2</sup> Denmark	84 (1.2) ⬆
Sweden	84 (1.4) ⬆
<sup>2</sup> Canada	83 (1.0) ⬆
<sup>2</sup> United States	83 (0.9) ⬆
Chinese Taipei	82 (1.5) ⬆
† Northern Ireland	81 (1.8) ⬆
<sup>3</sup> Hong Kong SAR	81 (1.4) ⬆
Portugal	80 (1.9) ⬆
New Zealand	79 (1.4) ⬆
<sup>1</sup> Georgia	79 (1.6) ⬆
Czech Republic	79 (2.2) ⬆
<sup>2</sup> Croatia	78 (1.5) ⬆
† Netherlands	78 (1.5) ⬆
Australia	77 (1.9) ⬆
Russian Federation	77 (1.7) ⬆
Poland	76 (1.6) ⬆
<sup>3</sup> Israel	76 (1.5) ⬆
Germany	75 (1.6) ⬆
Finland	75 (1.9) ⬆
Italy	74 (1.7) ⬆
Slovak Republic	74 (1.6) ⬆
Slovenia	74 (1.9) ⬆
† England	73 (1.8) ⬆
France	72 (1.6) ⬆
<sup>2</sup> Azerbaijan	71 (2.0) ⬆
Hungary	71 (1.9) ⬆
<b>International Avg.</b>	<b>70 (0.3)</b>
Austria	69 (1.7) ⬆
<sup>2</sup> † Belgium (French)	68 (1.9) ⬆
Spain	68 (1.6) ⬆
<sup>1</sup> <sup>2</sup> Lithuania	65 (2.0) ⬇
Bulgaria	64 (2.3) ⬇
Romania	63 (2.2) ⬇
‡ Norway	63 (2.4) ⬇
Trinidad and Tobago	62 (2.4) ⬇
Malta	59 (1.8) ⬇
Colombia	59 (2.4) ⬇
Saudi Arabia	56 (2.2) ⬇
<sup>2</sup> Qatar	52 (1.9) ⬇
Iran, Islamic Rep. of	52 (1.9) ⬇
United Arab Emirates	51 (1.3) ⬇
Indonesia	45 (2.0) ⬇
Oman	43 (1.5) ⬇
Morocco	42 (1.5) ⬇

**Purpose: Literary Experience**

**Process: Make Straightforward Inferences**

**Description: Make a straightforward inference about a character's reaction to a situation**

2. At the beginning of the story, why did Tom think Jeremy was his enemy?

① He thought Jeremy was his enemy because Jeremy had a party and Tom wasn't invited, but his best friend was

The answer shown illustrates the type of student response that was given 1 of 1 points.

Country	Percent Full Credit
<b>Sixth Grade Participants</b>	
Morocco	74 (1.8)
Honduras	52 (3.0) ⬇
<sup>1</sup> ‡ Kuwait	51 (2.3) ⬇
Botswana	29 (2.1) ⬇

Country	Percent Full Credit
<b>Benchmarking Participants<sup>⊖</sup></b>	
<sup>1</sup> <sup>3</sup> Florida, US	87 (1.5) ⬆
<sup>2</sup> Ontario, Canada	83 (1.7) ⬆
<sup>2</sup> Alberta, Canada	82 (1.7) ⬆
Quebec, Canada	81 (1.9) ⬆
Andalusia, Spain	70 (2.0)
Dubai, UAE	60 (1.5) ⬇
Abu Dhabi, UAE	47 (2.4) ⬇
Eng/Afr (5) - RSA	43 (2.7) ⬇
Maltese - Malta	41 (1.7) ⬇

<sup>⊖</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ⬆ Percent significantly higher than international average
- ⬇ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡. ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Country	Percent Correct
Chinese Taipei	92 (1.1) ⬆
Russian Federation	91 (0.9) ⬆
† Netherlands	91 (1.0) ⬆
<sup>3</sup> Hong Kong SAR	91 (1.0) ⬆
<sup>2</sup> Croatia	90 (1.2) ⬆
<sup>2</sup> Denmark	90 (1.2) ⬆
Finland	89 (1.2) ⬆
<sup>2</sup> United States	87 (0.7) ⬆
Germany	87 (1.4) ⬆
<sup>2</sup> Singapore	86 (1.1) ⬆
Portugal	85 (1.6) ⬆
† England	84 (1.7) ⬆
† Northern Ireland	84 (1.7) ⬆
Australia	84 (1.6) ⬆
<sup>1 2</sup> Lithuania	83 (1.4) ⬆
Ireland	83 (1.5) ⬆
Sweden	83 (1.9) ⬆
Iran, Islamic Rep. of	83 (1.4) ⬆
<sup>2</sup> Canada	82 (0.8) ⬆
Bulgaria	81 (1.6) ⬆
Austria	80 (1.4) ⬆
New Zealand	80 (1.6) ⬆
<sup>3</sup> Israel	80 (1.5) ⬆
<b>International Avg.</b>	<b>76 (0.3)</b>
Slovak Republic	76 (1.9)
Poland	76 (1.5)
Spain	75 (1.8)
Italy	75 (1.8)
<sup>2</sup> † Belgium (French)	75 (2.1)
France	73 (1.9)
<sup>1</sup> Georgia	73 (2.3)
<sup>2</sup> Azerbaijan	72 (2.5)
Malta	71 (1.8) ⬇
Czech Republic	71 (2.2) ⬇
‡ Norway	71 (2.3) ⬇
Romania	69 (2.0) ⬇
Slovenia	69 (2.2) ⬇
Hungary	68 (1.9) ⬇
Trinidad and Tobago	64 (2.1) ⬇
Indonesia	60 (2.1) ⬇
United Arab Emirates	58 (1.3) ⬇
<sup>2</sup> Qatar	58 (3.2) ⬇
Colombia	57 (2.0) ⬇
Oman	49 (1.5) ⬇
Saudi Arabia	48 (2.4) ⬇
Morocco	47 (1.9) ⬇

**Purpose: Acquire and Use Information**

**Process: Make Straightforward Inferences**

**Description: Recognize the main message of a brochure**

1. What is the **main** message the leaflet gave you about hiking?

A It is expensive and dangerous.

B It is the best way to see animals.

C It is healthy and fun.

D It is only for experts.

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Country	Percent Correct
<b>Sixth Grade Participants</b>	
Morocco	63 (1.5) ⬇
<sup>1</sup> ‡ Kuwait	59 (2.7) ⬇
Honduras	55 (2.8) ⬇
Botswana	52 (2.0) ⬇

Country	Percent Correct
<b>Benchmarking Participants<sup>⊠</sup></b>	
<sup>1 3</sup> Florida, US	89 (1.4) ⬆
<sup>2</sup> Alberta, Canada	83 (1.9) ⬆
<sup>2</sup> Ontario, Canada	82 (1.4) ⬆
Quebec, Canada	79 (1.8)
Maltese - Malta	78 (1.4)
Andalusia, Spain	75 (1.5)
Dubai, UAE	67 (1.6) ⬇
Abu Dhabi, UAE	56 (2.3) ⬇
Eng/Afr (5) - RSA	54 (3.2) ⬇

<sup>⊠</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ⬆ Percent significantly higher than international average
- ⬇ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

### *PIRLS 2011 High International Benchmark—Example Items*

Exhibit 2.7 shows an item from the literary passage “Enemy Pie.” This item illustrates that students at the High Benchmark were able to integrate evidence from across a contemporary text to show understanding of a character’s intention. In three countries (the Russian Federation, Hong Kong SAR, and Finland), more than 70 percent of students were able to accomplish this task, and on average, 50 percent of students answered successfully.

Exhibit 2.8 also presents an item from a literary text (“Fly Eagle Fly”), which asked students to evaluate the significance of the rising sun to the story as a whole. Fifty-seven percent of students, on average internationally, selected the correct response to this multiple-choice item. More than three-quarters of students in the Russian Federation, Portugal, and the state of Florida answered correctly.

Exhibit 2.9 presents the first informational example item for the High International Benchmark. This item asked students for two things that could be learned from the map key in the “Day Hiking” brochure (provided in the back pocket of this report). At this level, students earned one point on the item by providing only one way that the information in the map key could be used. Fifty-nine percent of students received at least partial credit for this item, on average, internationally.

Exhibit 2.10 shows a multiple-choice item from “The Giant Tooth Mystery” that required fourth grade students to make a straightforward inference. In contrast to the inference required in the item anchoring at the Intermediate International Benchmark shown in Exhibit 2.6, students answering this item correctly demonstrated the ability to make an inference from a series of statements in a continuous text containing complex ideas. Fifty-eight percent of students answered correctly, on average across countries, and more than 75 percent in Hong Kong SAR and Chinese Taipei.

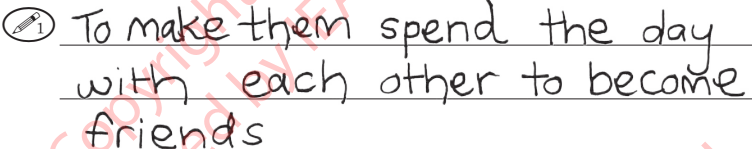
Country	Percent Full Credit
Russian Federation	75 (1.8) ▲
<sup>3</sup> Hong Kong SAR	73 (1.6) ▲
Finland	71 (1.9) ▲
Chinese Taipei	69 (1.7) ▲
Germany	64 (1.8) ▲
<sup>2</sup> United States	63 (1.2) ▲
Sweden	63 (1.9) ▲
Italy	62 (2.0) ▲
† Northern Ireland	62 (2.4) ▲
Hungary	62 (1.8) ▲
Poland	62 (1.9) ▲
<sup>2</sup> Croatia	61 (1.7) ▲
<sup>2</sup> Canada	61 (1.4) ▲
Ireland	61 (2.1) ▲
<sup>2</sup> Denmark	60 (1.8) ▲
† Netherlands	59 (1.6) ▲
† England	59 (1.8) ▲
Portugal	58 (2.1) ▲
<sup>3</sup> Israel	58 (1.9) ▲
Bulgaria	57 (2.3) ▲
Slovak Republic	57 (2.0) ▲
<sup>2</sup> Singapore	57 (1.6) ▲
Slovenia	56 (2.0) ▲
New Zealand	56 (1.8) ▲
Czech Republic	56 (2.5) ▲
Spain	55 (2.0) ▲
Australia	53 (2.1)
Romania	52 (2.5)
<sup>1</sup> Georgia	50 (2.0)
<b>International Avg.</b>	<b>50 (0.3)</b>
Austria	49 (2.0)
<sup>1 2</sup> Lithuania	47 (2.2)
France	46 (2.4)
<sup>2 †</sup> Belgium (French)	46 (2.1)
Iran, Islamic Rep. of	45 (1.6) ▼
‡ Norway	43 (2.0) ▼
<sup>2</sup> Azerbaijan	36 (2.4) ▼
Trinidad and Tobago	31 (2.1) ▼
Malta	29 (1.6) ▼
<sup>2</sup> Qatar	25 (1.7) ▼
Colombia	25 (2.2) ▼
United Arab Emirates	22 (1.0) ▼
Saudi Arabia	15 (2.2) ▼
Indonesia	12 (1.3) ▼
Oman	10 (0.8) ▼
Morocco	4 (0.6) ▼

**Purpose: Literary Experience**

**Process: Interpret and Integrate Ideas and Information**

**Description: Integrate evidence to show understanding of a character's intention**

14. Use what you have read to explain why Tom's dad really made Enemy Pie.



The answer shown illustrates the type of student response that was given 1 of 1 points.

Country	Percent Full Credit
<b>Sixth Grade Participants</b>	
Honduras	27 (2.3) ▼
<sup>1 †</sup> Kuwait	20 (1.7) ▼
Morocco	19 (1.4) ▼
Botswana	16 (1.7) ▼

Country	Percent Full Credit
<b>Benchmarking Participants<sup>◇</sup></b>	
<sup>1 3</sup> Florida, US	67 (2.3) ▲
<sup>2</sup> Alberta, Canada	66 (2.1) ▲
<sup>2</sup> Ontario, Canada	62 (2.4) ▲
Andalusia, Spain	52 (2.0)
Quebec, Canada	51 (2.0)
Dubai, UAE	33 (2.1) ▼
Maltese - Malta	28 (1.7) ▼
Eng/Afr (5) - RSA	28 (2.6) ▼
Abu Dhabi, UAE	18 (1.9) ▼

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011



Country	Percent Correct
Russian Federation	79 (2.3) ▲
Portugal	77 (2.0) ▲
Finland	74 (1.8) ▲
<sup>2</sup> United States	73 (1.1) ▲
Ireland	72 (2.1) ▲
<sup>†</sup> Northern Ireland	72 (1.8) ▲
Sweden	71 (2.1) ▲
<sup>3</sup> Hong Kong SAR	68 (2.0) ▲
Italy	68 (1.8) ▲
<sup>1 2</sup> Lithuania	67 (2.1) ▲
Hungary	66 (2.0) ▲
<sup>†</sup> England	66 (2.2) ▲
Slovak Republic	66 (1.8) ▲
<sup>3</sup> Israel	65 (2.0) ▲
Bulgaria	65 (2.4) ▲
Romania	65 (2.2) ▲
Czech Republic	65 (2.1) ▲
<sup>2</sup> Denmark	65 (1.7) ▲
<sup>2</sup> Singapore	64 (1.7) ▲
Poland	63 (1.8) ▲
<sup>†</sup> Netherlands	63 (1.8) ▲
<sup>2</sup> Canada	63 (1.2) ▲
<sup>2</sup> Azerbaijan	62 (2.2) ▲
Australia	62 (1.7) ▲
Slovenia	62 (2.1) ▲
New Zealand	60 (1.8)
<sup>2</sup> Croatia	58 (1.8)
<sup>1</sup> Georgia	58 (2.3)
Spain	57 (1.7)
<b>International Avg.</b>	<b>57 (0.3)</b>
Germany	55 (1.8)
France	54 (1.7)
Austria	53 (1.9) ▼
Malta	53 (2.2)
<sup>2 †</sup> Belgium (French)	51 (2.7) ▼
Trinidad and Tobago	51 (2.1) ▼
United Arab Emirates	44 (1.4) ▼
Chinese Taipei	44 (1.9) ▼
Colombia	37 (2.4) ▼
Indonesia	34 (2.6) ▼
<sup>2</sup> Qatar	34 (2.0) ▼
<sup>‡</sup> Norway	33 (3.0) ▼
Iran, Islamic Rep. of	29 (1.5) ▼
Saudi Arabia	25 (1.7) ▼
Morocco	23 (1.5) ▼
Oman	23 (1.1) ▼

**Purpose: Literary Experience**

**Process: Examine and Evaluate Content, Language, and Textual Elements**

**Description: Evaluate the significance of an event**

11. Why was the rising sun important to the story?

It awakened the eagle’s instinct to fly.

(B) It reigned in the heavens.

(C) It warmed the eagle’s feathers.

(D) It provided light on the mountain paths.

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Country	Percent Correct
<b>Sixth Grade Participants</b>	
Honduras	43 (2.4) ▼
<sup>1 ‡</sup> Kuwait	37 (1.6) ▼
Botswana	37 (1.8) ▼
Morocco	29 (2.1) ▼

Country	Percent Correct
<b>Benchmarking Participants<sup>◊</sup></b>	
<sup>1 3</sup> Florida, US	78 (2.2) ▲
<sup>2</sup> Alberta, Canada	70 (1.9) ▲
<sup>2</sup> Ontario, Canada	65 (2.4) ▲
Andalusia, Spain	57 (2.1)
Quebec, Canada	56 (1.9)
Dubai, UAE	51 (1.6) ▼
Maltese - Malta	48 (1.9) ▼
Abu Dhabi, UAE	43 (2.5) ▼
Eng/Afr (5) - RSA	41 (2.4) ▼

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Percent At Least 1 Point
<sup>2</sup> Denmark	86 (1.1) ●
<sup>2</sup> United States	83 (0.9) ●
<sup>†</sup> England	83 (1.6) ●
<sup>†</sup> Northern Ireland	82 (1.6) ●
<sup>†</sup> Netherlands	81 (1.7) ●
Portugal	79 (1.8) ●
<sup>3</sup> Hong Kong SAR	78 (2.0) ●
<sup>2</sup> Canada	75 (1.4) ●
Chinese Taipei	74 (1.5) ●
Ireland	73 (2.0) ●
New Zealand	73 (1.4) ●
<sup>‡</sup> Norway	72 (2.2) ●
Russian Federation	71 (1.9) ●
Czech Republic	71 (2.0) ●
<sup>2</sup> Singapore	70 (1.7) ●
<sup>3</sup> Israel	70 (1.9) ●
Germany	69 (1.7) ●
Sweden	68 (2.1) ●
Finland	66 (1.9) ●
Slovak Republic	66 (1.7) ●
<sup>1 2</sup> Lithuania	64 (2.2) ●
Poland	64 (2.1) ●
Italy	63 (2.0) ●
Australia	62 (2.0) ●
Slovenia	62 (2.2) ●
Hungary	62 (1.6) ●
France	61 (1.9) ●
<b>International Avg.</b>	<b>59 (0.3)</b>
Spain	59 (1.6) ●
Malta	58 (2.1) ●
Austria	54 (1.8) ▼
Bulgaria	52 (2.5) ▼
<sup>2 †</sup> Belgium (French)	51 (2.4) ▼
Trinidad and Tobago	49 (2.4) ▼
<sup>2</sup> Croatia	49 (1.6) ▼
Romania	47 (2.6) ▼
<sup>1</sup> Georgia	43 (2.2) ▼
United Arab Emirates	43 (1.3) ▼
Saudi Arabia	43 (2.6) ▼
<sup>2</sup> Qatar	41 (1.8) ▼
Indonesia	33 (2.1) ▼
Oman	32 (1.6) ▼
<sup>2</sup> Azerbaijan	30 (2.3) ▼
Colombia	27 (2.2) ▼
Iran, Islamic Rep. of	17 (1.3) ▼
Morocco	14 (1.2) ▼

**Purpose: Acquire and Use Information**

**Process: Examine and Evaluate Content, Language, and Textual Elements**

**Description: Examine a specified table of information and show understanding of 1 (of 2) use of the information**

11. What are **two** things you can learn by studying the map key?

① 1. frog creek is 3 hours long

② 2.

The answer shown illustrates the type of student response that was given 1 of 2 points.

Country	Percent At Least 1 Point
<b>Sixth Grade Participants</b>	
Botswana	49 (1.9) ▼
<sup>1 †</sup> Kuwait	43 (2.7) ▼
Honduras	39 (2.5) ▼
Morocco	34 (2.0) ▼

Country	Percent At Least 1 Point
<b>Benchmarking Participants<sup>◇</sup></b>	
<sup>1 3</sup> Florida, US	87 (1.6) ●
<sup>2</sup> Ontario, Canada	81 (1.7) ●
<sup>2</sup> Alberta, Canada	79 (2.0) ●
Andalusia, Spain	62 (1.9) ●
Quebec, Canada	59 (2.5) ●
Dubai, UAE	48 (2.1) ▼
Abu Dhabi, UAE	42 (2.1) ▼
Maltese - Malta	23 (1.5) ▼
Eng/Afr (5) - RSA	--

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- Percent significantly higher than international average
- ▼ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (–) indicates comparable data not available.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Percent Correct
<sup>3</sup> Hong Kong SAR	80 (1.7) ▲
Chinese Taipei	79 (1.6) ▲
<sup>2</sup> Singapore	75 (1.5) ▲
Italy	74 (1.4) ▲
Finland	73 (1.8) ▲
Russian Federation	72 (1.4) ▲
Sweden	69 (1.9) ▲
Portugal	67 (2.0) ▲
Czech Republic	66 (2.2) ▲
Ireland	66 (2.3) ▲
Slovenia	65 (2.1) ▲
† England	64 (2.1) ▲
† Northern Ireland	64 (2.3) ▲
<sup>1 2</sup> Lithuania	64 (1.9) ▲
<sup>3</sup> Israel	63 (1.9) ▲
Slovak Republic	63 (1.8) ▲
France	63 (1.6) ▲
<sup>2</sup> Croatia	63 (1.7) ▲
Hungary	62 (1.5) ▲
Spain	61 (2.0) ▲
Germany	61 (1.9) ▲
<sup>2</sup> United States	61 (1.2) ▲
Austria	61 (2.0) ▲
<sup>2</sup> † Belgium (French)	60 (2.1) ▲
<sup>2</sup> Canada	60 (1.4) ▲
Bulgaria	58 (1.9) ▲
<sup>2</sup> Denmark	58 (2.0) ▲
<b>International Avg.</b>	<b>58 (0.3)</b>
Romania	56 (2.3) ▲
Australia	55 (1.9) ▲
† Netherlands	55 (2.0) ▲
<sup>2</sup> Azerbaijan	54 (2.7) ▲
‡ Norway	52 (2.5) ▼
New Zealand	52 (1.6) ▼
Malta	52 (1.8) ▼
Poland	51 (1.8) ▼
<sup>1</sup> Georgia	51 (2.1) ▼
Trinidad and Tobago	47 (1.8) ▼
Iran, Islamic Rep. of	46 (1.8) ▼
United Arab Emirates	46 (1.2) ▼
<sup>2</sup> Qatar	43 (2.4) ▼
Saudi Arabia	42 (2.4) ▼
Colombia	36 (2.4) ▼
Indonesia	35 (2.1) ▼
Oman	31 (1.6) ▼
Morocco	26 (1.5) ▼

**Purpose: Acquire and Use Information**

**Process: Make Straightforward Inferences**

**Description: Infer a scientist’s purpose from a series of statements**

9. Why did Gideon Mantell take the tooth to a museum?

(A) to ask if the fossil belonged to the museum

(B) to prove that he was a fossil expert

(C) to hear what scientists thought of his idea

(D) to compare the tooth with others in the museum

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Country	Percent Correct
<b>Sixth Grade Participants</b>	
Botswana	51 (1.8) ▼
<sup>1 ‡</sup> Kuwait	43 (2.5) ▼
Honduras	43 (2.6) ▼
Morocco	38 (1.6) ▼

Country	Percent Correct
<b>Benchmarking Participants<sup>◊</sup></b>	
<sup>1 3</sup> Florida, US	64 (2.5) ▲
Andalusia, Spain	64 (2.0) ▲
Quebec, Canada	63 (2.1) ▲
<sup>2</sup> Ontario, Canada	59 (2.4) ▲
<sup>2</sup> Alberta, Canada	54 (2.1) ▲
Dubai, UAE	54 (2.0) ▼
Abu Dhabi, UAE	43 (2.0) ▼
Eng/Afr (5) - RSA	41 (2.3) ▼
Maltese - Malta	41 (1.9) ▼

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

### *PIRLS 2011 Advanced International Benchmark—Example Items*

Exhibits 2.11 and 2.12 present example items answered correctly by students reaching the Advanced International Benchmark.

Exhibit 2.11 shows an item from the literary text “Fly Eagle Fly.” Students were asked to interpret a character’s actions to provide a trait and give an example from the text to support this interpretation. Providing both pieces of this response was quite difficult for students internationally, with 29 percent, on average, across the fourth grade countries receiving full credit. More than half of the students in Hong Kong SAR (59%) and Chinese Taipei (55%) provided a complete response.

Exhibit 2.12 shows an item from the informational text “The Giant Tooth Mystery.” This item required students to complete a table contrasting three scientific beliefs from the past with those of scientists today. This item also was quite challenging for students, with 32 percent of students receiving full credit across the fourth grade countries. More than half of the students in the East Asian countries of Hong Kong SAR (62%), Singapore (57%), and Chinese Taipei (53%) earned all three points.

Country	Percent Full Credit
<sup>3</sup> Hong Kong SAR	59 (2.2) ⬆
Chinese Taipei	55 (2.2) ⬆
<sup>3</sup> Israel	50 (2.2) ⬆
Russian Federation	50 (2.7) ⬆
<sup>2</sup> Singapore	48 (1.9) ⬆
Ireland	46 (2.1) ⬆
<sup>2</sup> Croatia	45 (1.8) ⬆
Italy	45 (2.4) ⬆
† England	44 (1.9) ⬆
Austria	44 (2.1) ⬆
† Northern Ireland	43 (2.3) ⬆
Czech Republic	42 (2.2) ⬆
<sup>2</sup> United States	42 (1.2) ⬆
Slovak Republic	41 (1.9) ⬆
Sweden	40 (2.1) ⬆
Bulgaria	39 (2.2) ⬆
Portugal	38 (2.1) ⬆
<sup>2</sup> Canada	38 (1.4) ⬆
<sup>1 2</sup> Lithuania	38 (1.9) ⬆
Finland	38 (2.0) ⬆
<sup>2</sup> Denmark	37 (1.6) ⬆
Hungary	35 (1.9) ⬆
<b>International Avg.</b>	<b>29 (0.3)</b>
Poland	28 (1.8) ⬇
Australia	25 (1.8) ⬇
Romania	25 (2.0) ⬇
<sup>1</sup> Georgia	24 (1.7) ⬇
New Zealand	23 (1.6) ⬇
Spain	21 (1.5) ⬇
† Netherlands	20 (1.5) ⬇
Colombia	19 (1.7) ⬇
<sup>2</sup> † Belgium (French)	19 (1.6) ⬇
Malta	18 (1.1) ⬇
Iran, Islamic Rep. of	18 (1.2) ⬇
Trinidad and Tobago	18 (1.4) ⬇
France	17 (1.0) ⬇
‡ Norway	15 (1.5) ⬇
Germany	14 (1.2) ⬇
United Arab Emirates	14 (0.8) ⬇
Slovenia	13 (1.5) ⬇
<sup>2</sup> Qatar	12 (1.5) ⬇
Oman	7 (0.9) ⬇
<sup>2</sup> Azerbaijan	7 (1.5) ⬇
Saudi Arabia	4 (0.8) ⬇
Indonesia	3 (0.6) ⬇
Morocco	1 (0.3) ⬇

**Purpose: Literary Experience**

**Process: Interpret and Integrate Ideas and Information**

**Description: Interpret a character's actions to provide a description of a character trait with a supporting example**

12. You learn what the farmer's friend was like from the things he did.

Describe what the friend was like and give an example of what he did that shows this.

*the friend was stubborn because he came back and tested the eagle again*

The answer shown illustrates the type of student response that was given 2 of 2 points.

Country	Percent Full Credit
<b>Sixth Grade Participants</b>	
Honduras	13 (1.7) ⬇
<sup>1</sup> ‡ Kuwait	11 (1.4) ⬇
Morocco	8 (1.0) ⬇
Botswana	7 (1.2) ⬇

Country	Percent Full Credit
<b>Benchmarking Participants<sup>⊠</sup></b>	
<sup>2</sup> Ontario, Canada	47 (2.3) ⬆
<sup>1 3</sup> Florida, US	42 (1.7) ⬆
<sup>2</sup> Alberta, Canada	34 (2.1) ⬆
Quebec, Canada	31 (1.8)
Andalusia, Spain	30 (2.1)
Dubai, UAE	20 (1.4) ⬇
Maltese - Malta	17 (1.2) ⬇
Abu Dhabi, UAE	12 (1.5) ⬇
Eng/Afr (5) - RSA	11 (1.5) ⬇

<sup>⊠</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ⬆ Percent significantly higher than international average
- ⬇ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Percent Full Credit
<sup>3</sup> Hong Kong SAR	62 (2.3) ▲
<sup>2</sup> Singapore	57 (1.7) ▲
Chinese Taipei	53 (1.8) ▲
Finland	48 (1.9) ▲
Russian Federation	47 (2.1) ▲
† England	46 (2.2) ▲
Sweden	44 (2.4) ▲
† Northern Ireland	44 (2.6) ▲
<sup>2</sup> Denmark	44 (1.8) ▲
<sup>2</sup> United States	44 (1.3) ▲
Ireland	44 (2.2) ▲
<sup>2</sup> Croatia	42 (1.7) ▲
Portugal	42 (2.2) ▲
<sup>2</sup> Canada	42 (1.4) ▲
† Netherlands	42 (2.1) ▲
Hungary	41 (1.8) ▲
New Zealand	40 (1.6) ▲
Italy	40 (1.9) ▲
Australia	40 (2.0) ▲
Czech Republic	39 (2.1) ▲
Germany	38 (1.7) ▲
Bulgaria	37 (2.2) ▲
<sup>3</sup> Israel	36 (2.1)
Slovenia	33 (1.8)
<sup>1 2</sup> Lithuania	32 (1.8)
<b>International Avg.</b>	<b>32 (0.3)</b>
Austria	31 (2.0)
France	31 (1.8)
Slovak Republic	30 (1.7)
<sup>2 †</sup> Belgium (French)	29 (2.8)
Romania	27 (2.1) ▼
Poland	26 (1.8) ▼
Spain	26 (1.6) ▼
‡ Norway	23 (2.0) ▼
Malta	22 (1.4) ▼
<sup>1</sup> Georgia	17 (1.6) ▼
<sup>2</sup> Qatar	15 (1.4) ▼
United Arab Emirates	14 (0.7) ▼
Trinidad and Tobago	13 (1.5) ▼
Saudi Arabia	10 (1.6) ▼
Oman	8 (0.9) ▼
Indonesia	7 (1.1) ▼
Iran, Islamic Rep. of	7 (0.8) ▼
<sup>2</sup> Azerbaijan	6 (1.4) ▼
Colombia	6 (1.0) ▼
Morocco	2 (0.5) ▼

Purpose: Acquire and Use Information

Process: Interpret and Integrate Ideas and Information

Description: Interpret and integrate textual and visual information to make 3 contrasts

13. Later discoveries proved that Gideon Mantell was wrong about what the *Iguanodon* looked like. Fill in the blanks to complete the table.

	What Gideon Mantell thought the <i>Iguanodon</i> looked like	What scientists today think the <i>Iguanodon</i> looked like
①	The <i>Iguanodon</i> walked on four legs.	The <i>Iguanodon</i> walks on 2 legs
①	The <i>Iguanodon</i> had a spike on his nose	The <i>Iguanodon</i> had a spike on its thumb.
①	The <i>Iguanodon</i> was 100 feet long.	The <i>Iguanodon</i> was 30 feet long

The answer shown illustrates the type of student response that was given 3 of 3 points.

Country	Percent Full Credit
<b>Sixth Grade Participants</b>	
Botswana	11 (1.4) ▼
Morocco	7 (0.8) ▼
<sup>1 †</sup> Kuwait	7 (0.9) ▼
Honduras	6 (1.5) ▼

Country	Percent Full Credit
<b>Benchmarking Participants<sup>◇</sup></b>	
<sup>1 3</sup> Florida, US	47 (2.2) ▲
Quebec, Canada	42 (1.9) ▲
<sup>2</sup> Ontario, Canada	42 (2.3) ▲
<sup>2</sup> Alberta, Canada	40 (1.9) ▲
Andalusia, Spain	25 (1.8) ▼
Dubai, UAE	22 (1.4) ▼
Maltese - Malta	14 (1.2) ▼
Abu Dhabi, UAE	12 (1.4) ▼
Eng/Afr (5) - RSA	10 (1.3) ▼

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

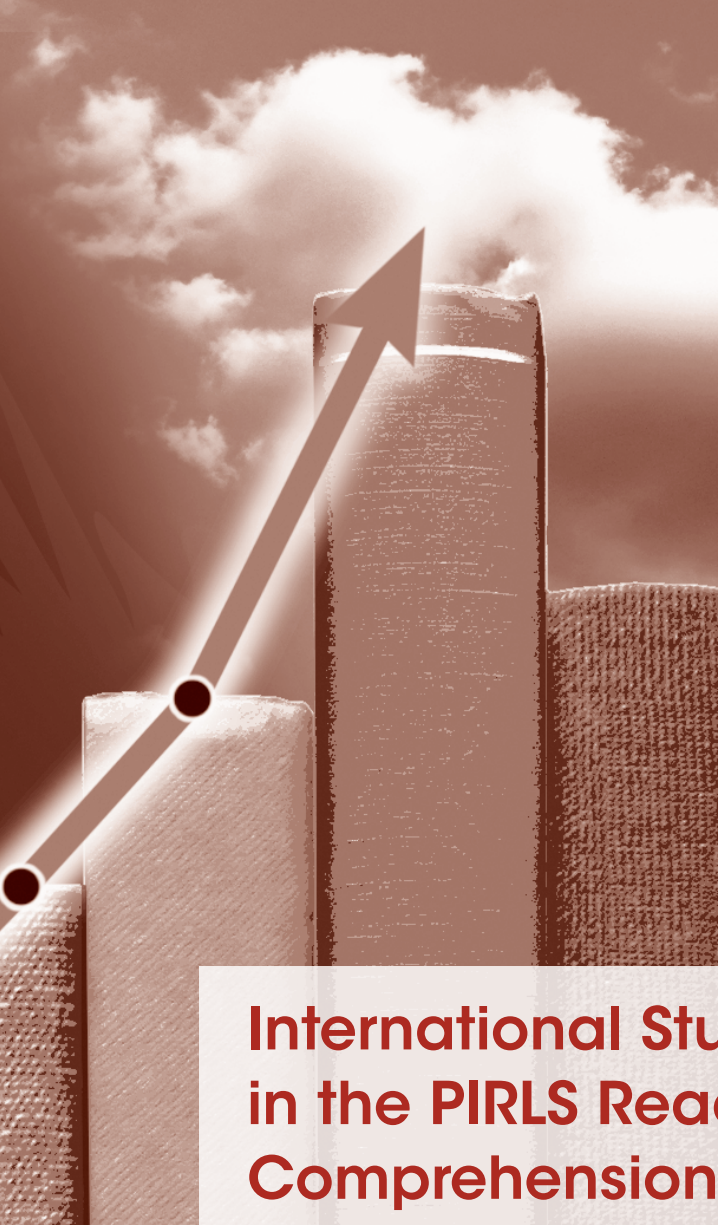
SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011







# Chapter 3



## International Student Achievement in the PIRLS Reading Purposes and Comprehension Processes

Generally, the PIRLS 2011 participants with the highest achievement overall also had the highest achievement across the reading purposes and processes. Many top-performing countries had a relative strength in the interpreting, integrating, and evaluating reading comprehension skills and strategies compared to their reading achievement overall—Hong Kong SAR, the Russian Federation, Singapore, Northern Ireland, and the US as well as the Canadian province of Ontario and the US state of Florida.

In literary reading, girls had higher achievement than boys in nearly every country. However, girls and boys had fewer achievement differences in informational reading across countries.

As explained the *PIRLS 2011 Assessment Framework*, PIRLS has assessed two overarching purposes for reading since its inception:

- ◆ Reading for literary experience; and
- ◆ Reading to acquire and use information.

These two purposes account for most reading done by young children in and out of school. Children often are exposed to stories from a young age, either orally or by being read to. As they grow older, they also encounter a wide variety of informational texts in the form of advertisements, games, and social media via the Internet and magazines, as well as directions and labels on everyday packages and items. In primary school, children’s literary texts and readers typically contain a range of stories and narratives. More recently, there has been increased attention on informational reading in the early grades because children must learn to read a range of non-narrative text types in order to succeed in content area subjects as they progress through school. Also, understanding expository text often is key to success as adults, both in careers and daily life.

Within both reading purposes, each PIRLS assessment has been designed to measure four major processes of reading comprehension:

- ◆ Focusing on and retrieving explicitly stated information;
- ◆ Making straightforward inferences;
- ◆ Interpreting and integrating ideas and information; and
- ◆ Examining and evaluating content, language, and textual elements.

Previous PIRLS assessments have found that most countries performed relatively better in either literary or informational reading; and similarly, that most countries performed relatively better in either the retrieval-inferencing or the interpreting-integrating-evaluating comprehension processes. Chapter 3 presents the PIRLS 2011 results for the literary and informational reading purposes as well as for the comprehension processes, including trends in the reading purposes and processes compared to PIRLS 2001 and 2006. It should be noted that the PIRLS approach for estimating scale scores for the reading purposes and processes was strengthened for 2011.<sup>1</sup> As a result, the trends between 2001 and 2006 were re-estimated, and the updated trends are not directly comparable to the trends reported in PIRLS 2006. Finally, Chapter 3 also provides achievement differences by gender in the reading purposes and comprehension processes.

<sup>1</sup> Please see *Methods and Procedures in TIMSS and PIRLS 2011* on the TIMSS and PIRLS website for details ([timssandpirls.bc.edu](http://timssandpirls.bc.edu)).

## Relative Achievement by Literary and Informational Reading Purposes

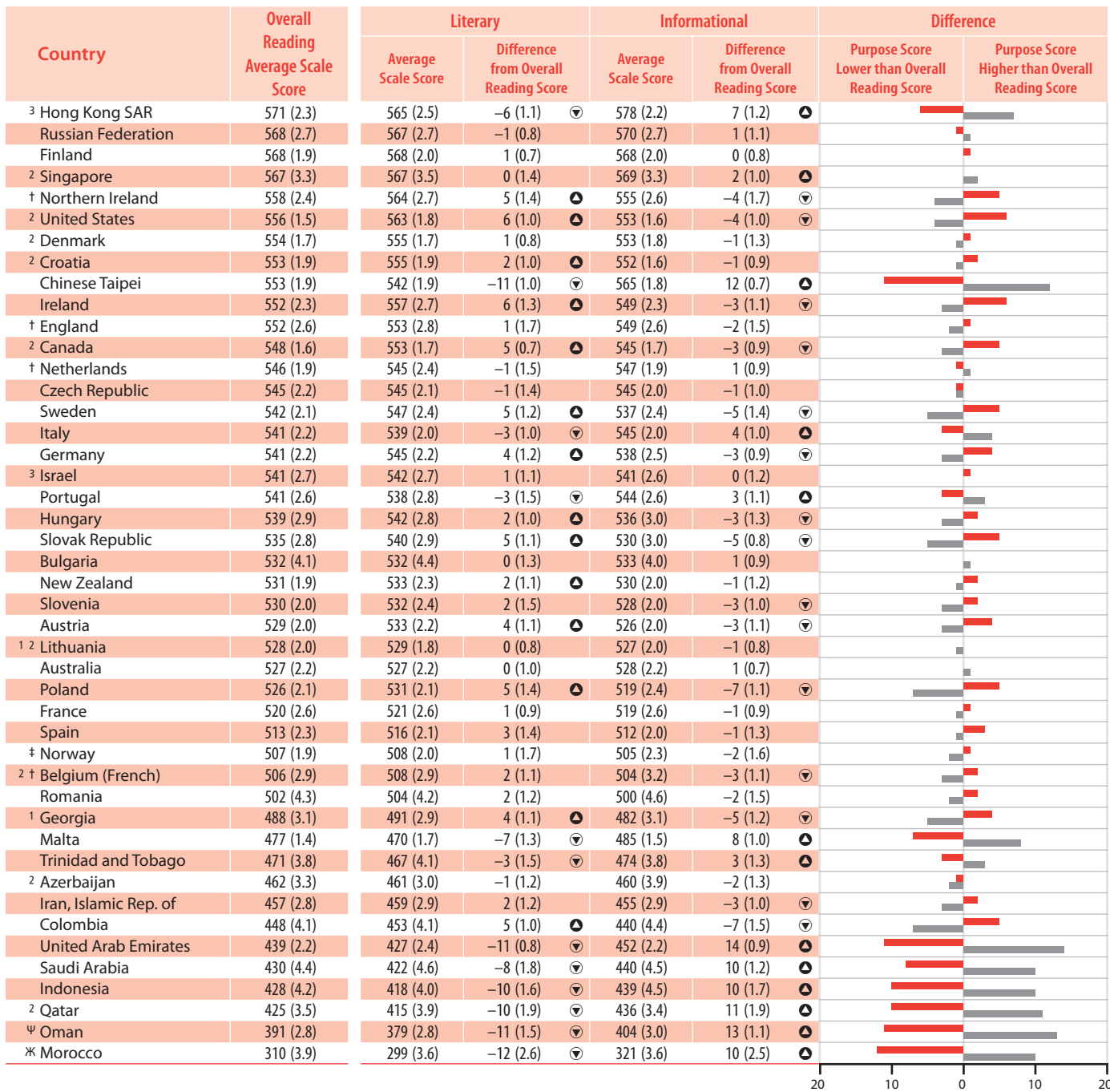
The PIRLS 2011 assessment included five literary passages and five informational passages, so that half of the assessment was devoted to each purpose. As described in Chapter 2, the literary texts were fictional stories where students could engage with the events, characters' actions and feelings, the setting, and ideas, as well as the language itself. The informational passages covered a variety of content and organizational structures. In addition to prose, each passage involved some variety in format and included features such as photographs, illustrations, text boxes, maps, and diagrams.

Exhibit 3.1 presents the average achievement for PIRLS 2011 participants in reading for literary purposes and in reading for informational purposes relative to overall reading achievement. It needs to be kept in mind that the literary and informational scale scores are not directly comparable, because they represent different constructs, and the items in each scale had somewhat different levels of difficulty. For example, as shown in Appendix E (which contains the average percent correct across the items on the PIRLS 2011 scales, on average internationally), the informational scale was more difficult for fourth grade students than the literary scale—50 percent correct on average compared to 59 percent correct, respectively. This pattern held for most but not all PIRLS 2011 participants.

To provide a way for PIRLS 2011 participants to examine relative performance in the two reading purposes, IRT scaling was used to place achievement in literary and informational reading on the PIRLS overall reading scale. The scaling process took the difficulty differences into account, so that average achievement for each of the two reading purposes can be compared relative to overall reading achievement.

In Exhibit 3.1, the first column presents overall average reading achievement followed by the results for the literary and informational reading purposes. PIRLS 2011 participants are presented in order by overall reading achievement, first for the fourth grade followed by the sixth grade, the benchmarking participants, and prePIRLS in Exhibit 3.2. The average scale score for each purpose is shown, together with the difference between achievement in overall reading and achievement in the reading purpose. Up and down arrows are used to indicate whether the literary average scale score or the informational average scale score is significantly higher or lower than the overall average reading score. In the bar graph, differences between literary and overall reading

**Exhibit 3.1: Achievement in Reading Purposes**



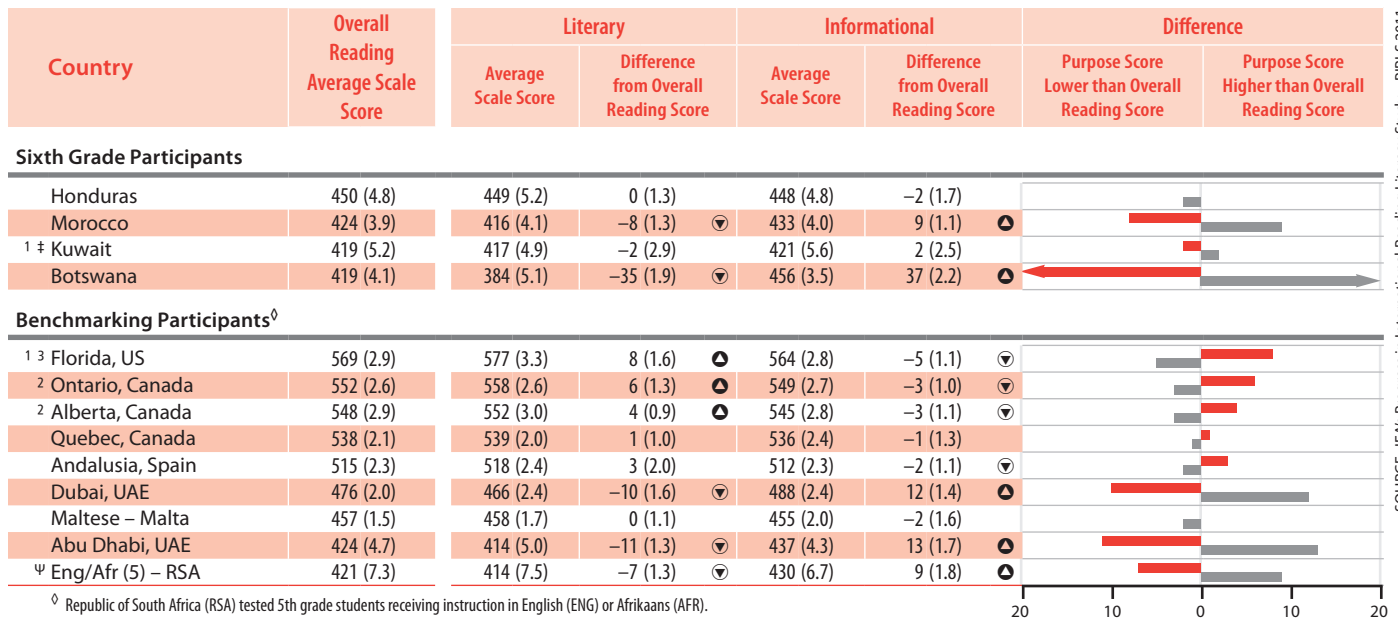
SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

- ▲ Subscale score significantly higher than overall reading score
- ▼ Subscale score significantly lower than overall reading score

- Literary Reading
- Informational Reading

✳ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.  
 ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.  
 See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

**Exhibit 3.1: Achievement in Reading Purposes (Continued)**



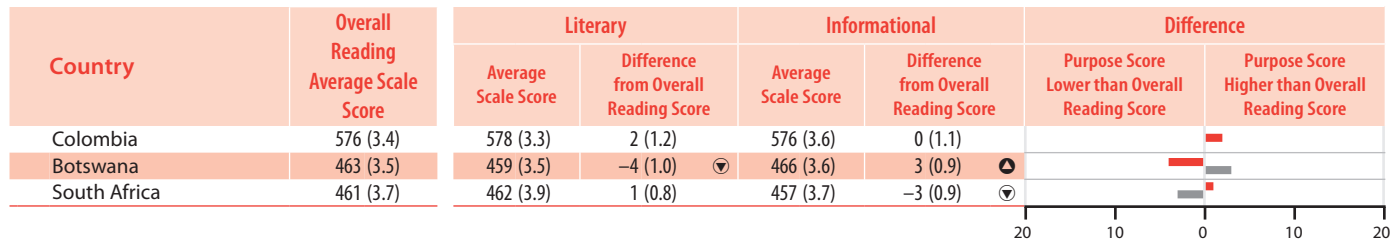
SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ Subscale score significantly higher than overall reading score
- ▼ Subscale score significantly lower than overall reading score

- Literary Reading
- Informational Reading

**Exhibit 3.2: Achievement in Reading Purposes**



- ▲ Subscale score significantly higher than overall reading score
- ▼ Subscale score significantly lower than overall reading score

- Literary Reading
- Informational Reading

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

scale scores are shown in red and differences between informational and overall reading are shown in gray.

Generally, the PIRLS 2011 participants with the highest overall reading achievement also had the highest achievement in both literary and informational reading. Also, similar levels of achievement in both literary and informational reading may signal a well-balanced reading curriculum and instructional program. However, many countries performed relatively higher in one of the reading purposes compared to their overall performance; and, thus, usually relatively lower in the other. That is, students may have either a relative strength in one of the two reading purposes or a relative weakness in one, both a relative strength and a weakness, or neither. For example, among Hong Kong SAR, the Russian Federation, Finland, and Singapore (the four top-performing countries), Hong Kong performed relatively lower in literary reading and relatively higher in informational reading than it did overall. The Russian Federation and Finland showed no differences by reading purpose, and Singapore had no difference in literary reading compared to overall, but a relative strength in informational reading.

Of the next eight highest-performing countries, Northern Ireland and the United States performed significantly higher in literary reading and lower in informational reading; Denmark showed no differences; Croatia demonstrated a relative strength in literary reading; Chinese Taipei achieved relatively lower in literary reading and higher informational reading than overall; Ireland's pattern was the reverse—higher than overall in literary reading, but lower in informational reading; England had no differences; and Canada's results mirrored those in Ireland.

At the sixth grade, Honduras and Kuwait had no differences by reading purpose, but Morocco and, especially, Botswana had lower achievement in literary reading and higher achievement in informational reading than overall. In Botswana, this may reflect an emphasis on “class” reading of informational texts in the upper primary school curriculum, and that children have little access to libraries for wider reading opportunities.

Among the Benchmarking participants, the US state of Florida, and the Canadian provinces of Ontario and Alberta reflected the national results for the United States and Canada—relative strengths in literary reading accompanied by weaknesses in informational reading. However, French-speaking Québec had no differences. The Maltese students tested in English had relatively lower achievement in literary reading and higher achievement in informational

reading, although they showed no difference when assessed in Maltese. Whereas Spain had no achievement differences by reading purpose, its Andalusian region showed a relative strength in informational reading. The two Emirates, Dubai and Abu Dhabi, had the same pattern as the whole of the United Arab Emirates—relatively lower achievement than overall in literary reading and relatively higher achievement in informational reading. The South African students receiving instruction in English or Afrikaans also showed lower relative achievement in literary reading than they did overall, and higher relative achievement in informational reading.

Exhibit 3.2 contains the results by reading purposes for prePIRLS at the fourth grade. Colombia had no differences by reading purpose, but Botswana had relatively lower achievement in literary reading and higher achievement in informational reading than it did overall (as would be anticipated considering the large relative differences at sixth grade). South Africa had a relative weakness in informational reading.

Looking across the results in Exhibits 3.1 and 3.2, there is considerable diversity among countries with relative strengths and weaknesses in either literary or informational reading. However, it is interesting that the English-speaking countries, except England (paradoxically) and Australia, showed relative strengths in literary reading (and/or relative weaknesses in informational reading), whereas the East Asian countries demonstrated the opposite pattern—greater relative strengths in informational reading. The Arabic countries also showed relatively lower performance compared to their overall achievement in literary reading and relatively higher performance in informational reading.

## Relative Achievement by Reading Comprehension Processes

PIRLS 2011 has two scales assessing comprehension processes. The retrieval-inferencing scale includes items assessing the retrieval process (20% of the assessment) and those assessing straightforward inferencing (30%), and is labeled Retrieving and Straightforward Inferencing in the report exhibits. The integrating scale combines the interpreting and integrating process items (30%) with the examining and evaluating process items (20%) and is labeled Interpreting, Integrating, and Evaluating in the exhibits. Thus, each of the two scales includes about half of the assessment items. For prePIRLS, there are also two comprehension process scales. However, one scale consists exclusively of retrieval items (50% of the assessment) and the other of straightforward

inferencing (25%) and interpreting-integrating-evaluating items (25%). In the prePIRLS exhibits, the first scale is labeled Retrieving and the second Inferencing and Integrating.

Exhibit 3.3 presents the average achievement for PIRLS 2011 participants in the retrieval-inferencing and interpreting-integrating-evaluating comprehension processes relative to overall reading achievement. Because these two scales represent quite different skills, it is expected that the assessment items would have different difficulty levels. The two average percent corrects shown in Appendix E were 64 percent for retrieval-inferencing and substantially lower—45 percent—for interpreting-integrating-evaluating. To allow each PIRLS 2011 participant to compare performance in the reading comprehension processes relative to overall reading achievement, IRT scaling was used to place achievement in the two categories of comprehension processes on the overall reading scale. Thus, average achievement for each of the two broad categories of reading processes, taking difficulty differences in account, can be compared relative to overall reading achievement.

The first three columns in Exhibit 3.3 present average achievement in overall reading followed by average achievement in the retrieval-inferencing and interpreting-integrating-evaluating reading processes. The PIRLS 2011 participants are presented in order by overall reading achievement, first for the fourth grade followed by the sixth grade, the benchmarking participants, and prePIRLS in Exhibit 3.4. Up and down arrows are used to indicate whether the retrieval-inferencing average scale score or the interpreting-integrating-evaluating average scale score is significantly different from the overall reading average score. Differences between retrieval-inferencing and overall reading scale scores are shown in red and differences between interpreting-integrating-evaluating and overall reading are shown in gray.

Generally, the PIRLS 2011 participants with the highest achievement overall also had the highest achievement on both comprehension process scales. It also is preferable for students to demonstrate high achievement in a range of reading comprehension skills and strategies. The results in Exhibit 3.3 reveal, however, that compared to their overall performance, many countries performed relatively higher in one comprehension process and relatively lower in the other. For example, there was a tendency for higher performing countries to perform relatively lower in the retrieval-inferencing processes and relatively higher in the interpreting-integrating-evaluating processes (after accounting for the difference in difficulty between the two). While Finland performed equally



well across both reading comprehension process scales, as did Croatia and Ireland, eight of the twelve highest-performing countries performed relatively higher in the interpreting-integrating-evaluating process than they did overall (Hong Kong SAR, the Russian Federation, Singapore, Northern Ireland, the United States, Chinese Taipei, England, and Canada).

### Trends in Achievement in Reading Purposes and Comprehension Processes

Exhibit 3.5 shows trends in average achievement in reading for the literary and informational purposes for fourth-grade students. Countries are shown in alphabetical order, followed by the benchmarking participants. In general, overall increases or decreases in reading achievement since 2001 and 2006 were reflected in increases or decreases in both literary and informational purposes.

However, there were some notable differences. Literary reading achievement in France has remained relatively stable but achievement in informational reading has declined since 2001 (13 points). In Hungary, informational reading achievement has remained essentially the same over the decade but literary reading has declined (10 points). Norwegian fourth-grade students have remained at the same level over the decade in literary reading but improved substantially in informational reading (14 points).

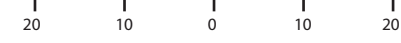
Exhibit 3.6 shows trends between PIRLS 2001 and PIRLS 2011 in average achievement in reading for the retrieval-inferencing and interpreting-integrating-evaluating comprehension processes for fourth grade students. Countries are shown in alphabetical order, followed by the benchmarking participants. Similar to the trend results for the reading purposes, overall increases or decreases in reading achievement since 2001 and 2006 were reflected in increases or decreases in both comprehension process achievement scales.

Substantial improvement (12 points) in the interpreting-integrating-evaluating comprehension process was shown by both the Czech Republic (since 2001) and Denmark (since 2006), although neither showed an increase in the retrieval-inferencing process. Retrieval-inferencing achievement in France has remained relatively stable across the decade but achievement in the interpreting-integrating-evaluating processes has declined (11 points). In Norway, retrieval-inferencing achievement also has remained relatively stable across the decade but there were improvements (10 points) in the interpreting-integrating-evaluating processes.

**Exhibit 3.3: Achievement in Comprehension Processes**

Country	Overall Reading Average Scale Score	Retrieving and Straightforward Inferencing		Interpreting, Integrating, and Evaluating		Difference	
		Average Scale Score	Difference from Overall Reading Score	Average Scale Score	Difference from Overall Reading Score	Process Score Lower than Overall Reading Score	Process Score Higher than Overall Reading Score
<sup>3</sup> Hong Kong SAR	571 (2.3)	562 (2.0)	-8 (1.0) ▼	578 (2.4)	7 (1.0) ▲		
Russian Federation	568 (2.7)	565 (2.7)	-3 (1.2) ▼	571 (2.6)	2 (0.9) ▲		
Finland	568 (1.9)	569 (2.0)	1 (0.9)	567 (1.8)	-1 (0.7)		
<sup>2</sup> Singapore	567 (3.3)	565 (3.4)	-2 (1.3)	570 (3.4)	3 (1.2) ▲		
<sup>†</sup> Northern Ireland	558 (2.4)	555 (2.5)	-3 (1.0) ▼	562 (2.5)	4 (1.0) ▲		
<sup>2</sup> United States	556 (1.5)	549 (1.5)	-7 (0.7) ▼	563 (1.6)	6 (0.6) ▲		
<sup>2</sup> Denmark	554 (1.7)	556 (1.9)	2 (1.1) ▲	553 (1.5)	-1 (0.8)		
<sup>2</sup> Croatia	553 (1.9)	554 (2.0)	1 (1.0)	552 (1.7)	-1 (1.1)		
Chinese Taipei	553 (1.9)	551 (1.8)	-1 (0.8)	555 (1.9)	2 (0.7) ▲		
Ireland	552 (2.3)	552 (2.8)	0 (1.8)	553 (2.2)	2 (0.9) ▲		
<sup>†</sup> England	552 (2.6)	546 (2.6)	-6 (1.3) ▼	555 (2.7)	4 (1.1) ▲		
<sup>2</sup> Canada	548 (1.6)	543 (1.5)	-5 (0.6) ▼	554 (1.5)	5 (0.4) ▲		
<sup>†</sup> Netherlands	546 (1.9)	549 (2.2)	3 (1.0) ▲	543 (2.0)	-3 (1.0) ▼		
Czech Republic	545 (2.2)	548 (2.4)	3 (0.9) ▲	544 (2.0)	-2 (0.9)		
Sweden	542 (2.1)	543 (2.1)	1 (1.0)	540 (2.1)	-1 (0.9)		
Italy	541 (2.2)	539 (1.9)	-2 (1.2)	544 (2.0)	3 (0.9) ▲		
Germany	541 (2.2)	548 (2.3)	7 (0.9) ▲	536 (2.2)	-5 (1.0) ▼		
<sup>3</sup> Israel	541 (2.7)	538 (2.9)	-3 (1.4) ▼	543 (3.0)	2 (1.4) ▲		
Portugal	541 (2.6)	539 (2.8)	-2 (1.6)	542 (2.6)	1 (1.0)		
Hungary	539 (2.9)	537 (2.8)	-2 (0.9) ▼	542 (2.7)	3 (1.2) ▲		
Slovak Republic	535 (2.8)	534 (2.9)	-1 (1.0)	536 (2.7)	1 (0.6)		
Bulgaria	532 (4.1)	532 (4.0)	0 (1.0)	532 (3.9)	0 (1.0)		
New Zealand	531 (1.9)	527 (2.0)	-4 (0.9) ▼	535 (1.9)	4 (1.4) ▲		
Slovenia	530 (2.0)	533 (1.9)	2 (1.4) ▲	530 (2.2)	-1 (1.8) ▼		
Austria	529 (2.0)	539 (2.3)	10 (1.4) ▲	521 (2.0)	-8 (0.8) ▼		
<sup>1 2</sup> Lithuania	528 (2.0)	530 (1.9)	2 (1.1) ▲	527 (2.0)	-1 (1.1)		
Australia	527 (2.2)	527 (2.6)	-1 (1.3)	529 (2.2)	2 (1.0)		
Poland	526 (2.1)	526 (2.1)	1 (1.1)	525 (2.1)	-1 (1.3)		
France	520 (2.6)	528 (2.4)	8 (1.0) ▲	512 (2.8)	-8 (1.5) ▼		
Spain	513 (2.3)	516 (2.1)	3 (1.0) ▲	510 (2.1)	-3 (1.0) ▼		
<sup>‡</sup> Norway	507 (1.9)	511 (1.8)	4 (0.9) ▲	502 (2.6)	-5 (1.7) ▼		
<sup>2 †</sup> Belgium (French)	506 (2.9)	512 (2.9)	6 (0.7) ▲	499 (3.2)	-7 (1.4) ▼		
Romania	502 (4.3)	500 (4.2)	-2 (1.1) ▼	503 (4.5)	1 (1.3)		
<sup>1</sup> Georgia	488 (3.1)	484 (3.0)	-4 (1.2) ▼	491 (3.1)	3 (1.1) ▲		
Malta	477 (1.4)	479 (1.9)	2 (1.7)	475 (1.8)	-2 (1.2)		
Trinidad and Tobago	471 (3.8)	474 (3.8)	3 (0.9) ▲	464 (4.0)	-7 (1.1) ▼		
<sup>2</sup> Azerbaijan	462 (3.3)	469 (3.2)	6 (1.0) ▲	449 (3.7)	-13 (1.3) ▼		
Iran, Islamic Rep. of	457 (2.8)	458 (2.9)	0 (0.9)	456 (3.0)	-1 (1.5)		
Colombia	448 (4.1)	450 (4.1)	3 (1.2) ▲	442 (4.6)	-5 (1.7) ▼		
United Arab Emirates	439 (2.2)	439 (2.3)	0 (0.9)	438 (2.3)	-1 (0.7)		
Saudi Arabia	430 (4.4)	433 (4.6)	4 (1.3) ▲	424 (4.6)	-6 (1.5) ▼		
Indonesia	428 (4.2)	431 (4.3)	2 (1.6)	423 (4.7)	-6 (2.0) ▼		
<sup>2</sup> Qatar	425 (3.5)	424 (3.6)	-1 (1.2)	425 (3.8)	1 (1.0)		
<sup>ψ</sup> Oman	391 (2.8)	395 (2.4)	4 (1.1) ▲	382 (3.0)	-9 (1.1) ▼		
<sup>✳</sup> Morocco	310 (3.9)	325 (3.2)	14 (2.3) ▲	288 (4.3)	-22 (3.0) ▼		

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011



- ▲ Subscale score significantly higher than overall reading score
- ▼ Subscale score significantly lower than overall reading score

- Retrieving and Straightforward Inferencing
- Interpreting, Integrating, and Evaluating

✳ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.  
 ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.  
 See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

**Exhibit 3.3: Achievement in Comprehension Processes (Continued)**

Country	Overall Reading Average Scale Score	Retrieving and Straightforward Inferencing		Interpreting, Integrating, and Evaluating		Difference	
		Average Scale Score	Difference from Overall Reading Score	Average Scale Score	Difference from Overall Reading Score	Process Score Lower than Overall Reading Score	Process Score Higher than Overall Reading Score
<b>Sixth Grade Participants</b>							
Honduras	450 (4.8)	452 (4.9)	3 (1.0) ▲	443 (5.0)	-7 (1.8) ▼		
Morocco	424 (3.9)	430 (3.8)	6 (1.0) ▲	412 (4.0)	-12 (1.7) ▼		
<sup>1</sup> † Kuwait	419 (5.2)	422 (4.4)	3 (1.5) ▲	414 (5.4)	-5 (2.4) ▼		
Botswana	419 (4.1)	417 (4.1)	-2 (1.2)	421 (3.9)	2 (0.9) ▲		
<b>Benchmarking Participants<sup>⊖</sup></b>							
<sup>1</sup> <sup>3</sup> Florida, US	569 (2.9)	564 (2.9)	-5 (1.4) ▼	574 (2.8)	5 (1.0) ▲		
<sup>2</sup> Ontario, Canada	552 (2.6)	545 (2.5)	-7 (1.3) ▼	559 (2.6)	8 (0.9) ▲		
<sup>2</sup> Alberta, Canada	548 (2.9)	542 (2.9)	-6 (0.9) ▼	554 (3.2)	6 (1.8) ▲		
Quebec, Canada	538 (2.1)	538 (2.1)	0 (1.1)	538 (2.3)	0 (1.6)		
Andalusia, Spain	515 (2.3)	518 (2.3)	3 (1.2) ▲	510 (2.4)	-5 (0.9) ▼		
Dubai, UAE	476 (2.0)	478 (2.2)	1 (1.5)	474 (2.1)	-2 (1.4)		
Maltese – Malta	457 (1.5)	461 (2.4)	3 (1.9)	451 (1.6)	-6 (1.2) ▼		
Abu Dhabi, UAE	424 (4.7)	424 (4.5)	0 (1.2)	425 (4.6)	1 (1.6)		
⊙ Eng/Afr (5) – RSA	421 (7.3)	420 (7.3)	-1 (1.5)	422 (7.0)	1 (2.1)		

<sup>⊖</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ Subscale score significantly higher than overall reading score
- ▼ Subscale score significantly lower than overall reading score

- Retrieving and Straightforward Inferencing
- Interpreting, Integrating, and Evaluating

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 3.4: Achievement in Comprehension Processes**

Country	Overall Reading Average Scale Score	Retrieving		Inferencing and Integrating		Difference	
		Average Scale Score	Difference from Overall Reading Score	Average Scale Score	Difference from Overall Reading Score	Process Score Lower than Overall Reading Score	Process Score Higher than Overall Reading Score
Colombia	576 (3.4)	577 (3.8)	1 (1.9)	578 (3.4)	1 (1.2)		
Botswana	463 (3.5)	464 (3.5)	0 (0.7)	464 (3.5)	0 (1.3)		
South Africa	461 (3.7)	461 (3.8)	0 (0.7)	459 (3.8)	-2 (1.0)		

- ▲ Subscale score significantly higher than overall reading score
- ▼ Subscale score significantly lower than overall reading score

- Retrieving
- Inferencing and Integrating

(†) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Country	Literary				Informational			
	Assessment Year	Average Scale Score	Differences Between Years		Assessment Year	Average Scale Score	Differences Between Years	
			2006	2001			2006	2001
<b>Austria</b>								
2011	533 (2.2)	-7 ▼		2011	526 (2.0)	-10 ▼		
2006	540 (2.2)			2006	536 (2.3)			
<b>Belgium (French)</b>								
2011	508 (2.9)	8 ▲		2011	504 (3.2)	7		
2006	500 (2.5)			2006	497 (2.9)			
<b>Bulgaria</b>								
2011	532 (4.4)	-12	-19 ▼	2011	533 (4.0)	-18 ▼	-18 ▼	
2006	544 (4.7)		-7	2006	551 (4.5)		0	
2001	551 (4.0)			2001	551 (3.8)			
<b>Chinese Taipei</b>								
2011	542 (1.9)	9 ▲		2011	565 (1.8)	27 ▲		
2006	532 (2.1)			2006	539 (1.8)			
<b>Colombia</b>								
2011	453 (4.1)		29 ▲	2011	440 (4.4)		22 ▲	
2001	424 (4.7)			2001	419 (4.5)			
<b>Czech Republic</b>								
2011	545 (2.1)		7 ▲	2011	545 (2.0)		9 ▲	
2001	538 (2.3)			2001	536 (2.6)			
<b>Denmark</b>								
2011	555 (1.7)	6		2011	553 (1.8)	10 ▲		
2006	549 (2.6)			2006	543 (2.6)			
<b>England</b>								
2011	553 (2.8)	12 ▲	-9	2011	549 (2.6)	11 ▲	1	
2006	540 (2.6)		-21 ▼	2006	538 (2.6)		-10 ▼	
2001	561 (3.8)			2001	548 (3.7)			
<b>France</b>								
2011	521 (2.6)	4	2	2011	519 (2.6)	-7 ▼	-13 ▼	
2006	517 (2.5)		-2	2006	526 (2.2)		-6	
2001	519 (2.6)			2001	532 (2.6)			
<b>Georgia</b>								
2011	491 (2.9)	15 ▲		2011	482 (3.1)	20 ▲		
2006	477 (3.3)			2006	462 (3.8)			
<b>Germany</b>								
2011	545 (2.2)	-6	5	2011	538 (2.5)	-8 ▼	-2	
2006	551 (2.1)		11 ▲	2006	546 (2.4)		6 ▲	
2001	539 (1.8)			2001	539 (1.8)			
<b>Hong Kong SAR</b>								
2011	565 (2.5)	5	45 ▲	2011	578 (2.2)	7 ▲	41 ▲	
2006	559 (2.7)		39 ▲	2006	570 (2.3)		33 ▲	
2001	520 (3.4)			2001	537 (3.1)			
<b>Hungary</b>								
2011	542 (2.8)	-17 ▼	-10 ▼	2011	536 (3.0)	-6	-1	
2006	559 (3.0)		8 ▲	2006	542 (3.2)		6	
2001	551 (2.2)			2001	537 (2.2)			
<b>Indonesia</b>								
2011	418 (4.0)	24 ▲		2011	439 (4.5)	26 ▲		
2006	395 (4.1)			2006	413 (4.4)			
<b>Iran, Islamic Rep. of</b>								
2011	459 (2.9)	34 ▲	39 ▲	2011	455 (2.9)	40 ▲	52 ▲	
2006	425 (3.3)		4	2006	415 (3.2)		12 ▲	
2001	420 (4.4)			2001	403 (4.5)			

▲ More recent year significantly higher  
▼ More recent year significantly lower

Ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%. Such annotations in exhibits with trend data began in 2011, so data from assessments prior to 2011 are not annotated for reservations.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 3.5: Trends in Achievement for Reading Purposes (Continued)**

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Country	Literary			Informational				
	Assessment Year	Average Scale Score	Differences Between Years		Assessment Year	Average Scale Score	Differences Between Years	
			2006	2001			2006	2001
<b>Italy</b>								
2011	539 (2.0)	-15 ▼	-7 ▼	2011	545 (2.0)	-5	8 ▲	
2006	554 (3.4)		8	2006	550 (3.0)		13 ▲	
2001	546 (2.7)			2001	537 (2.6)			
<b>Lithuania</b>								
2011	529 (1.8)	-15 ▼	-19 ▼	2011	527 (2.0)	-3	-12 ▼	
2006	543 (2.0)		-5	2006	530 (1.7)		-9 ▼	
2001	548 (2.8)			2001	539 (2.8)			
<b>Netherlands</b>								
2011	545 (2.4)	-2	-10 ▼	2011	547 (1.9)	-2	-7 ▼	
2006	546 (1.9)		-9 ▼	2006	549 (1.5)		-5	
2001	555 (2.6)			2001	554 (2.8)			
<b>New Zealand</b>								
2011	533 (2.3)	4	-1	2011	530 (2.0)	-5	4	
2006	529 (2.1)		-6	2006	534 (2.4)		8	
2001	535 (4.1)			2001	526 (4.0)			
<b>Norway</b>								
2011	508 (2.0)	6	0	2011	505 (2.3)	12 ▲	14 ▲	
2006	502 (2.6)		-5	2006	493 (2.8)		2	
2001	507 (3.1)			2001	491 (3.1)			
<b>Poland</b>								
2011	531 (2.1)	6		2011	519 (2.4)	5		
2006	525 (2.5)			2006	514 (2.2)			
<b>Romania</b>								
2011	504 (4.2)	11	-9	2011	500 (4.6)	15 ▲	-11	
2006	493 (5.0)		-20 ▼	2006	485 (5.2)		-26 ▼	
2001	513 (4.8)			2001	511 (5.1)			
<b>Russian Federation</b>								
2011	567 (2.7)	4	42 ▲	2011	570 (2.7)	4	40 ▲	
2006	563 (3.4)		38 ▲	2006	566 (3.5)		35 ▲	
2001	526 (4.2)			2001	530 (4.6)			
<b>Singapore</b>								
2011	567 (3.5)	13 ▲	36 ▲	2011	569 (3.3)	4	42 ▲	
2006	554 (3.0)		23 ▲	2006	565 (2.9)		37 ▲	
2001	531 (5.8)			2001	528 (5.2)			
<b>Slovak Republic</b>								
2011	540 (2.9)	5	25 ▲	2011	530 (3.0)	3	9 ▲	
2006	535 (2.9)		21 ▲	2006	527 (2.7)		5	
2001	514 (2.9)			2001	522 (2.9)			
<b>Slovenia</b>								
2011	532 (2.4)	12 ▲	32 ▲	2011	528 (2.0)	5	26 ▲	
2006	521 (2.0)		20 ▲	2006	523 (2.4)		21 ▲	
2001	501 (2.1)			2001	502 (2.1)			
<b>Spain</b>								
2011	516 (2.1)	-2		2011	512 (2.0)	5		
2006	517 (2.7)			2006	507 (2.8)			
<b>Sweden</b>								
2011	547 (2.4)	-1	-15 ▼	2011	537 (2.4)	-13 ▼	-23 ▼	
2006	548 (2.2)		-14 ▼	2006	550 (2.5)		-10 ▼	
2001	562 (2.4)			2001	560 (2.4)			

- ▲ More recent year significantly higher  
▼ More recent year significantly lower

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Literary				Informational				
Country	Assessment Year	Average Scale Score	Differences Between Years		Assessment Year	Average Scale Score	Differences Between Years	
			2006	2001			2006	2001
<b>Trinidad and Tobago</b>								
	2011	467 (4.1)	35 ▲		2011	474 (3.8)	37 ▲	
	2006	433 (4.8)			2006	436 (4.8)		
<b>United States</b>								
	2011	563 (1.8)	20 ▲	10 ▲	2011	553 (1.6)	15 ▲	19 ▲
	2006	542 (3.7)		-10	2006	538 (3.7)		4
	2001	552 (4.1)			2001	534 (3.9)		
<b>Benchmarking Participants<sup>◊</sup></b>								
<b>Alberta, Canada</b>								
	2011	552 (3.0)	-11 ▼		2011	545 (2.8)	-13 ▼	
	2006	563 (2.8)			2006	558 (2.6)		
<b>Ontario, Canada</b>								
	2011	558 (2.6)	1	4	2011	549 (2.7)	-5	5
	2006	558 (3.1)		4	2006	554 (3.0)		10 ▲
	2001	554 (3.4)			2001	544 (3.5)		
<b>Quebec, Canada</b>								
	2011	539 (2.0)	8 ▲	3	2011	536 (2.4)	2	-6
	2006	531 (2.8)		-5	2006	534 (2.9)		-8 ▼
	2001	536 (3.2)			2001	542 (3.0)		
<b>Eng/Afr (5) - RSA</b>								
Ψ	2011	414 (7.5)	22		2011	430 (6.7)	17	
	2006	392 (12.6)			2006	413 (11.5)		

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ More recent year significantly higher
- ▼ More recent year significantly lower

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 3.6: Trends in Achievement for Comprehension Processes**

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Retrieving and Straightforward Inferencing				Interpreting, Integrating, and Evaluating			
Country	Assessment Year	Differences Between Years		Assessment Year	Average Scale Score	Differences Between Years	
		2006	2001			2006	2001
<b>Austria</b>							
	2011	539 (2.3)	-9 ▼		2011	521 (2.0)	-8 ▼
	2006	548 (2.2)			2006	528 (2.4)	
<b>Belgium (French)</b>							
	2011	512 (2.9)	8		2011	499 (3.2)	6
	2006	504 (2.6)			2006	493 (2.7)	
<b>Bulgaria</b>							
	2011	532 (4.0)	-9	-20 ▼	2011	532 (3.9)	-20 ▼
	2006	541 (4.2)		-11	2006	552 (4.7)	1
	2001	552 (4.1)			2001	550 (3.6)	
<b>Chinese Taipei</b>							
	2011	551 (1.8)	7 ▲		2011	555 (1.9)	27 ▲
	2006	545 (2.0)			2006	527 (2.0)	
<b>Colombia</b>							
	2011	450 (4.1)		20 ▲	2011	442 (4.6)	32 ▲
	2001	431 (4.3)			2001	410 (4.9)	
<b>Czech Republic</b>							
	2011	548 (2.4)		5	2011	544 (2.0)	12 ▲
	2001	543 (2.7)			2001	532 (2.3)	
<b>Denmark</b>							
	2011	556 (1.9)	3		2011	553 (1.5)	12 ▲
	2006	554 (2.8)			2006	541 (2.4)	
<b>England</b>							
	2011	546 (2.6)	9 ▲	-3	2011	555 (2.7)	13 ▲
	2006	537 (2.7)		-12 ▼	2006	542 (2.5)	-14 ▼
	2001	549 (3.2)			2001	556 (3.5)	
<b>France</b>							
	2011	528 (2.4)	1	-1	2011	512 (2.8)	-4
	2006	527 (2.1)		-2	2006	515 (2.4)	-7 ▼
	2001	529 (2.7)			2001	523 (2.5)	
<b>Georgia</b>							
	2011	484 (3.0)	4		2011	491 (3.1)	35 ▲
	2006	480 (3.4)			2006	456 (3.7)	
<b>Germany</b>							
	2011	548 (2.3)	-10 ▼	3	2011	536 (2.2)	-4
	2006	558 (2.6)		13 ▲	2006	540 (2.2)	5
	2001	545 (1.8)			2001	535 (2.0)	
<b>Hong Kong SAR</b>							
	2011	562 (2.0)	1	37 ▲	2011	578 (2.4)	12 ▲
	2006	561 (2.5)		37 ▲	2006	566 (2.6)	36 ▲
	2001	525 (3.2)			2001	530 (3.4)	
<b>Hungary</b>							
	2011	537 (2.8)	-10 ▼	-6	2011	542 (2.7)	-12 ▼
	2006	547 (2.8)		4	2006	554 (3.2)	10 ▲
	2001	543 (2.1)			2001	544 (2.2)	
<b>Indonesia</b>							
	2011	431 (4.3)	21 ▲		2011	423 (4.7)	29 ▲
	2006	410 (4.1)			2006	394 (4.7)	
<b>Iran, Islamic Rep. of</b>							
	2011	458 (2.9)	29 ▲	35 ▲	2011	456 (3.0)	48 ▲
	2006	429 (3.5)		6	2006	409 (3.5)	10
	2001	423 (4.6)			2001	399 (5.0)	

▲ More recent year significantly higher  
▼ More recent year significantly lower

Ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%. Such annotations in exhibits with trend data began in 2011, so data from assessments prior to 2011 are not annotated for reservations.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Retrieving and Straightforward Inferencing				Interpreting, Integrating, and Evaluating				
Country	Assessment Year	Average Scale Score	Differences Between Years		Assessment Year	Average Scale Score	Differences Between Years	
			2006	2001			2006	2001
<b>Italy</b>								
	2011	539 (1.9)	-8 ▼	-2	2011	544 (2.0)	-12 ▼	3
	2006	547 (2.9)		6	2006	556 (3.0)		16 ▲
	2001	541 (2.4)			2001	540 (2.6)		
<b>Lithuania</b>								
	2011	530 (1.9)	-5 ▼	-13 ▼	2011	527 (2.0)	-11 ▼	-16 ▼
	2006	536 (1.9)		-8 ▼	2006	539 (1.8)		-5
	2001	543 (3.1)			2001	544 (2.8)		
<b>Netherlands</b>								
	2011	549 (2.2)	-5	-10 ▼	2011	543 (2.0)	1	-8 ▼
	2006	554 (1.8)		-5	2006	542 (1.7)		-10 ▼
	2001	559 (2.6)			2001	552 (2.4)		
<b>New Zealand</b>								
	2011	527 (2.0)	0	3	2011	535 (1.9)	-1	1
	2006	527 (2.4)		2	2006	537 (2.3)		2
	2001	525 (3.9)			2001	534 (4.0)		
<b>Norway</b>								
	2011	511 (1.8)	5	4	2011	502 (2.6)	11 ▲	10 ▲
	2006	506 (2.3)		-1	2006	490 (2.6)		-2
	2001	508 (2.9)			2001	492 (3.0)		
<b>Poland</b>								
	2011	526 (2.1)	7 ▲		2011	525 (2.1)	5	
	2006	519 (2.3)			2006	519 (2.5)		
<b>Romania</b>								
	2011	500 (4.2)	9	-12	2011	503 (4.5)	17 ▲	-9
	2006	491 (5.4)		-21 ▼	2006	486 (5.6)		-26 ▼
	2001	512 (5.2)			2001	512 (4.8)		
<b>Russian Federation</b>								
	2011	565 (2.7)	0	32 ▲	2011	571 (2.6)	7	47 ▲
	2006	565 (3.4)		32 ▲	2006	564 (3.4)		40 ▲
	2001	533 (4.3)			2001	524 (5.0)		
<b>Singapore</b>								
	2011	565 (3.4)	2	31 ▲	2011	570 (3.4)	14 ▲	44 ▲
	2006	563 (3.2)		29 ▲	2006	557 (2.9)		31 ▲
	2001	534 (5.6)			2001	526 (5.1)		
<b>Slovak Republic</b>								
	2011	534 (2.9)	2	10 ▲	2011	536 (2.7)	6	24 ▲
	2006	533 (2.8)		8 ▲	2006	530 (3.0)		18 ▲
	2001	524 (2.8)			2001	512 (3.2)		
<b>Slovenia</b>								
	2011	533 (1.9)	11 ▲	26 ▲	2011	530 (2.2)	8 ▲	32 ▲
	2006	522 (2.2)		15 ▲	2006	522 (2.1)		25 ▲
	2001	506 (2.2)			2001	497 (2.2)		
<b>Spain</b>								
	2011	516 (2.1)	5		2011	510 (2.1)	-3	
	2006	511 (2.6)			2006	513 (2.8)		
<b>Sweden</b>								
	2011	543 (2.1)	-11 ▼	-23 ▼	2011	540 (2.1)	-6	-18 ▼
	2006	554 (2.3)		-12 ▼	2006	546 (2.3)		-13 ▼
	2001	565 (2.5)			2001	559 (2.2)		

▲ More recent year significantly higher  
▼ More recent year significantly lower



**Exhibit 3.6: Trends in Achievement for Comprehension Processes (Continued)**

Instructions: Read across the row to determine if the performance in the row year is significantly higher (▲) or significantly lower (▼) than the performance in the column year.

Retrieving and Straightforward Inferencing				Interpreting, Integrating, and Evaluating				
Country	Assessment Year	Average Scale Score	Differences Between Years		Assessment Year	Average Scale Score	Differences Between Years	
			2006	2001			2006	2001
<b>Trinidad and Tobago</b>								
	2011	474 (3.8)	34 ▲		2011	464 (4.0)	35 ▲	
	2006	440 (4.9)			2006	429 (5.2)		
<b>United States</b>								
	2011	549 (1.5)	14 ▲	11 ▲	2011	563 (1.6)	17 ▲	16 ▲
	2006	535 (3.4)		-3	2006	545 (3.7)		-2
	2001	538 (4.3)			2001	547 (3.8)		

**Benchmarking Participants<sup>◇</sup>**

<b>Alberta, Canada</b>								
	2011	542 (2.9)	-15 ▼		2011	554 (3.2)	-11 ▼	
	2006	557 (2.8)			2006	565 (2.6)		
<b>Ontario, Canada</b>								
	2011	545 (2.5)	-3	3	2011	559 (2.6)	-3	6
	2006	547 (3.2)		6	2006	563 (3.1)		9 ▲
	2001	541 (3.3)			2001	553 (2.9)		
<b>Quebec, Canada</b>								
	2011	538 (2.1)	2	1	2011	538 (2.3)	8 ▲	-2
	2006	536 (2.7)		0	2006	530 (2.8)		-10 ▼
	2001	537 (3.1)			2001	540 (2.9)		
<b>Eng/Afr (5) - RSA</b>								
Ψ	2011	420 (7.3)	16		2011	422 (7.0)	21	
	2006	404 (12.0)			2006	400 (12.3)		

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

- ▲ More recent year significantly higher
- ▼ More recent year significantly lower

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

## Achievement in the Reading Purposes and Comprehension Processes by Gender

Exhibit 3.7 presents the PIRLS 2011 gender differences in average achievement for the two reading purposes, literary and informational, as well as for the two comprehension processes, retrieval-inferencing and interpreting-integrating-evaluating. For the literary reading purpose, girls had significantly higher average achievement than boys in every participating entity except Colombia and Israel. By contrast, a number of European countries had little if any gender difference in informational reading, including Austria, Belgium (French), Czech Republic, France, Germany, Italy, the Netherlands, Poland, and Spain. Colombia and Israel also had no gender difference in informational reading, as was the case in the two benchmarking participants of Andalusia, Spain and Dubai, United Arab Emirates. The larger gender gap in literary compared to informational reading also was reflected in the average achievement differences. Across the countries, on average, fourth grade girls had a 20-point advantage in literary reading (522 vs. 502) compared to a 12-point advantage in informational reading (519 vs. 507).

Exhibit 3.8 presents average achievement by gender for prePIRLS. Not surprisingly (because they were the same students as for PIRLS), the Colombian students did not show a gender difference for the reading purposes. However, girls in Botswana and South Africa had higher average reading achievement than boys in both literary and informational reading.

Mirroring the results overall and for the literary and informational purposes, girls typically had higher achievement than boys in both the retrieval-inferencing and interpreting-integrating-evaluating comprehension processes, with an equivalent gender gap. Across the countries, on average, fourth grade girls had a 16-point advantage in the retrieval-inferencing processes (521 vs. 505), compared to a 17-point advantage in the interpreting-integrating-evaluating process (519 vs. 502). Several countries did not have gender differences for the retrieval-inferencing processes, including Austria, Colombia, Israel, Italy, the Netherlands, Spain, and the benchmarking participant of Dubai. For the interpreting-integrating-evaluating processes, there was no gender difference in Belgium (French), Colombia, France, Israel, and Italy. In all countries participating at the sixth grade, girls had higher achievement than boys in both types of comprehension processes. For prePIRLS, the girls in Botswana and South Africa had higher average achievement than boys in both the retrieving and inferencing-integrating comprehension processes. There were no gender differences in Colombia in average achievement for the comprehension processes.

**Exhibit 3.7: Achievement in Reading Purposes and Comprehension Processes by Gender**

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Reading Purposes				Comprehension Processes			
	Literary		Informational		Retrieving and Straightforward Inferencing		Interpreting, Integrating, and Evaluating	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Australia	539 (3.0) ▲	516 (3.2)	534 (2.9) ▲	522 (2.7)	536 (3.1) ▲	517 (3.1)	538 (2.8) ▲	521 (2.7)
Austria	539 (2.3) ▲	526 (2.7)	527 (2.2)	525 (2.5)	542 (2.5)	537 (2.8)	526 (2.1) ▲	516 (2.4)
<sup>2</sup> Azerbaijan	470 (3.7) ▲	454 (3.3)	466 (4.5) ▲	455 (4.0)	475 (3.2) ▲	463 (3.6)	458 (4.0) ▲	441 (3.9)
<sup>2</sup> † Belgium (French)	513 (3.2) ▲	503 (3.4)	504 (3.6)	503 (3.4)	514 (3.3) ▲	509 (3.0)	502 (3.3)	497 (3.6)
Bulgaria	541 (4.8) ▲	523 (4.7)	538 (4.5) ▲	527 (4.3)	540 (4.5) ▲	525 (4.3)	540 (4.4) ▲	525 (4.3)
<sup>2</sup> Canada	562 (2.0) ▲	544 (2.2)	549 (1.9) ▲	542 (2.0)	549 (1.8) ▲	538 (1.9)	560 (1.8) ▲	548 (2.0)
Chinese Taipei	550 (2.2) ▲	535 (2.3)	572 (2.1) ▲	560 (2.0)	560 (2.2) ▲	544 (2.3)	561 (2.2) ▲	549 (2.3)
Colombia	453 (4.6)	452 (4.6)	438 (5.1)	442 (4.9)	449 (4.6)	452 (4.7)	443 (5.0)	442 (5.2)
<sup>2</sup> Croatia	566 (2.3) ▲	545 (2.5)	555 (1.8) ▲	548 (2.1)	561 (2.2) ▲	547 (2.4)	560 (1.9) ▲	545 (2.2)
Czech Republic	550 (2.8) ▲	539 (2.4)	547 (2.7)	543 (2.3)	552 (3.0) ▲	544 (2.6)	547 (2.5) ▲	541 (2.3)
<sup>2</sup> Denmark	565 (2.0) ▲	545 (2.2)	557 (2.3) ▲	550 (2.1)	563 (2.3) ▲	549 (2.5)	558 (1.9) ▲	548 (1.9)
† England	567 (2.9) ▲	539 (3.4)	560 (3.0) ▲	539 (3.2)	557 (3.0) ▲	535 (3.2)	568 (3.1) ▲	544 (3.2)
Finland	582 (2.4) ▲	556 (2.4)	575 (2.6) ▲	561 (2.6)	579 (2.7) ▲	560 (2.3)	578 (2.4) ▲	557 (2.0)
France	526 (3.3) ▲	517 (2.6)	519 (3.2)	519 (2.9)	531 (3.0) ▲	525 (2.5)	513 (3.5)	510 (2.7)
<sup>1</sup> Georgia	504 (2.5) ▲	480 (4.2)	494 (3.1) ▲	472 (4.1)	497 (2.6) ▲	473 (4.0)	502 (3.0) ▲	481 (4.4)
Germany	550 (2.9) ▲	539 (2.5)	540 (2.8)	536 (2.8)	554 (2.9) ▲	543 (2.8)	540 (2.4) ▲	532 (2.8)
<sup>3</sup> Hong Kong SAR	577 (2.8) ▲	555 (2.7)	582 (2.5) ▲	574 (2.3)	569 (2.4) ▲	556 (2.5)	588 (2.6) ▲	570 (2.7)
Hungary	553 (3.2) ▲	531 (3.3)	540 (3.4) ▲	531 (3.4)	545 (3.1) ▲	530 (3.0)	550 (3.2) ▲	534 (3.1)
Indonesia	428 (4.4) ▲	408 (4.1)	447 (4.7) ▲	430 (4.7)	441 (4.7) ▲	421 (4.1)	430 (4.9) ▲	415 (4.9)
Iran, Islamic Rep. of	469 (4.6) ▲	449 (4.5)	465 (4.2) ▲	445 (4.5)	469 (4.3) ▲	447 (4.5)	466 (4.5) ▲	448 (4.5)
Ireland	569 (3.1) ▲	546 (3.4)	553 (3.1) ▲	545 (3.0)	558 (3.7) ▲	546 (3.1)	562 (2.9) ▲	545 (2.9)
<sup>3</sup> Israel	546 (3.2) ▲	538 (3.7)	542 (3.1)	540 (3.3)	540 (3.3)	536 (3.3)	546 (3.5)	541 (3.8)
Italy	542 (2.4) ▲	535 (2.4)	545 (2.4)	545 (2.4)	541 (2.4)	538 (2.2)	546 (2.4)	542 (2.7)
<sup>1</sup> <sup>2</sup> Lithuania	541 (2.2) ▲	517 (2.2)	534 (2.4) ▲	521 (2.3)	540 (2.4) ▲	521 (2.3)	537 (2.7) ▲	518 (2.3)
Malta	482 (2.1) ▲	459 (2.7)	491 (1.9) ▲	478 (2.1)	489 (2.3) ▲	470 (2.4)	483 (2.6) ▲	466 (2.2)
✳ Morocco	314 (4.3) ▲	285 (4.1)	335 (4.3) ▲	308 (4.0)	336 (3.7) ▲	314 (3.4)	307 (4.6) ▲	271 (4.8)
† Netherlands	549 (2.4) ▲	540 (2.6)	549 (2.4)	545 (2.2)	551 (2.4)	547 (2.5)	549 (2.2) ▲	538 (2.2)
New Zealand	546 (2.7) ▲	521 (3.3)	537 (2.4) ▲	522 (2.8)	536 (2.4) ▲	519 (2.8)	545 (2.5) ▲	526 (2.5)
† Northern Ireland	575 (2.2) ▲	552 (3.5)	561 (3.1) ▲	549 (3.4)	563 (2.8) ▲	548 (3.4)	571 (2.8) ▲	553 (3.3)
‡ Norway	516 (3.5) ▲	498 (2.6)	511 (2.5) ▲	499 (3.2)	518 (2.3) ▲	503 (2.5)	508 (2.5) ▲	495 (3.7)
Ⓜ Oman	400 (3.1) ▲	360 (3.3)	425 (3.1) ▲	383 (3.7)	414 (2.8) ▲	376 (2.8)	404 (3.5) ▲	361 (3.4)
Poland	542 (2.8) ▲	520 (2.4)	523 (3.3)	516 (3.2)	534 (2.7) ▲	519 (2.7)	531 (2.7) ▲	519 (2.5)
Portugal	548 (3.1) ▲	528 (2.9)	549 (3.2) ▲	539 (2.7)	547 (3.1) ▲	532 (2.9)	549 (3.2) ▲	535 (2.9)
<sup>2</sup> Qatar	431 (4.7) ▲	400 (4.0)	449 (4.9) ▲	424 (4.2)	439 (4.7) ▲	410 (3.8)	440 (4.7) ▲	412 (4.1)
Romania	512 (4.8) ▲	497 (4.3)	508 (5.1) ▲	493 (4.8)	506 (4.9) ▲	494 (4.7)	512 (4.9) ▲	494 (4.9)
Russian Federation	578 (2.8) ▲	557 (3.1)	577 (2.9) ▲	563 (2.9)	574 (3.2) ▲	557 (3.0)	581 (2.7) ▲	561 (3.0)
Saudi Arabia	449 (3.1) ▲	393 (8.5)	464 (3.9) ▲	414 (8.2)	457 (3.3) ▲	408 (8.8)	453 (3.7) ▲	393 (8.3)
<sup>2</sup> Singapore	578 (3.9) ▲	556 (3.8)	576 (3.5) ▲	563 (3.6)	573 (3.5) ▲	557 (3.7)	579 (3.6) ▲	562 (3.7)
Slovak Republic	547 (3.6) ▲	533 (2.9)	533 (3.3) ▲	528 (3.1)	538 (3.4) ▲	531 (3.1)	542 (3.2) ▲	530 (2.8)
Slovenia	543 (2.7) ▲	523 (3.2)	534 (2.0) ▲	522 (2.8)	541 (2.1) ▲	524 (3.0)	538 (2.1) ▲	522 (3.1)
Spain	520 (2.5) ▲	511 (2.5)	512 (2.2)	512 (2.7)	518 (2.3)	514 (2.6)	513 (2.5) ▲	507 (2.6)
Sweden	557 (3.1) ▲	538 (2.6)	543 (2.7) ▲	531 (3.1)	549 (2.6) ▲	537 (2.6)	549 (2.5) ▲	532 (2.6)
Trinidad and Tobago	486 (4.8) ▲	450 (4.5)	488 (4.3) ▲	460 (4.2)	490 (4.3) ▲	459 (4.4)	480 (4.5) ▲	448 (4.8)
United Arab Emirates	442 (3.0) ▲	413 (3.6)	465 (2.7) ▲	439 (3.6)	452 (3.1) ▲	426 (3.3)	453 (2.9) ▲	423 (3.5)
<sup>2</sup> United States	570 (2.3) ▲	555 (1.9)	556 (1.9) ▲	549 (1.9)	554 (1.8) ▲	544 (1.7)	568 (2.0) ▲	557 (1.9)
International Avg.	522 (0.5) ▲	502 (0.5)	519 (0.5) ▲	507 (0.5)	521 (0.5) ▲	505 (0.5)	519 (0.5) ▲	502 (0.5)

▲ Average significantly higher than other gender

✳ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.

Ⓜ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.

See Appendix C.2 for target population coverage notes 1, 2, and 3. See Appendix C.5 for sampling guidelines and sampling participation notes † and ‡.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

**Exhibit 3.7: Achievement in Reading Purposes and Comprehension Processes by Gender (Continued)**

Country	Reading Purposes				Comprehension Processes				
	Literary		Informational		Retrieving and Straightforward Inferencing		Interpreting, Integrating, and Evaluating		
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	
<b>Sixth Grade Participants</b>									
Botswana	396 (5.2) ⬆	371 (5.9)	471 (3.8) ⬆	441 (3.8)	431 (4.2) ⬆	401 (5.0)	432 (4.2) ⬆	409 (4.5)	
Honduras	457 (6.0) ⬆	440 (5.3)	452 (5.6) ⬆	443 (4.7)	457 (5.5) ⬆	447 (5.1)	450 (5.5) ⬆	435 (5.2)	
<sup>1 †</sup> Kuwait	440 (6.2) ⬆	391 (7.1)	447 (7.3) ⬆	390 (7.7)	444 (5.8) ⬆	397 (6.4)	442 (6.9) ⬆	381 (7.8)	
Morocco	434 (4.1) ⬆	400 (5.1)	450 (3.9) ⬆	418 (4.7)	447 (3.7) ⬆	415 (4.6)	431 (3.8) ⬆	394 (5.0)	
<b>Benchmarking Participants<sup>⊖</sup></b>									
<sup>2</sup> Alberta, Canada	561 (3.4) ⬆	544 (3.2)	547 (3.0) ⬆	542 (3.1)	547 (3.1) ⬆	537 (3.1)	560 (3.4) ⬆	549 (3.4)	
<sup>2</sup> Ontario, Canada	567 (3.5) ⬆	549 (2.9)	553 (3.7) ⬆	545 (2.7)	551 (3.2) ⬆	539 (2.8)	566 (3.4) ⬆	553 (2.7)	
Quebec, Canada	549 (2.7) ⬆	529 (2.2)	540 (2.8)	533 (2.7)	544 (2.6) ⬆	532 (2.3)	545 (2.9) ⬆	531 (2.4)	
Maltese - Malta	473 (2.6) ⬆	443 (2.6)	464 (2.0) ⬆	447 (3.1)	473 (2.6) ⬆	449 (3.1)	464 (2.1) ⬆	439 (2.4)	
<sup>Ⓜ</sup> Eng/Afr (5) - RSA	428 (7.9) ⬆	400 (9.4)	443 (7.1) ⬆	418 (8.1)	435 (7.7) ⬆	407 (8.8)	437 (7.5) ⬆	407 (8.4)	
Andalusia, Spain	524 (2.8) ⬆	512 (2.8)	514 (2.5) ⬆	511 (2.8)	521 (2.5) ⬆	514 (2.7)	515 (2.7) ⬆	506 (3.0)	
Abu Dhabi, UAE	432 (5.6) ⬆	395 (6.7)	455 (5.2) ⬆	420 (6.3)	441 (5.5) ⬆	407 (5.9)	444 (5.5) ⬆	406 (6.1)	
Dubai, UAE	474 (4.1) ⬆	458 (4.2)	494 (3.6) ⬆	483 (4.2)	484 (4.0) ⬆	472 (3.7)	482 (4.3) ⬆	467 (3.6)	
<sup>1 † 3</sup> Florida, US	587 (4.0) ⬆	567 (3.5)	571 (3.3) ⬆	557 (3.0)	571 (3.7) ⬆	556 (3.2)	581 (3.4) ⬆	567 (3.0)	

<sup>⊖</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

⬆ Average significantly higher than other gender

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 3.8: Achievement in Reading Purposes and Comprehension Processes by Gender**

Country	Reading Purposes				Comprehension Processes			
	Literary		Informational		Retrieving		Inferencing and Integrating	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Botswana	478 (3.8) ⬆	441 (3.6)	486 (3.7) ⬆	447 (4.1)	485 (3.7) ⬆	443 (3.8)	481 (3.7) ⬆	447 (3.7)
Colombia	580 (3.4)	576 (4.0)	577 (3.9)	575 (4.1)	580 (4.2)	575 (4.1)	579 (3.7)	576 (4.1)
South Africa	479 (4.1) ⬆	447 (4.5)	472 (4.0) ⬆	444 (4.1)	477 (3.8) ⬆	445 (4.4)	473 (3.9) ⬆	446 (4.4)

⬆ Average significantly higher than other gender

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.





# Chapter 4



## Home Environment Support for Reading Achievement

A supportive home environment and an early start are crucial in shaping children's reading literacy. In PIRLS 2011, at the fourth grade, sixth grade, and for the benchmarking participants and prePIRLS, students had higher reading achievement if their parents reported that they themselves liked reading, often engaged in early literacy activities with their children, had more home resources for learning, and that their children had attended preprimary education. Children also had higher achievement if their parents reported that their children started school able to do early literacy tasks (e.g., read sentences and write some words).

Considerable research supports the fundamental importance of a supportive home environment in shaping children’s reading literacy. Internationally, IEA studies over the past 20 years, beginning with the 1991 Reading Literacy Study and through three cycles of PIRLS, have found a strong positive relationship between students’ reading achievement at the fourth grade and home experiences that foster literacy learning.

This chapter presents the PIRLS 2011 reading achievement results in relation to parents’ reports about their children’s home resources for learning and early literacy experiences. The parents’ data were collected using the *PIRLS 2011 Learning to Read Survey* in which students’ parents or primary caregivers were asked to provide information about their child’s experiences in learning to read.

### *Home Resources for Learning*

PIRLS 2011 asked students’ parents to report on the availability of three key home resources highly related to reading achievement:

- ◆ Parents’ education;
- ◆ Parents’ occupation; and
- ◆ Number of children’s books in the home.
- ◆ In addition, students were asked about:
  - ◆ Number of books in the home; and
  - ◆ Availability of two study supports—an Internet connection and their own room.

Research consistently shows a strong positive relationship between achievement and socioeconomic status (SES), or indicators of socioeconomic status such as parents’ or caregivers’ level of education or occupation. Both PIRLS and PISA have found strong positive relationships between level of parents’ education and occupation and their children’s educational attainment. In general, higher levels of education can lead to careers in higher paying professions, higher socioeconomic status, and more home resources. Family income also has been shown to have a powerful influence on students’ achievement in reading and mathematics (Dahl & Lochner, 2005). However, the benefits of higher levels of parents’ education can extend to having more positive beliefs and higher expectations toward educational achievement transfer to their children. Availability of reading material in the home likewise is strongly related



to achievement in mathematics and science as well as in reading. IEA's TIMSS studies have consistently shown that students with a large number of books in the home have higher achievement in mathematics and science.

Exhibit 4.1 presents the results for the PIRLS 2011 Home Resources for Learning scale, which was created based on parents' and students' reports about the five types of home resources described above. The second page of the exhibit provides detail about the questions forming the scale and the categorization of responses. Students were scored according to the availability of the five home supports for learning, with **Many Resources** corresponding to more than 100 books in the home, having both their own room and an Internet connection, more than 25 children's books, at least one parent having completed university, and one with a professional occupation, on average. **Few Resources** corresponds, on average, to having 25 or fewer books, neither of the home study supports (own room or Internet), 10 or fewer children's books, neither parent having gone beyond upper secondary school, and neither had a business, clerical, or professional occupation.

Countries are ordered by the percentage of students in the **Many Resources** category, with the fourth grade countries on the first page of the exhibit and the sixth grade, benchmarking, and prePIRLS participants on the second page. Internationally, on average, almost three-quarters of fourth grade students (73%) were assigned to the **Some Resources** category. Eighteen percent, on average, were in the **Many Resources** category and nine percent internationally were in the **Few Resources** category, with a 123-point difference in their average reading achievement (571 vs. 448). Compared to the fourth grade countries, students had fewer home resources in the countries participating at the sixth grade and in prePIRLS.

Exhibit 4.2 provides supporting detail about the availability of the specific home resources included in the Home Resources for Learning scale. Across the countries participating in PIRLS 2011 at the fourth grade, on average, 31 percent of the students had at least one parent that had earned a university degree. Similarly, 36 percent had at least one parent in a professional occupation. PIRLS routinely shows that both number of books in the home and number of children's books in the home are related to higher achievement. On average, across the countries participating at the fourth grade, the majority of students (59%) were from homes with more than 25 children's books, and approximately one-fourth (27%) were from homes with more than 100 books in total. Interestingly, similar percentages of fourth grade students had computer

## Exhibit 4.1: Home Resources for Learning

Reported by Parents, except Number of Books and Study Supports Reported by Students

Students were scored according to their own and their parents' responses concerning the availability of five resources on the *Home Resources for Learning* scale. Students with **Many Resources** had a score of at least 11.9, which is the point on the scale corresponding to students reporting they had more than 100 books in the home and two home study supports, and parents reporting that they had more than 25 children's books in the home, that at least one parent had finished university, and that at least one parent had a professional occupation, on average. Students with **Few Resources** had a score no higher than 7.3, which is the scale point corresponding to students reporting that they had 25 or fewer books in the home and neither of the two home study supports, and parents reporting that they had 10 or fewer children's books in the home, that neither parent had gone beyond upper-secondary education, and that neither parent was a small business owner or had a clerical or professional occupation, on average. All other students were assigned to the **Some Resources** category.

Country	Many Resources		Some Resources		Few Resources		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Norway	42 (1.6)	531 (2.6)	57 (1.6)	494 (2.0)	0 (0.1)	~ ~	11.5 (0.05)
Australia	s 41 (1.5)	575 (3.2)	59 (1.5)	520 (2.5)	0 (0.2)	~ ~	11.5 (0.06)
Sweden	39 (1.7)	575 (2.2)	61 (1.7)	529 (1.9)	1 (0.2)	~ ~	11.4 (0.05)
Denmark	38 (1.2)	581 (1.8)	61 (1.2)	541 (1.9)	1 (0.2)	~ ~	11.3 (0.05)
New Zealand	s 37 (1.4)	592 (2.4)	61 (1.3)	528 (2.4)	2 (0.3)	~ ~	11.3 (0.05)
Canada	r 35 (1.2)	580 (2.4)	65 (1.1)	540 (1.5)	0 (0.1)	~ ~	11.3 (0.04)
Finland	33 (1.3)	595 (2.0)	67 (1.3)	557 (1.9)	0 (0.1)	~ ~	11.2 (0.04)
Northern Ireland	s 30 (1.6)	607 (4.2)	68 (1.6)	560 (3.2)	2 (0.3)	~ ~	10.9 (0.07)
Netherlands	s 27 (1.9)	578 (2.8)	72 (1.9)	546 (2.0)	1 (0.2)	~ ~	10.9 (0.07)
Belgium (French)	27 (1.8)	549 (3.0)	70 (1.5)	495 (3.0)	3 (0.5)	457 (7.3)	10.7 (0.08)
Ireland	27 (1.2)	601 (2.4)	71 (1.2)	542 (2.0)	2 (0.3)	~ ~	10.8 (0.06)
Germany	r 24 (1.5)	591 (2.7)	75 (1.5)	538 (2.0)	2 (0.3)	~ ~	10.7 (0.07)
Singapore	24 (0.9)	617 (3.3)	74 (0.9)	559 (3.3)	2 (0.3)	~ ~	10.7 (0.03)
France	23 (1.4)	567 (2.2)	74 (1.3)	511 (2.4)	2 (0.4)	~ ~	10.6 (0.07)
Israel	r 22 (1.2)	602 (3.9)	75 (1.2)	542 (2.7)	3 (0.4)	456 (13.4)	10.8 (0.06)
Hungary	21 (1.5)	601 (2.9)	69 (1.4)	538 (2.1)	11 (1.1)	464 (8.5)	10.1 (0.10)
Spain	19 (1.2)	552 (3.3)	76 (1.1)	511 (2.3)	5 (0.4)	475 (6.5)	10.3 (0.05)
Chinese Taipei	18 (1.0)	591 (2.6)	76 (1.0)	548 (1.8)	6 (0.5)	515 (5.1)	10.2 (0.06)
Czech Republic	18 (1.1)	584 (3.1)	81 (1.0)	540 (2.2)	1 (0.2)	~ ~	10.5 (0.05)
Slovenia	17 (0.8)	577 (3.0)	82 (0.8)	524 (1.8)	1 (0.2)	~ ~	10.4 (0.04)
Austria	17 (1.0)	572 (2.7)	82 (0.9)	524 (1.9)	2 (0.3)	~ ~	10.4 (0.06)
Russian Federation	16 (1.0)	611 (3.7)	82 (1.1)	562 (2.7)	3 (0.4)	520 (7.6)	10.4 (0.05)
Portugal	16 (1.0)	578 (3.3)	75 (1.0)	541 (2.3)	9 (0.8)	508 (6.6)	9.9 (0.06)
Malta	15 (0.6)	553 (3.3)	84 (0.6)	476 (1.8)	1 (0.2)	~ ~	10.3 (0.02)
Poland	15 (1.0)	584 (3.4)	79 (1.0)	521 (1.7)	6 (0.6)	467 (6.3)	10.0 (0.06)
Slovak Republic	13 (0.8)	586 (3.5)	81 (1.1)	536 (1.9)	6 (1.0)	466 (9.0)	10.0 (0.06)
Qatar	r 12 (0.9)	502 (8.7)	84 (0.9)	427 (3.6)	4 (0.4)	348 (10.3)	10.2 (0.05)
Georgia	12 (1.0)	535 (4.0)	80 (1.2)	488 (2.9)	8 (1.0)	441 (8.0)	9.9 (0.07)
Hong Kong SAR	12 (1.0)	589 (4.3)	80 (0.8)	573 (2.3)	8 (0.7)	556 (4.7)	9.8 (0.07)
Bulgaria	11 (1.0)	593 (3.5)	71 (1.6)	543 (3.0)	18 (1.9)	466 (10.0)	9.4 (0.11)
Lithuania	11 (0.9)	583 (3.5)	83 (1.0)	527 (1.9)	6 (0.5)	474 (6.2)	9.8 (0.05)
United Arab Emirates	10 (0.6)	533 (4.9)	84 (0.7)	437 (2.2)	6 (0.4)	378 (5.2)	9.9 (0.03)
Trinidad and Tobago	9 (1.1)	546 (6.5)	85 (1.1)	473 (3.7)	6 (0.6)	411 (6.8)	9.8 (0.06)
Italy	8 (0.7)	588 (4.6)	85 (0.7)	544 (2.1)	7 (0.6)	504 (4.9)	9.7 (0.05)
Croatia	8 (0.6)	597 (4.2)	88 (0.7)	552 (1.7)	5 (0.6)	514 (7.0)	9.7 (0.05)
Romania	7 (0.7)	593 (5.2)	67 (1.8)	518 (3.4)	26 (1.7)	442 (7.1)	8.7 (0.09)
Iran, Islamic Rep. of	4 (0.5)	549 (4.8)	57 (1.7)	477 (2.8)	39 (1.9)	422 (3.6)	8.1 (0.09)
Saudi Arabia	4 (0.6)	480 (8.8)	79 (1.2)	437 (4.0)	17 (1.2)	398 (9.3)	9.0 (0.07)
Oman	3 (0.3)	469 (7.9)	75 (0.8)	402 (3.0)	23 (0.8)	357 (4.1)	8.7 (0.04)
Colombia	1 (0.3)	~ ~	55 (2.1)	469 (5.1)	44 (2.2)	426 (4.3)	7.7 (0.10)
Morocco	s 1 (0.2)	~ ~	46 (2.1)	343 (4.5)	53 (2.1)	306 (7.2)	7.2 (0.10)
Azerbaijan	1 (0.1)	~ ~	77 (1.3)	468 (3.4)	22 (1.3)	454 (4.6)	8.5 (0.04)
Indonesia	0 (0.1)	~ ~	55 (2.7)	442 (4.3)	44 (2.7)	416 (4.4)	7.6 (0.10)
International Avg.	18 (0.2)	571 (0.7)	73 (0.2)	510 (0.4)	9 (0.1)	448 (1.4)	

England and the United States did not administer the Home Questionnaire.

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.



**Exhibit 4.2: Components of the Home Resources for Learning Scale\***

Columns 1-3 Reported by Parents and Columns 4-5 Reported by Students

Country	Percent of Students with								
	At Least One Parent with a University Degree or Higher	At Least One Parent in a Professional Occupation**	More than 25 Children's Books in Their Home	More than 100 Books in Their Home	Own Room and Internet Connection in Home				
Australia	s	42 (1.5)	s	54 (1.5)	s	89 (1.0)	41 (1.0)	74 (1.0)	
Austria		21 (1.1)		27 (1.0)		76 (1.8)	28 (1.3)	70 (1.0)	
Azerbaijan		25 (1.1)		18 (0.9)		15 (1.1)	8 (0.7)	10 (0.6)	
Belgium (French)	r	50 (1.9)	r	38 (1.7)		75 (1.5)	32 (1.7)	59 (1.3)	
Bulgaria		29 (1.6)		25 (1.4)		43 (1.8)	23 (1.3)	55 (1.6)	
Canada	r	45 (1.4)	r	56 (1.0)	r	84 (0.7)	35 (0.9)	77 (0.6)	
Chinese Taipei		23 (1.3)		35 (1.1)		59 (1.3)	30 (1.1)	53 (0.9)	
Colombia		15 (1.5)	r	18 (1.8)		9 (0.8)	6 (0.5)	20 (1.5)	
Croatia		18 (1.0)		29 (1.2)		43 (1.1)	16 (0.8)	64 (1.2)	
Czech Republic		23 (1.3)		35 (1.3)		79 (0.9)	34 (1.1)	58 (1.2)	
Denmark		56 (1.2)		57 (1.3)		81 (0.9)	37 (1.1)	90 (0.8)	
England							36 (1.6)	73 (1.1)	
Finland		42 (1.4)		50 (1.2)		88 (0.7)	38 (1.3)	79 (1.0)	
France		30 (1.6)		39 (1.5)		75 (1.3)	33 (1.3)	64 (1.2)	
Georgia		36 (1.3)		31 (1.1)		38 (1.5)	35 (1.4)	35 (1.3)	
Germany	r	28 (1.6)	r	30 (1.3)	r	81 (1.1)	35 (1.5)	71 (1.0)	
Hong Kong SAR		18 (1.5)		28 (1.6)		52 (1.7)	25 (1.2)	56 (1.3)	
Hungary		26 (1.6)		27 (1.4)		68 (1.4)	33 (1.5)	62 (1.4)	
Indonesia		10 (1.2)	r	8 (1.2)		15 (0.9)	5 (0.5)	10 (0.8)	
Iran, Islamic Rep. of		15 (1.4)		13 (1.1)		25 (1.2)	14 (0.8)	23 (1.4)	
Ireland		33 (1.3)		43 (1.4)		78 (1.1)	33 (1.3)	72 (1.0)	
Israel	r	46 (1.6)	r	50 (1.7)	r	69 (1.3)	34 (1.4)	--	
Italy		20 (1.2)		25 (1.1)		55 (1.1)	23 (1.0)	38 (0.8)	
Lithuania		30 (1.4)		29 (1.2)		46 (1.2)	15 (0.8)	48 (1.0)	
Malta	r	18 (0.6)	r	32 (0.9)		87 (0.5)	24 (0.7)	67 (0.7)	
Morocco	r	11 (0.9)	s	9 (0.7)	r	14 (0.8)	r	9 (0.6)	16 (0.9)
Netherlands	s	41 (1.7)	s	48 (1.4)	s	76 (1.3)	27 (1.6)	87 (0.8)	
New Zealand	s	39 (1.6)	s	54 (1.3)	s	87 (0.8)	38 (1.1)	68 (0.9)	
Northern Ireland	s	35 (1.7)	s	49 (1.6)	s	83 (1.2)	31 (1.4)	70 (1.1)	
Norway		58 (2.0)		66 (1.6)		86 (1.2)	36 (1.4)	87 (0.8)	
Oman		22 (0.7)	r	33 (0.8)		19 (0.6)	22 (0.9)	19 (0.7)	
Poland		30 (1.4)		30 (1.3)		65 (1.0)	24 (0.9)	52 (1.0)	
Portugal		25 (1.1)		33 (1.4)		63 (1.5)	21 (1.1)	63 (1.3)	
Qatar	r	59 (1.5)	r	58 (1.5)		36 (1.1)	27 (0.9)	52 (1.1)	
Romania		13 (1.1)		15 (1.2)		33 (1.4)	15 (1.0)	42 (1.5)	
Russian Federation		46 (1.4)		41 (1.2)		65 (1.0)	25 (0.9)	40 (1.6)	
Saudi Arabia		35 (1.5)		36 (1.4)		17 (1.0)	20 (1.2)	28 (1.4)	
Singapore		33 (0.9)		56 (0.7)		72 (0.8)	31 (0.9)	49 (0.7)	
Slovak Republic		26 (1.2)		31 (1.2)		58 (1.3)	26 (1.0)	47 (1.1)	
Slovenia		24 (1.1)		40 (1.1)		69 (1.1)	27 (1.0)	67 (1.2)	
Spain		33 (1.4)		34 (1.4)		69 (1.1)	30 (1.3)	65 (1.0)	
Sweden	r	43 (1.7)		59 (1.5)		86 (0.8)	39 (1.4)	84 (0.8)	
Trinidad and Tobago	r	14 (1.2)	r	27 (1.4)		61 (1.3)	26 (1.2)	36 (1.1)	
United Arab Emirates		54 (0.8)	r	49 (0.9)		33 (0.8)	22 (0.6)	42 (0.8)	
United States							28 (0.8)	64 (0.7)	
International Avg.		31 (0.2)		36 (0.2)		59 (0.2)	27 (0.2)	55 (0.2)	

\* Data reported in columns 1-3 were from the Home Questionnaire completed by parents; England and the United States did not administer the Home Questionnaire.

\*\* Includes corporate manager or senior official, professional, and technician or associate professional.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (-) indicates comparable data not available.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

An "x" indicates data are available for less than 50% of students.

**Exhibit 4.2: Components of the Home Resources for Learning Scale\* (Continued)**

Country	Percent of Students with								
	At Least One Parent with a University Degree or Higher	At Least One Parent in a Professional Occupation**	More than 25 Children's Books in Their Home	More than 100 Books in Their Home	Own Room and Internet Connection in Home				
<b>Sixth Grade Participants</b>									
Botswana	s	10 (1.5)	s	22 (1.7)	14 (0.8)	10 (0.7)	11 (1.0)		
Honduras	s	9 (2.4)	s	13 (1.8)	11 (0.9)	6 (0.6)	17 (1.5)		
Kuwait	s	37 (2.1)	s	52 (1.9)	s	18 (1.1)	r	16 (0.8)	56 (1.2)
Morocco	r	12 (0.8)	s	9 (0.5)	14 (0.7)	6 (0.5)	16 (1.0)		
<b>Benchmarking Participants<sup>◇</sup></b>									
Alberta, Canada	r	43 (2.2)	s	54 (1.8)	r	88 (1.2)	37 (1.5)	77 (1.1)	
Ontario, Canada	r	47 (1.9)	r	57 (1.6)	r	84 (1.2)	37 (1.7)	74 (1.1)	
Quebec, Canada		45 (2.0)		55 (1.4)		78 (1.1)	28 (1.2)	82 (1.0)	
Maltese - Malta	r	18 (0.6)	r	31 (0.7)		87 (0.6)	15 (0.6)	67 (0.8)	
Eng/Afr (5) - RSA	r	18 (1.9)	s	33 (2.2)	r	22 (1.9)	15 (1.4)	29 (1.5)	
Andalusia, Spain		25 (1.4)		28 (1.3)		61 (1.4)	25 (1.2)	62 (1.0)	
Abu Dhabi, UAE		52 (1.8)		47 (1.8)		29 (1.7)	22 (1.1)	41 (1.5)	
Dubai, UAE		67 (1.0)	r	64 (0.8)		50 (0.6)	26 (0.6)	49 (0.8)	
Florida, US							21 (1.2)	66 (1.3)	

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Percent of Students with								
	At Least One Parent with a University Degree or Higher	At Least One Parent in a Professional Occupation**	More than 25 Children's Books in Their Home	More than 100 Books in Their Home	Own Room and Internet Connection in Home				
Botswana	s	9 (1.6)	s	21 (1.8)	r	14 (0.8)	16 (1.1)	12 (1.0)	
Colombia		15 (1.5)	r	18 (1.9)		9 (0.8)	6 (0.5)	20 (1.4)	
South Africa	s	10 (1.0)	x x		r	17 (1.0)	r	13 (0.9)	17 (0.9)

supports for studying and access to a supply of children's books. Students were asked about whether they had their own room and an Internet connection at home, and more than half (55%) reported having both of these.

### *Students Spoke the Language of the Test Before Starting School*

Because learning to read is dependent on children's early language experiences, the language or languages spoken at home and how they are used are important factors in reading literacy development. As formal reading instruction begins, children are likely to be at an initial disadvantage if their knowledge of the language of instruction is substantially below the expected level for their age. As would be expected, students still learning the language of instruction generally struggle even more in content areas with higher language demand such as reading.

Exhibit 4.3 shows parents' reports about whether students spoke the language of the test before starting school. For students in the fourth grade, 92 percent across countries, on average, spoke the language of the test before starting school. However, the eight percent who did not speak the language of the test before starting school had much lower average achievement on PIRLS 2011 (479 vs. 516). The results for the sixth grade and benchmarking students as well as for prePIRLS show that only about one-fourth of the students in Botswana spoke the language of the test before starting school. Just over half (56%) of the fifth-grade South African students in schools with instruction in English or Afrikaans spoke those languages before starting school.

### *Parents Like Reading*

For most children, the home provides modeling and direct guidance in effective literacy practices. Young children who see adults and older children reading or using texts in different ways are learning to appreciate and use printed materials. Research has shown that children socialized in reading retain or even increase their advantage in language performance compared to their classmates (Kloostermann, Notten, Tolsma, & Kraaykamp, 2011). Beyond modeling, parents or other caregivers can directly support reading development by expressing positive opinions about reading and literacy. Promoting reading as a valuable and meaningful activity can motivate children to read.

Exhibit 4.4 presents the PIRLS 2011 Parents Like Reading scale. Students were scored on the Parents Like Reading scale according to their parents' degree of agreement with seven statements about reading and how often they read for enjoyment. Parents who **Like** reading "agreed a lot" with four of the statements

and at least “a little” with the other three statements, on average, as well as reading daily for enjoyment (see the second page of the exhibit). Parents who **Do Not Like** reading “disagreed a little” with four of the statements, “agreed a little” with the other three, and report only monthly reading for enjoyment.

Internationally, on average, approximately one-third of the fourth grade students had parents that **Like** reading and another 57 percent had parents that **Somewhat Like** reading. In particular, students whose parents **Like** reading had substantially higher average reading achievement than the eleven percent of students whose parents reported they **Do Not Like** reading (535 vs. 487). In general, this pattern held across the sixth grade, the benchmarking participants, and prePIRLS. The majority of students in several countries had parents who **Like** reading, including Sweden, New Zealand, Northern Ireland, and Denmark.

### *Parents’ Educational Expectations for Their Children*

Studies over the past several years have found a positive relationship between parental aspirations for their children and academic achievement. For example, researchers studying longitudinal effects in the United States found that more communication between parents and students and higher parents’ aspirations resulted in higher student achievement (Hong & Ho, 2005). Across four ethnic groups, parents’ educational aspiration was the most powerful predictor in increasing student educational aspiration; ultimately, the greater the student’s own educational expectations, the greater the student’s academic achievement.

Exhibit 4.5 contains parents’ reports about their educational expectations for their children according to four education levels from highest to lowest—postgraduate degree, university degree, post-secondary, and upper secondary (or lower). Across the PIRLS 2011 participants, parents have very high educational expectations for their children (to the extent that some parents may have misunderstood the question). Nearly one-third (31%) of the fourth grade students have parents who expect them to attain a postgraduate degree, and another third (34%) are expected to graduate from university. Still, there was considerable variation in results across and within countries.

Consistent with other research, the results show a positive relationship between parents’ aspirations and students average reading achievement. Across the fourth grade countries, the students had higher average reading achievement with each higher education level of expectation to the extent that there was a difference of 80 scale score points (nearly one standard deviation) between students whose parents expected a postgraduate degree at one end

Reported by Parents

Country	Spoke the Language		Did Not Speak the Language		
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Australia	s	95 (0.6)	542 (2.7)	5 (0.6)	538 (12.8)
Austria		93 (0.6)	533 (1.9)	7 (0.6)	490 (5.5)
Azerbaijan		96 (0.9)	465 (2.9)	4 (0.9)	441 (13.5)
Belgium (French)		95 (0.9)	509 (2.7)	5 (0.9)	467 (8.4)
Bulgaria		88 (1.5)	543 (3.2)	12 (1.5)	460 (15.0)
Canada	r	91 (0.6)	554 (1.6)	9 (0.6)	549 (3.4)
Chinese Taipei		97 (0.3)	555 (1.8)	3 (0.3)	517 (7.1)
Colombia		97 (0.4)	450 (4.2)	3 (0.4)	441 (11.6)
Croatia		100 (0.1)	553 (1.8)	0 (0.1)	~ ~
Czech Republic		99 (0.3)	547 (2.1)	1 (0.3)	~ ~
Denmark		98 (0.3)	556 (1.6)	2 (0.3)	~ ~
Finland		99 (0.2)	570 (1.8)	1 (0.2)	~ ~
France		98 (0.3)	523 (2.3)	2 (0.3)	~ ~
Georgia		98 (0.7)	490 (2.8)	2 (0.7)	~ ~
Germany	r	97 (0.3)	548 (2.2)	3 (0.3)	504 (5.5)
Hong Kong SAR		97 (0.4)	572 (2.3)	3 (0.4)	569 (5.9)
Hungary		99 (0.2)	542 (3.0)	1 (0.2)	~ ~
Indonesia		67 (2.2)	435 (4.4)	33 (2.2)	419 (4.8)
Iran, Islamic Rep. of		80 (1.5)	470 (2.7)	20 (1.5)	408 (5.6)
Ireland		93 (0.7)	558 (1.9)	7 (0.7)	519 (6.4)
Israel	r	97 (0.3)	548 (2.9)	3 (0.3)	534 (11.1)
Italy		94 (0.5)	546 (2.2)	6 (0.5)	515 (6.6)
Lithuania		98 (0.6)	530 (2.0)	2 (0.6)	~ ~
Malta		45 (0.9)	513 (2.2)	55 (0.9)	459 (2.1)
Morocco		83 (1.8)	314 (4.3)	17 (1.8)	301 (8.8)
Netherlands	s	97 (0.4)	554 (2.1)	3 (0.4)	531 (8.4)
New Zealand	s	94 (0.5)	552 (2.0)	6 (0.5)	500 (9.9)
Northern Ireland	s	98 (0.4)	573 (3.0)	2 (0.4)	~ ~
Norway		97 (0.5)	509 (2.0)	3 (0.5)	483 (10.5)
Oman		94 (0.3)	391 (3.2)	6 (0.3)	413 (5.9)
Poland		99 (0.1)	526 (2.1)	1 (0.1)	~ ~
Portugal		98 (0.3)	543 (2.5)	2 (0.3)	~ ~
Qatar	r	73 (1.7)	428 (4.9)	27 (1.7)	458 (6.8)
Romania		97 (1.1)	503 (4.3)	3 (1.1)	462 (11.2)
Russian Federation		96 (1.0)	570 (2.5)	4 (1.0)	538 (14.0)
Saudi Arabia		73 (1.4)	436 (4.6)	27 (1.4)	419 (5.8)
Singapore		82 (0.5)	575 (3.4)	18 (0.5)	542 (4.2)
Slovak Republic		98 (0.6)	538 (2.3)	2 (0.6)	~ ~
Slovenia		97 (0.3)	533 (1.8)	3 (0.3)	475 (7.1)
Spain		87 (0.8)	519 (2.4)	13 (0.8)	489 (5.0)
Sweden	r	95 (0.4)	548 (2.1)	5 (0.4)	493 (6.4)
Trinidad and Tobago		94 (0.4)	476 (3.9)	6 (0.4)	459 (8.8)
United Arab Emirates		77 (0.8)	437 (2.3)	23 (0.8)	458 (3.6)
International Avg.		92 (0.1)	516 (0.4)	8 (0.1)	479 (1.5)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

England and the United States did not administer the Home Questionnaire.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.



Country	Spoke the Language		Did Not Speak the Language	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>				
Botswana	26 (1.3)	458 (7.0)	74 (1.3)	410 (3.7)
Honduras	97 (0.5)	450 (4.8)	3 (0.5)	416 (18.4)
Kuwait	74 (1.2)	426 (7.1)	26 (1.2)	424 (7.4)
Morocco	83 (1.6)	430 (4.5)	17 (1.6)	414 (6.2)
<b>Benchmarking Participants<sup>o</sup></b>				
Alberta, Canada	92 (0.8)	556 (2.9)	8 (0.8)	546 (7.9)
Ontario, Canada	87 (1.2)	557 (2.6)	13 (1.2)	553 (5.9)
Quebec, Canada	94 (0.7)	541 (2.2)	6 (0.7)	534 (4.8)
Maltese - Malta	88 (0.6)	468 (1.5)	12 (0.6)	420 (5.4)
Eng/Afr (5) - RSA	56 (2.8)	457 (7.7)	44 (2.8)	373 (9.7)
Andalusia, Spain	97 (0.4)	518 (2.2)	3 (0.4)	498 (7.9)
Abu Dhabi, UAE	81 (1.4)	421 (4.8)	19 (1.4)	450 (6.9)
Dubai, UAE	68 (0.7)	485 (2.2)	32 (0.7)	475 (3.3)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Spoke the Language		Did Not Speak the Language	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	27 (1.5)	494 (7.2)	73 (1.5)	458 (3.2)
Colombia	97 (0.4)	578 (3.5)	3 (0.4)	563 (9.9)
South Africa	79 (1.5)	465 (4.3)	21 (1.5)	462 (5.9)

## Exhibit 4.4: Parents Like Reading

Reported by Parents

Students were scored on the *Parents Like Reading* scale according to their parents' responses to seven statements about reading and how often they read for enjoyment. Students whose parents **Like** reading had a score on the scale of at least 10.9, which corresponds to their parents "agreeing a lot" with four of the seven statements and "agreeing a little" with the other three, as well as reading for enjoyment "every day or almost every day," on average. Students whose parents **Do Not Like** reading had a score no higher than 7.9, which corresponds to their parents "disagreeing a little" with four of the seven statements and "agreeing a little" with the other three, as well as reading for enjoyment only "once or twice a month," on average. All other students had parents who **Somewhat Like** reading.

Country	Like		Somewhat Like		Do Not Like		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sweden	52 (1.3)	562 (2.7)	42 (1.1)	528 (2.2)	7 (0.4)	513 (4.7)	10.9 (0.06)
New Zealand	s 51 (1.1)	571 (2.4)	41 (0.9)	531 (2.6)	8 (0.7)	509 (6.0)	10.8 (0.05)
Northern Ireland	s 50 (1.1)	583 (3.8)	41 (1.1)	563 (3.8)	9 (0.7)	552 (6.5)	10.8 (0.05)
Denmark	50 (0.9)	568 (1.7)	40 (0.9)	546 (2.6)	10 (0.5)	527 (4.0)	10.7 (0.04)
Australia	s 48 (1.6)	557 (3.5)	42 (1.5)	532 (3.2)	9 (0.7)	497 (5.9)	10.7 (0.07)
Ireland	48 (1.1)	571 (2.2)	43 (0.9)	544 (2.8)	9 (0.7)	524 (7.5)	10.7 (0.05)
Malta	46 (0.8)	499 (2.2)	45 (0.9)	470 (2.3)	8 (0.6)	460 (6.5)	10.7 (0.04)
Netherlands	s 45 (1.3)	563 (2.2)	45 (1.3)	547 (3.0)	11 (0.7)	541 (3.7)	10.4 (0.06)
Norway	44 (1.4)	522 (2.4)	46 (1.2)	501 (2.4)	10 (0.8)	482 (4.1)	10.5 (0.07)
Finland	43 (1.0)	582 (2.1)	48 (1.0)	562 (2.5)	9 (0.5)	545 (4.2)	10.6 (0.05)
Trinidad and Tobago	43 (0.9)	493 (4.3)	51 (1.0)	464 (4.2)	6 (0.5)	442 (9.4)	10.6 (0.04)
Israel	r 41 (1.0)	571 (2.9)	50 (0.9)	534 (3.4)	8 (0.6)	515 (6.3)	10.5 (0.04)
Canada	r 41 (0.7)	569 (2.1)	50 (0.6)	545 (1.7)	9 (0.4)	533 (2.7)	10.4 (0.03)
Austria	40 (1.2)	548 (2.3)	47 (1.0)	523 (2.1)	13 (0.7)	500 (3.7)	10.3 (0.06)
Germany	r 37 (1.2)	570 (2.6)	48 (1.1)	539 (2.7)	15 (0.9)	518 (3.2)	10.1 (0.06)
Croatia	36 (0.9)	567 (2.2)	51 (0.8)	547 (2.2)	13 (0.6)	537 (3.6)	10.1 (0.04)
Bulgaria	36 (1.5)	563 (2.9)	49 (1.1)	530 (3.6)	15 (1.5)	482 (10.8)	10.0 (0.10)
Poland	34 (0.8)	546 (2.8)	55 (0.8)	519 (2.3)	11 (0.6)	499 (4.1)	10.2 (0.04)
Spain	34 (0.9)	532 (3.0)	53 (0.9)	511 (2.7)	13 (0.5)	493 (3.8)	10.0 (0.04)
Czech Republic	33 (1.0)	561 (2.4)	53 (1.0)	545 (2.5)	14 (0.6)	520 (3.8)	10.0 (0.04)
Hungary	32 (1.0)	570 (2.7)	55 (0.9)	534 (2.8)	13 (0.9)	501 (8.4)	10.0 (0.05)
Slovak Republic	31 (0.9)	559 (2.7)	56 (1.1)	531 (2.4)	13 (0.8)	512 (5.4)	9.9 (0.05)
Belgium (French)	29 (1.2)	533 (2.9)	56 (1.2)	502 (3.5)	15 (0.8)	480 (4.3)	9.8 (0.06)
Georgia	27 (1.1)	512 (3.7)	67 (1.1)	482 (3.6)	5 (0.5)	453 (7.5)	10.1 (0.05)
Slovenia	26 (1.0)	556 (2.8)	65 (1.0)	527 (2.1)	9 (0.6)	497 (4.7)	9.8 (0.04)
Lithuania	25 (0.8)	548 (3.2)	57 (0.9)	527 (2.2)	17 (0.8)	509 (3.4)	9.6 (0.04)
Italy	24 (0.9)	565 (2.8)	66 (0.9)	539 (2.3)	10 (0.6)	528 (4.2)	9.8 (0.05)
Russian Federation	23 (0.8)	590 (3.4)	61 (0.8)	567 (3.0)	16 (0.8)	542 (3.9)	9.6 (0.04)
Iran, Islamic Rep. of	23 (0.8)	478 (3.1)	68 (0.8)	454 (3.0)	9 (0.6)	431 (6.8)	9.8 (0.04)
France	22 (1.0)	553 (2.8)	62 (0.9)	517 (2.5)	17 (0.7)	501 (3.8)	9.5 (0.04)
Colombia	22 (1.2)	475 (6.2)	68 (1.3)	443 (4.1)	11 (0.7)	438 (6.7)	9.7 (0.05)
Singapore	21 (0.6)	590 (4.0)	68 (0.6)	565 (3.4)	11 (0.5)	550 (5.1)	9.7 (0.02)
Romania	21 (1.1)	540 (4.5)	61 (1.4)	503 (4.7)	18 (1.5)	452 (7.3)	9.4 (0.08)
Qatar	21 (0.9)	459 (5.8)	70 (1.0)	424 (3.9)	10 (0.7)	403 (6.7)	9.7 (0.04)
Azerbaijan	21 (1.0)	477 (4.6)	70 (0.9)	462 (3.4)	9 (0.8)	443 (6.8)	9.7 (0.06)
Indonesia	21 (1.1)	448 (3.9)	68 (1.3)	427 (4.6)	12 (1.0)	415 (5.6)	9.6 (0.05)
Saudi Arabia	19 (1.0)	459 (7.0)	67 (1.0)	429 (4.1)	14 (0.8)	403 (8.7)	9.6 (0.05)
United Arab Emirates	19 (0.5)	490 (3.2)	71 (0.6)	434 (2.2)	10 (0.4)	412 (4.3)	9.6 (0.02)
Portugal	19 (1.0)	563 (3.5)	70 (1.0)	541 (2.4)	11 (0.7)	524 (6.5)	9.6 (0.04)
Morocco	18 (0.8)	353 (5.0)	62 (1.5)	310 (4.5)	20 (1.8)	288 (9.4)	9.3 (0.08)
Chinese Taipei	17 (0.7)	576 (3.3)	69 (0.7)	551 (1.8)	14 (0.6)	539 (3.5)	9.4 (0.03)
Oman	17 (0.5)	420 (4.1)	73 (0.7)	391 (2.9)	10 (0.5)	356 (7.0)	9.5 (0.02)
Hong Kong SAR	14 (0.6)	589 (2.9)	72 (0.9)	570 (2.3)	14 (0.7)	566 (3.8)	9.3 (0.03)
International Avg.	32 (0.2)	535 (0.5)	57 (0.2)	507 (0.5)	11 (0.1)	487 (0.9)	

England and the United States did not administer the Home Questionnaire.

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

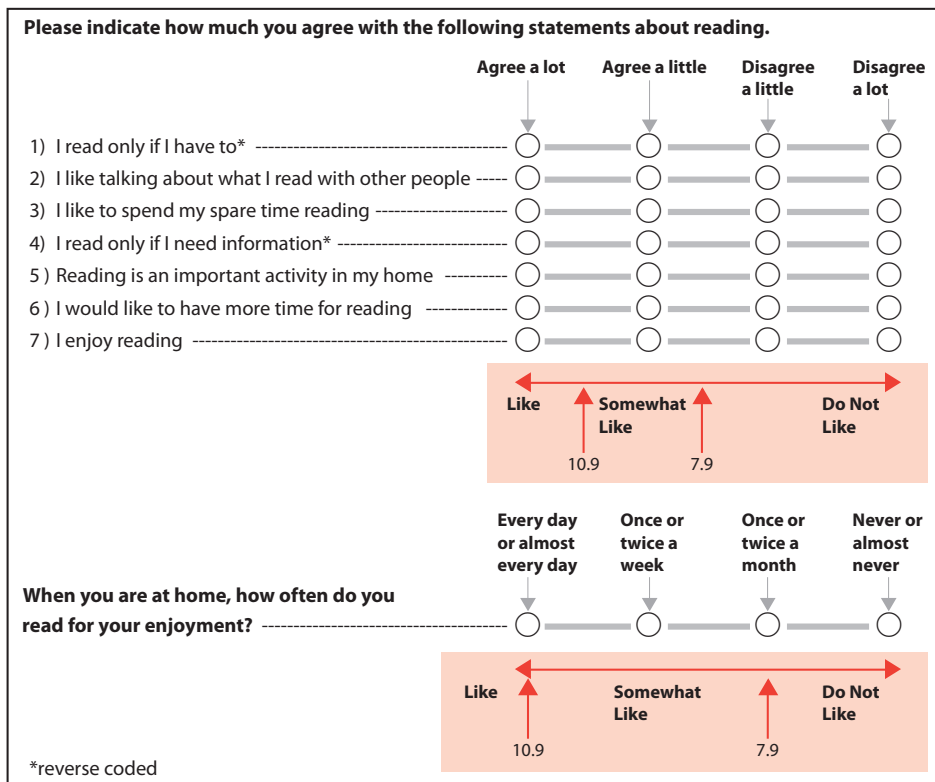
**Exhibit 4.4: Parents Like Reading (Continued)**

Country	Like		Somewhat Like		Do Not Like		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Botswana	24 (1.1)	460 (5.2)	65 (1.0)	417 (4.6)	11 (0.8)	373 (7.3)	9.8 (0.05)
Morocco	22 (0.8)	464 (3.3)	64 (1.0)	423 (4.7)	14 (1.0)	398 (7.0)	9.6 (0.06)
Honduras	21 (1.0)	480 (6.0)	68 (1.1)	441 (4.8)	11 (0.7)	455 (9.6)	9.8 (0.05)
Kuwait	19 (1.0)	466 (8.3)	68 (1.3)	422 (7.2)	13 (1.2)	381 (14.3)	9.5 (0.04)
<b>Benchmarking Participants<sup>o</sup></b>							
Alberta, Canada	r 49 (1.3)	565 (3.6)	43 (1.2)	547 (3.4)	9 (0.5)	542 (5.1)	10.7 (0.05)
Maltese - Malta	46 (0.9)	473 (2.4)	45 (0.9)	456 (2.2)	9 (0.5)	441 (6.1)	10.7 (0.04)
Ontario, Canada	r 44 (1.3)	570 (3.6)	48 (1.3)	547 (2.8)	8 (0.5)	539 (5.8)	10.6 (0.06)
Eng/Afr (5) - RSA	r 31 (1.5)	472 (9.8)	58 (1.3)	401 (7.3)	11 (1.0)	393 (10.0)	10.1 (0.07)
Andalusia, Spain	29 (0.9)	536 (2.8)	54 (1.0)	514 (2.4)	16 (0.8)	494 (3.6)	9.8 (0.04)
Quebec, Canada	29 (1.0)	557 (2.9)	58 (0.8)	535 (2.3)	13 (0.8)	526 (4.3)	9.9 (0.05)
Dubai, UAE	26 (0.7)	530 (3.0)	66 (0.8)	467 (2.2)	9 (0.4)	449 (5.0)	9.9 (0.03)
Abu Dhabi, UAE	18 (1.0)	469 (7.7)	73 (1.0)	421 (4.3)	10 (0.5)	400 (7.7)	9.6 (0.04)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Like		Somewhat Like		Do Not Like		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	22 (1.3)	599 (4.5)	67 (1.4)	572 (3.5)	11 (0.7)	570 (5.4)	9.7 (0.05)
Botswana	r 22 (1.0)	506 (6.8)	66 (1.1)	463 (3.3)	13 (0.8)	433 (5.5)	9.8 (0.05)
South Africa	r 22 (0.7)	508 (6.2)	68 (0.9)	456 (4.1)	10 (0.7)	450 (5.8)	9.8 (0.04)



**Exhibit 4.5: Parents' Educational Expectations for Their Children**
*Reported by Parents*

Country	Parents Expect Their Child to Complete							
	Postgraduate Degree*		University but Not Postgraduate Degree		Post-secondary but Not University		Upper Secondary Education or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Iran, Islamic Rep. of	75 (0.9)	472 (3.2)	12 (0.5)	446 (4.2)	10 (0.6)	404 (4.7)	3 (0.4)	376 (11.0)
United Arab Emirates	59 (0.7)	464 (2.4)	31 (0.6)	422 (2.7)	6 (0.3)	411 (5.3)	5 (0.2)	359 (5.4)
Qatar	58 (1.1)	455 (4.2)	33 (1.1)	409 (4.6)	3 (0.3)	359 (10.4)	6 (0.4)	352 (7.7)
Trinidad and Tobago	r 54 (1.2)	496 (4.0)	23 (0.9)	480 (4.4)	12 (0.9)	435 (6.1)	10 (0.7)	413 (6.4)
Poland	52 (1.2)	552 (2.5)	25 (0.8)	523 (2.1)	6 (0.4)	494 (4.2)	18 (0.9)	464 (3.1)
Israel	r 50 (1.1)	579 (2.8)	31 (1.0)	553 (3.7)	10 (0.7)	484 (5.7)	9 (0.7)	452 (8.9)
Saudi Arabia	49 (1.8)	452 (4.3)	32 (1.2)	427 (5.6)	8 (0.8)	384 (12.8)	11 (1.0)	391 (9.5)
Slovak Republic	48 (1.4)	568 (2.0)	6 (0.4)	541 (4.6)	13 (0.5)	529 (3.2)	33 (1.4)	496 (3.4)
Portugal	48 (1.0)	562 (2.8)	36 (0.9)	537 (2.2)	6 (0.6)	501 (8.2)	10 (0.7)	502 (5.4)
Bulgaria	44 (1.9)	574 (2.9)	7 (0.4)	549 (4.4)	30 (1.2)	516 (3.6)	18 (1.9)	465 (10.0)
Oman	43 (0.7)	424 (3.1)	40 (0.7)	387 (3.1)	6 (0.3)	350 (6.5)	12 (0.4)	317 (6.3)
Morocco	r 43 (1.3)	348 (4.9)	21 (0.9)	312 (5.3)	0 (0.0)	~ ~	36 (1.6)	285 (8.1)
Chinese Taipei	42 (1.0)	575 (2.2)	44 (0.7)	548 (1.8)	9 (0.5)	527 (4.9)	5 (0.5)	472 (6.8)
France	40 (1.5)	554 (2.5)	6 (0.4)	531 (4.7)	27 (1.0)	519 (2.6)	27 (1.2)	479 (3.8)
Colombia	35 (2.0)	478 (6.7)	48 (1.7)	441 (4.2)	8 (0.6)	437 (8.5)	10 (1.1)	410 (7.6)
Singapore	34 (0.8)	589 (3.6)	47 (0.8)	580 (3.1)	18 (0.9)	515 (3.6)	2 (0.2)	~ ~
Canada	r 32 (1.0)	571 (2.5)	41 (0.8)	562 (1.7)	23 (1.0)	522 (2.5)	3 (0.3)	504 (3.6)
Georgia	32 (1.4)	531 (2.5)	20 (1.0)	501 (4.1)	24 (1.2)	469 (3.5)	24 (1.2)	443 (4.8)
Indonesia	30 (1.5)	447 (4.5)	32 (1.3)	441 (4.8)	10 (0.7)	423 (5.2)	29 (1.8)	405 (5.0)
Denmark	30 (1.1)	583 (2.7)	32 (0.8)	561 (2.1)	24 (0.9)	536 (2.5)	14 (0.6)	526 (3.2)
Spain	28 (1.0)	534 (3.1)	52 (1.0)	523 (2.6)	7 (0.4)	485 (4.0)	13 (0.6)	469 (4.0)
Ireland	27 (0.8)	582 (3.1)	42 (1.2)	566 (3.0)	26 (1.3)	526 (3.1)	5 (0.4)	492 (7.2)
Azerbaijan	27 (1.2)	479 (3.3)	40 (1.3)	467 (4.2)	15 (1.1)	447 (6.2)	18 (1.2)	448 (5.4)
Hong Kong SAR	27 (1.1)	584 (3.0)	62 (0.9)	574 (2.3)	6 (0.5)	549 (5.0)	6 (0.5)	532 (6.1)
Finland	26 (1.3)	597 (2.7)	29 (0.8)	576 (2.5)	12 (0.7)	558 (3.8)	33 (1.2)	546 (2.5)
New Zealand	s 26 (1.0)	559 (3.5)	41 (1.1)	573 (2.8)	26 (1.1)	525 (2.7)	8 (0.6)	491 (6.5)
Lithuania	23 (1.0)	570 (2.5)	32 (1.0)	546 (2.2)	34 (1.0)	509 (2.7)	11 (0.7)	458 (5.2)
Czech Republic	22 (1.0)	585 (2.7)	14 (0.7)	572 (3.5)	6 (0.4)	564 (4.3)	58 (1.3)	526 (2.4)
Romania	21 (1.3)	550 (3.7)	29 (1.5)	535 (3.9)	16 (1.0)	509 (5.4)	34 (2.1)	440 (6.3)
Germany	r 20 (1.1)	595 (2.8)	9 (0.5)	576 (4.3)	16 (0.8)	528 (3.1)	55 (1.3)	531 (2.5)
Australia	s 18 (1.1)	572 (5.1)	42 (1.5)	567 (3.3)	25 (1.2)	511 (4.3)	15 (0.9)	491 (4.9)
Northern Ireland	s 18 (1.1)	612 (3.9)	37 (1.3)	597 (4.0)	14 (0.9)	559 (4.9)	32 (1.5)	531 (5.4)
Hungary	16 (1.2)	606 (3.3)	30 (1.0)	574 (2.4)	24 (0.8)	537 (2.7)	30 (1.3)	479 (5.3)
Italy	15 (0.7)	553 (4.2)	49 (0.9)	560 (2.4)	12 (0.6)	521 (3.9)	24 (0.9)	523 (3.2)
Netherlands	s 14 (1.3)	587 (4.6)	21 (0.9)	572 (2.6)	5 (0.5)	555 (6.3)	59 (1.7)	539 (2.0)
Malta	13 (0.5)	548 (4.3)	25 (0.7)	530 (2.7)	29 (0.9)	492 (2.6)	33 (0.8)	416 (3.1)
Belgium (French)	r 11 (0.7)	525 (6.6)	63 (1.4)	522 (2.8)	10 (0.7)	466 (3.9)	16 (0.9)	465 (5.6)
Croatia	9 (0.4)	581 (4.8)	34 (1.1)	577 (2.1)	48 (1.0)	542 (2.1)	9 (0.6)	497 (3.5)
Slovenia	7 (0.5)	571 (4.0)	42 (1.1)	557 (2.4)	36 (0.9)	517 (2.1)	15 (0.8)	475 (3.9)
Norway	6 (0.5)	503 (6.9)	63 (1.6)	522 (2.5)	26 (1.4)	489 (2.5)	5 (0.5)	464 (7.8)
Russian Federation	3 (0.3)	608 (8.1)	69 (1.2)	584 (2.6)	23 (1.0)	530 (3.3)	6 (0.6)	530 (6.2)
Austria	--	--	--	--	--	--	--	--
Sweden	--	--	--	--	--	--	--	--
International Avg.	31 (0.2)	541 (0.6)	34 (0.2)	522 (0.5)	16 (0.1)	493 (0.8)	19 (0.2)	461 (0.9)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

England and the United States did not administer the Home Questionnaire.

\* For example, doctorate, master's, or other postgraduate degree or diploma.

(.) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (–) indicates comparable data not available. A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 4.5: Parents' Educational Expectations for Their Children (Continued)**

Country		Parents Expect Their Child to Complete							
		Postgraduate Degree*		University but Not Postgraduate Degree		Post-secondary but Not University		Upper Secondary Education or Less	
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>									
Botswana	r	52 (1.9)	447 (6.2)	15 (0.8)	428 (6.2)	19 (1.1)	396 (4.8)	14 (1.0)	377 (4.0)
Morocco	r	48 (1.5)	459 (3.6)	20 (1.1)	429 (4.6)	0 (0.0)	~ ~	32 (1.5)	393 (5.2)
Honduras	r	35 (1.8)	481 (7.3)	22 (1.3)	468 (6.6)	14 (0.9)	446 (4.8)	28 (1.6)	413 (6.6)
Kuwait	s	34 (1.3)	463 (7.1)	40 (1.6)	440 (6.3)	14 (0.9)	373 (10.2)	12 (1.0)	341 (12.6)
<b>Benchmarking Participants<sup>◇</sup></b>									
Dubai, UAE		65 (0.8)	500 (2.4)	25 (0.7)	461 (3.6)	6 (0.5)	446 (8.7)	3 (0.3)	379 (8.2)
Abu Dhabi, UAE		59 (1.3)	448 (4.6)	32 (1.0)	408 (5.7)	5 (0.5)	384 (7.3)	5 (0.5)	353 (8.1)
Eng/Afr (5) - RSA	r	54 (1.7)	440 (8.7)	10 (1.0)	471 (14.1)	19 (1.2)	404 (7.8)	17 (1.6)	368 (8.5)
Ontario, Canada	r	42 (1.7)	569 (3.1)	39 (1.2)	563 (3.0)	18 (1.4)	517 (6.2)	2 (0.3)	~ ~
Alberta, Canada	r	31 (1.4)	567 (4.7)	42 (1.5)	565 (3.4)	22 (1.4)	531 (3.3)	5 (0.6)	512 (8.2)
Andalusia, Spain		25 (0.9)	537 (3.2)	50 (1.1)	529 (2.2)	8 (0.5)	493 (4.6)	17 (0.8)	471 (3.5)
Quebec, Canada		18 (1.4)	567 (3.7)	43 (1.3)	554 (2.4)	34 (1.6)	517 (2.5)	6 (0.7)	497 (6.9)
Maltese - Malta		13 (0.6)	489 (4.3)	24 (0.8)	489 (3.3)	30 (0.7)	477 (2.8)	33 (0.8)	421 (3.2)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country		Parents Expect Their Child to Complete							
		Postgraduate Degree*		University but Not Postgraduate Degree		Post-secondary but Not University		Upper Secondary Education or Less	
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	r	54 (1.8)	488 (5.5)	15 (0.8)	473 (4.9)	18 (0.9)	440 (3.8)	13 (1.0)	432 (5.1)
South Africa	s	52 (1.1)	477 (5.1)	9 (0.9)	506 (10.2)	23 (0.7)	457 (4.5)	16 (0.8)	446 (4.8)
Colombia		35 (2.0)	602 (4.3)	47 (1.7)	573 (3.4)	8 (0.6)	561 (6.9)	10 (1.1)	538 (5.9)

of the continuum and those expecting upper secondary school (or lower) at the other end of the continuum. The results for the sixth grade, benchmarking participants, and prePIRLS mirror the results at the fourth grade.

### *Children Were Engaged In Literacy Activities Before Beginning Primary School*

Throughout a child's development, the time devoted to literacy related activities remains essential to the acquisition of reading literacy skills and the effects can be long lasting (Levy, Gong, Hessels, Evans, & Jared, 2006). A large study in England recently found that a composite variable of seven home activities—being read to, going to the library, playing with numbers, painting and drawing, being taught letters, being taught numbers, and singing or reciting songs/poems/rhymes—had greater predictive power for literacy and numeracy achievement than any other variables studied, including SES, parents' education, and household income (Melhuish et al., 2008).

To examine children's early literacy experiences, PIRLS has included an Early Literacy Activities scale in each assessment, and the results consistently show a strong positive relationship with achievement. In PIRLS 2006, there was a positive relationship between engaging in early literacy activities and performance in every country. For PIRLS 2011, the scale was enhanced to include several oral language activities because as children develop their capacity for oral language, they are learning the rules of language use. As with the other scales developed for PIRLS 2011, IRT was used to summarize the results.

Exhibit 4.6 presents the results for the PIRLS 2011 Early Literacy Activities scale. Students were scored according their parents' frequency of doing nine activities with them: reading books, telling stories, singing songs, playing with alphabet toys, talking about things done, talking about things read, playing word games, writing letters or words, and reading aloud signs and labels. Students **Often** engaged in early literacy activities had parents who reported "often" doing five of the nine activities with them and "sometimes" doing the other four, on average. Students **Never or Almost Never** engaged in such activities had parents "never or almost never" doing five of the nine activities with them and "sometimes" doing the other four, on average.

Internationally, across the countries at the fourth grade, 37 percent of the students had parents that **Often** engaged them early literacy activities, and an additional 60 percent had parents that **Sometimes** engaged them early literacy activities. The fourth grade students whose parents **Often** engaged them had higher average achievement than the students whose parents only **Sometimes**

engaged them in literacy activities (529 vs. 506). In several countries, a small percentage of students had parents who rarely did any of the literacy activities with them, and these students typically had low average reading achievement. Compared to the fourth grade PIRLS students, somewhat larger percentages of the sixth grade and prePIRLS students had parents who **Never or Almost Never** engaged them in early literacy activities.

### *Students Attended Preprimary Education*

Preprimary education, in the form of preschool, kindergarten, or an early childhood education program, plays an important role in preparing children for primary school. PIRLS 2006 found a positive relationship between years of preprimary education and reading achievement in the fourth grade. Also, recent analyses of longitudinal data in the United States and England found that preschool attendance was positively related to enhanced school performance, and that the duration of attendance was associated with greater academic improvement (Tucker-Drob, 2012; Sammons et al., 2002). Besides giving students an early start in school and life, there are also broader reasons for countries to invest in preschool (Economist Intelligence Unit, 2012). For example, preprimary education provides an avenue for overcoming children's disadvantages and can help to break the generational repetitive cycle of poverty and low achievement.

Although there is considerable variation across countries, according to the *PIRLS 2011 Encyclopedia*, some countries already have mandatory preprimary education (e.g., Austria, Hungary, and the Netherlands), some have nearly 100 percent enrollment even though attendance is not mandatory (e.g., Australia, Croatia, and Singapore), and a number of the remaining countries are working to increase enrollment in preprimary education. Of course, school policies of entering primary school at older ages (e.g., age 7 in Finland, Lithuania, and Sweden) permit opportunities for more years of preschool attendance than when children start primary school at younger ages (e.g., age 4 or 5 in England, Ireland, the Netherlands, New Zealand, and Northern Ireland). Exhibit C.1 in Appendix C contains information across countries about the different policies and practices about the age of entry to primary school.

Exhibit 4.7 presents the PIRLS 2011 parents' reports on the number of years their children participated in preprimary education. In addition, the exhibit presents National Research Coordinators' reports of whether or not there was a national preprimary curriculum that includes language, reading, and writing

**Exhibit 4.6: Early Literacy Activities Before Beginning Primary School**

Reported by Parents

Students were scored according to their parents' frequency of doing the nine activities on the *Early Literacy Activities* scale. Students **Often** engaged in early literacy activities had a score on the scale of at least 10.7, which corresponds to their parents "often" doing five of the nine activities with them and "sometimes" doing the other four, on average. Students **Never or Almost Never** engaged in such activities had a score no higher than 6.2, which corresponds to parents "never or almost never" doing five of the nine activities with them and "sometimes" doing the other four, on average. All other students had parents who **Sometimes** engaged them in early literacy activities.

Country	Often		Sometimes		Never or Almost Never		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Russian Federation	61 (1.3)	576 (2.7)	38 (1.2)	558 (3.4)	1 (0.3)	~ ~	11.1 (0.06)
Northern Ireland	s 59 (1.3)	582 (3.5)	41 (1.4)	559 (3.7)	0 (0.2)	~ ~	11.2 (0.06)
New Zealand	s 55 (1.0)	567 (2.7)	44 (1.0)	529 (2.5)	1 (0.1)	~ ~	11.0 (0.05)
Australia	s 52 (1.4)	555 (3.0)	46 (1.3)	528 (3.4)	1 (0.3)	~ ~	10.8 (0.06)
Georgia	52 (1.4)	498 (2.6)	47 (1.3)	479 (4.0)	1 (0.2)	~ ~	10.7 (0.06)
Canada	r 51 (0.9)	566 (1.9)	48 (0.9)	541 (1.8)	1 (0.1)	~ ~	10.7 (0.04)
Ireland	50 (0.9)	569 (2.3)	49 (0.8)	542 (2.6)	1 (0.1)	~ ~	10.8 (0.04)
Croatia	50 (0.9)	562 (2.2)	49 (0.9)	544 (1.9)	0 (0.1)	~ ~	10.7 (0.03)
Slovenia	48 (1.2)	543 (2.3)	51 (1.2)	522 (2.6)	0 (0.1)	~ ~	10.6 (0.04)
Israel	r 48 (1.0)	563 (3.0)	51 (1.0)	534 (3.5)	1 (0.2)	~ ~	10.6 (0.04)
Italy	48 (0.9)	553 (2.4)	51 (1.0)	537 (2.6)	1 (0.2)	~ ~	10.5 (0.03)
Slovak Republic	47 (0.9)	547 (2.9)	51 (0.9)	530 (2.5)	2 (0.6)	~ ~	10.5 (0.05)
Trinidad and Tobago	47 (1.1)	497 (4.0)	52 (1.1)	456 (4.1)	1 (0.3)	~ ~	10.5 (0.05)
Malta	45 (0.9)	507 (1.9)	54 (0.9)	463 (2.7)	1 (0.2)	~ ~	10.4 (0.04)
Spain	44 (1.0)	528 (2.7)	55 (1.0)	507 (2.7)	1 (0.2)	~ ~	10.4 (0.03)
Poland	43 (0.8)	544 (2.8)	56 (0.8)	514 (2.1)	1 (0.3)	~ ~	10.4 (0.03)
Hungary	43 (0.8)	553 (2.8)	56 (0.8)	535 (3.2)	1 (0.4)	~ ~	10.3 (0.04)
Czech Republic	40 (1.0)	555 (2.6)	60 (1.0)	542 (2.3)	1 (0.2)	~ ~	10.3 (0.03)
Netherlands	s 40 (0.8)	559 (3.1)	60 (0.8)	551 (2.0)	1 (0.2)	~ ~	10.2 (0.03)
Bulgaria	39 (1.4)	559 (3.1)	51 (1.0)	529 (3.7)	9 (1.4)	455 (15.3)	9.7 (0.12)
Romania	38 (1.5)	529 (4.1)	54 (1.3)	494 (4.5)	8 (1.0)	423 (8.9)	9.9 (0.09)
Germany	r 38 (0.9)	555 (2.8)	61 (0.9)	543 (2.2)	1 (0.2)	~ ~	10.2 (0.03)
Norway	37 (1.4)	524 (2.5)	63 (1.4)	500 (2.2)	1 (0.2)	~ ~	10.0 (0.06)
France	36 (0.7)	536 (2.6)	63 (0.7)	515 (2.7)	1 (0.2)	~ ~	10.0 (0.03)
Lithuania	36 (0.9)	541 (1.9)	63 (0.9)	524 (2.5)	2 (0.2)	~ ~	10.0 (0.03)
Austria	35 (1.0)	543 (2.1)	63 (1.1)	523 (2.5)	1 (0.2)	~ ~	10.0 (0.03)
Portugal	35 (1.1)	558 (2.8)	63 (1.1)	535 (2.6)	2 (0.4)	~ ~	10.0 (0.05)
Sweden	34 (1.0)	562 (2.9)	64 (1.0)	537 (2.2)	2 (0.2)	~ ~	9.9 (0.04)
Colombia	34 (1.1)	457 (5.7)	63 (1.0)	448 (3.8)	3 (0.4)	409 (11.0)	9.9 (0.06)
Denmark	32 (0.9)	567 (2.2)	67 (0.9)	550 (1.9)	1 (0.2)	~ ~	9.9 (0.03)
Belgium (French)	30 (0.8)	524 (2.9)	67 (0.7)	501 (3.2)	3 (0.4)	482 (10.3)	9.7 (0.04)
Qatar	28 (1.0)	458 (6.0)	69 (1.0)	420 (3.1)	3 (0.3)	390 (11.7)	9.7 (0.05)
Finland	27 (0.9)	583 (2.9)	72 (0.9)	564 (1.9)	1 (0.1)	~ ~	9.7 (0.03)
United Arab Emirates	27 (0.5)	480 (2.8)	71 (0.5)	430 (2.3)	3 (0.2)	392 (7.4)	9.6 (0.03)
Saudi Arabia	26 (1.3)	455 (5.2)	70 (1.4)	426 (4.2)	4 (0.8)	360 (16.2)	9.5 (0.06)
Singapore	26 (0.7)	595 (3.6)	69 (0.7)	561 (3.3)	5 (0.3)	543 (6.2)	9.4 (0.03)
Azerbaijan	23 (1.3)	467 (4.8)	72 (1.3)	463 (3.5)	4 (0.7)	439 (7.6)	9.5 (0.07)
Indonesia	23 (1.3)	445 (5.8)	72 (1.3)	427 (4.1)	4 (0.5)	409 (6.5)	9.4 (0.07)
Oman	19 (0.4)	429 (3.6)	76 (0.5)	385 (3.2)	5 (0.4)	354 (7.2)	9.2 (0.03)
Morocco	17 (0.9)	321 (5.6)	64 (1.5)	314 (4.5)	19 (1.9)	302 (13.6)	8.4 (0.13)
Iran, Islamic Rep. of	15 (0.6)	474 (3.6)	77 (0.8)	460 (3.0)	8 (0.8)	411 (8.0)	8.9 (0.05)
Chinese Taipei	14 (0.6)	577 (3.5)	76 (0.8)	553 (1.8)	10 (0.6)	526 (4.8)	8.7 (0.04)
Hong Kong SAR	12 (0.6)	588 (3.7)	80 (0.6)	571 (2.3)	8 (0.5)	560 (3.7)	8.7 (0.03)
International Avg.	37 (0.2)	529 (0.5)	60 (0.2)	506 (0.5)	3 (0.1)	430 (2.6)	

England and the United States did not administer the Home Questionnaire. Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011



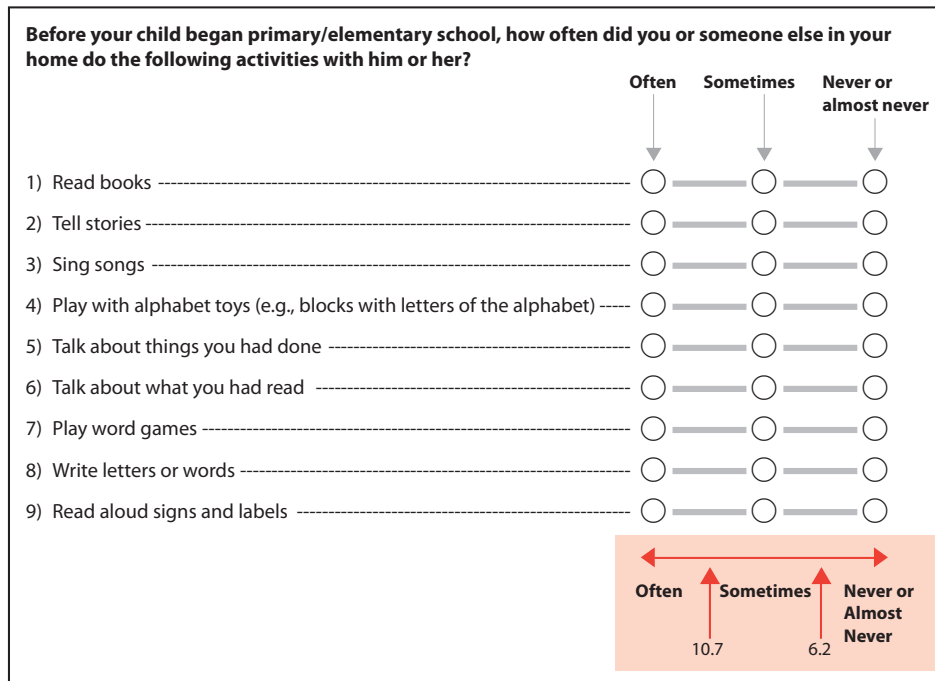
**Exhibit 4.6: Early Literacy Activities Before Beginning Primary School (Continued)**

Country	Often		Sometimes		Never or Almost Never		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	30 (1.5)	461 (8.3)	63 (1.3)	447 (4.2)	7 (0.7)	426 (12.2)	9.6 (0.08)
Kuwait	23 (1.2)	448 (9.3)	73 (1.2)	420 (6.5)	4 (0.5)	378 (14.2)	9.4 (0.06)
Morocco	16 (0.7)	437 (6.7)	67 (1.2)	432 (4.2)	16 (1.3)	406 (7.5)	8.5 (0.08)
Botswana	15 (1.1)	464 (8.7)	74 (1.2)	420 (3.9)	11 (1.0)	388 (6.2)	8.6 (0.08)
<b>Benchmarking Participants<sup>o</sup></b>							
Ontario, Canada	54 (1.3)	566 (3.1)	45 (1.3)	545 (3.2)	1 (0.2)	~ ~	10.9 (0.05)
Alberta, Canada	52 (1.3)	568 (3.6)	47 (1.3)	542 (3.7)	1 (0.2)	~ ~	10.8 (0.05)
Maltese - Malta	45 (0.8)	481 (2.0)	54 (0.8)	447 (1.9)	1 (0.2)	~ ~	10.4 (0.03)
Andalusia, Spain	43 (0.9)	530 (2.5)	56 (0.9)	508 (2.7)	1 (0.2)	~ ~	10.3 (0.04)
Quebec, Canada	40 (1.0)	554 (3.0)	59 (1.0)	531 (2.4)	2 (0.3)	~ ~	10.2 (0.04)
Eng/Afr (5) - RSA	34 (1.5)	465 (8.5)	61 (1.4)	405 (7.2)	4 (0.7)	358 (14.5)	9.8 (0.09)
Dubai, UAE	34 (0.8)	521 (2.4)	64 (0.8)	463 (2.6)	2 (0.2)	~ ~	9.9 (0.03)
Abu Dhabi, UAE	24 (1.1)	466 (6.4)	73 (1.0)	416 (4.4)	3 (0.4)	379 (9.6)	9.5 (0.05)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Often		Sometimes		Never or Almost Never		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
South Africa	34 (0.8)	482 (5.4)	62 (0.8)	458 (3.7)	4 (0.6)	451 (8.7)	9.9 (0.05)
Colombia	34 (1.2)	583 (4.4)	63 (1.0)	577 (3.3)	3 (0.4)	536 (10.2)	9.9 (0.06)
Botswana	14 (0.9)	512 (7.7)	76 (1.0)	464 (3.8)	10 (0.9)	442 (5.7)	8.7 (0.06)



**Exhibit 4.7: Students Attended Preprimary Education**

Curriculum Reported by National Research Coordinators and Preprimary Attendance Reported by Parents

Country	National Preprimary Curriculum Includes Language, Reading, and Writing Skills	Students Attended Preprimary Education								
		3 Years or More		Less than 3 Years but More than 1 Year		1 Year or Less		Did Not Attend		
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Hungary	●	86 (0.9)	548 (2.5)	13 (0.7)	505 (5.6)	1 (0.3)	~ ~	0 (0.1)	~ ~	
Denmark	●	81 (0.6)	558 (1.6)	17 (0.6)	544 (3.1)	2 (0.2)	~ ~	0 (0.1)	~ ~	
Belgium (French)	●	76 (1.3)	513 (2.8)	22 (1.1)	494 (4.4)	1 (0.1)	~ ~	1 (0.4)	~ ~	
France	●	76 (0.9)	524 (2.7)	24 (0.9)	514 (3.4)	0 (0.1)	~ ~	1 (0.2)	~ ~	
Italy	●	75 (0.9)	549 (2.3)	23 (0.8)	530 (3.1)	1 (0.2)	~ ~	1 (0.2)	~ ~	
Germany	r ○	74 (0.9)	551 (2.4)	23 (0.9)	540 (2.9)	1 (0.2)	~ ~	1 (0.2)	~ ~	
Sweden	●	74 (1.1)	551 (2.2)	20 (1.0)	536 (2.8)	2 (0.4)	~ ~	3 (0.4)	517 (11.1)	
Norway	○	71 (1.5)	512 (2.4)	24 (1.4)	500 (3.3)	2 (0.2)	~ ~	3 (0.6)	494 (11.9)	
Austria	○	69 (1.5)	532 (2.1)	27 (1.3)	530 (3.1)	3 (0.7)	518 (6.3)	1 (0.1)	~ ~	
Russian Federation	○	69 (1.3)	572 (2.9)	14 (0.8)	570 (4.4)	3 (0.3)	559 (7.2)	15 (1.0)	553 (5.3)	
Hong Kong SAR	●	68 (1.0)	573 (2.4)	32 (1.0)	572 (2.9)	1 (0.1)	~ ~	0 (0.1)	~ ~	
Czech Republic	○	68 (1.1)	549 (2.4)	28 (0.9)	543 (2.6)	3 (0.4)	551 (5.5)	1 (0.2)	~ ~	
Spain	●	66 (0.9)	522 (2.3)	28 (0.9)	505 (3.0)	4 (0.4)	494 (6.3)	3 (0.3)	493 (9.2)	
Slovak Republic	●	65 (1.3)	546 (2.1)	24 (0.8)	530 (3.3)	8 (0.7)	515 (5.8)	4 (0.7)	489 (10.7)	
Singapore	○	64 (0.7)	580 (3.3)	34 (0.7)	554 (3.7)	1 (0.1)	~ ~	1 (0.1)	~ ~	
Israel	r ●	60 (1.1)	563 (3.0)	36 (1.0)	532 (3.9)	3 (0.3)	460 (10.3)	1 (0.2)	~ ~	
Slovenia	●	59 (1.3)	537 (2.0)	26 (1.1)	526 (3.4)	5 (0.5)	524 (5.0)	9 (0.7)	519 (5.0)	
Bulgaria	●	58 (1.8)	546 (3.3)	26 (1.2)	530 (5.1)	6 (0.6)	495 (8.1)	10 (1.1)	497 (10.3)	
Romania	●	57 (1.9)	523 (3.9)	33 (1.3)	490 (5.0)	4 (0.7)	445 (13.8)	6 (1.0)	412 (12.2)	
Lithuania	●	53 (1.2)	539 (2.2)	17 (0.6)	530 (3.8)	7 (0.5)	524 (5.6)	23 (1.3)	507 (4.5)	
Finland	●	46 (1.3)	569 (2.2)	31 (1.0)	566 (2.6)	21 (1.1)	572 (3.1)	1 (0.2)	~ ~	
Portugal	○	45 (1.3)	549 (2.7)	37 (1.3)	544 (3.1)	8 (0.6)	533 (5.4)	9 (0.8)	522 (5.6)	
Croatia	○	44 (1.6)	567 (2.2)	19 (0.8)	551 (2.9)	10 (1.2)	538 (4.8)	27 (1.6)	540 (2.2)	
Georgia	●	42 (1.3)	495 (3.3)	29 (0.9)	495 (3.9)	7 (0.6)	493 (5.8)	21 (1.3)	471 (4.5)	
New Zealand	s ●	38 (1.1)	555 (3.1)	54 (0.9)	552 (2.8)	4 (0.5)	522 (13.0)	4 (0.5)	496 (13.9)	
Chinese Taipei	●	38 (0.9)	561 (2.6)	56 (0.8)	551 (1.9)	4 (0.4)	538 (8.1)	1 (0.2)	~ ~	
Poland	○	34 (1.3)	545 (2.9)	23 (1.0)	529 (3.1)	16 (1.1)	513 (4.5)	28 (1.8)	509 (3.1)	
Morocco	r ●	22 (0.8)	339 (5.3)	39 (1.6)	324 (4.8)	17 (1.0)	298 (6.1)	22 (1.6)	293 (9.9)	
Colombia	○	20 (1.4)	466 (8.0)	37 (1.6)	457 (5.2)	33 (1.7)	435 (4.3)	11 (0.9)	439 (6.2)	
Trinidad and Tobago	●	17 (0.7)	456 (5.6)	73 (0.9)	480 (4.1)	6 (0.6)	473 (8.0)	3 (0.4)	444 (12.8)	
Canada	r	Varies by province	17 (0.6)	566 (3.2)	53 (1.0)	557 (2.0)	25 (0.9)	542 (1.9)	5 (0.3)	543 (4.2)
Australia	s	Varies by state	15 (1.0)	550 (5.1)	55 (1.4)	547 (3.3)	26 (1.2)	531 (3.2)	5 (0.5)	520 (8.0)
Qatar	●	12 (0.9)	428 (7.2)	51 (1.5)	450 (4.4)	19 (0.8)	420 (4.5)	18 (1.2)	389 (7.1)	
United Arab Emirates	●	12 (0.3)	433 (4.6)	49 (0.9)	445 (2.2)	16 (0.4)	454 (3.5)	22 (0.7)	436 (3.6)	
Malta	●	11 (0.5)	490 (5.5)	86 (0.5)	481 (1.8)	3 (0.3)	496 (10.0)	1 (0.1)	~ ~	
Iran, Islamic Rep. of	●	10 (0.8)	472 (6.3)	29 (1.1)	473 (3.2)	40 (1.2)	461 (3.1)	21 (1.5)	426 (5.6)	
Oman	●	8 (0.4)	397 (5.5)	36 (0.8)	412 (3.6)	25 (0.6)	385 (3.7)	31 (0.8)	374 (3.8)	
Azerbaijan	○	7 (0.6)	466 (4.0)	20 (1.3)	465 (4.2)	8 (0.6)	457 (5.3)	64 (1.8)	464 (4.0)	
Ireland	●	7 (0.6)	544 (7.2)	57 (1.3)	562 (2.3)	25 (1.2)	554 (3.6)	12 (0.7)	534 (8.3)	
Indonesia	○	6 (0.7)	408 (9.8)	45 (2.7)	445 (4.8)	20 (1.8)	435 (6.0)	29 (2.7)	411 (5.2)	
Northern Ireland	s ○	5 (0.5)	591 (10.2)	49 (1.7)	575 (3.9)	44 (1.7)	570 (3.5)	3 (0.4)	540 (9.4)	
Saudi Arabia	●	3 (0.3)	437 (11.1)	20 (1.4)	454 (4.8)	25 (1.3)	442 (4.7)	52 (2.2)	416 (6.4)	
Netherlands	s ●	3 (0.4)	538 (7.2)	91 (0.8)	556 (2.1)	3 (0.4)	531 (8.3)	3 (0.5)	533 (7.5)	
England	●									
United States		Varies by state								
International Avg.		42 (0.2)	519 (0.7)	36 (0.2)	513 (0.5)	11 (0.1)	493 (1.1)	11 (0.1)	475 (1.5)	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

● Yes ○ No

England and the United States did not administer the Home Questionnaire.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 4.7: Students Attended Preprimary Education (Continued)**

Country	National Preprimary Curriculum Includes Language, Reading, and Writing Skills	Students Attended Preprimary Education							
		3 Years or More		Less than 3 Years but More than 1 Year		1 Year or Less		Did Not Attend	
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>									
Morocco	●	22 (0.8)	450 (4.7)	40 (1.5)	439 (3.5)	16 (0.9)	409 (5.3)	22 (1.7)	404 (7.3)
Honduras	○	21 (1.6)	429 (9.0)	36 (1.6)	464 (6.4)	28 (1.6)	455 (5.1)	15 (1.0)	443 (5.6)
Botswana	r ●	15 (0.8)	458 (7.9)	22 (1.2)	468 (7.4)	7 (0.6)	443 (8.2)	56 (1.9)	395 (3.6)
Kuwait	s ○	6 (0.7)	388 (15.1)	78 (1.3)	430 (6.7)	7 (0.7)	424 (12.8)	8 (1.0)	424 (12.5)
<b>Benchmarking Participants<sup>◇</sup></b>									
Andalusia, Spain	●	68 (1.0)	524 (2.4)	28 (0.8)	505 (3.5)	2 (0.3)	~ ~	1 (0.2)	~ ~
Eng/Afr (5) - RSA	r ●	37 (1.8)	440 (11.2)	36 (1.2)	430 (8.3)	18 (1.6)	392 (7.8)	9 (1.0)	364 (10.2)
Ontario, Canada	r ●	20 (1.1)	567 (4.7)	67 (1.1)	556 (2.7)	8 (0.6)	538 (6.1)	5 (0.6)	550 (7.5)
Alberta, Canada	r ●	16 (1.0)	563 (5.2)	51 (1.1)	560 (3.2)	30 (1.4)	547 (3.4)	3 (0.5)	522 (11.8)
Dubai, UAE	●	14 (0.6)	474 (5.2)	46 (0.8)	491 (2.7)	17 (0.5)	498 (4.5)	23 (1.0)	464 (4.5)
Abu Dhabi, UAE	●	11 (0.6)	419 (8.9)	50 (1.6)	432 (4.6)	18 (0.9)	432 (6.4)	21 (1.0)	419 (6.0)
Quebec, Canada	●	11 (0.7)	555 (4.2)	32 (1.5)	540 (2.8)	51 (1.6)	539 (2.4)	5 (0.5)	528 (7.2)
Maltese - Malta	●	10 (0.5)	454 (4.7)	87 (0.6)	464 (1.7)	3 (0.3)	435 (9.6)	1 (0.1)	~ ~
Florida, US	●								

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	National Preprimary Curriculum Includes Language, Reading, and Writing Skills	Students Attended Preprimary Education							
		3 Years or More		Less than 3 Years but More than 1 Year		1 Year or Less		Did Not Attend	
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
South Africa	r ●	30 (0.8)	481 (5.8)	35 (0.8)	468 (4.9)	17 (0.7)	459 (5.3)	18 (1.0)	436 (5.1)
Colombia	○	20 (1.4)	590 (5.6)	37 (1.6)	585 (4.5)	33 (1.7)	565 (3.9)	11 (0.9)	569 (4.4)
Botswana	r ●	14 (0.9)	509 (7.0)	24 (1.4)	503 (7.8)	6 (0.6)	471 (6.6)	55 (2.1)	445 (2.8)

● Yes ○ No

skills. It is noted that these preprimary curricula may concentrate on expression, using new language, and developing concepts in the primary written language(s) of communication, yet two-thirds of the PIRLS 2011 countries indicated that their preprimary curriculum made such provision, as did Morocco and Botswana among sixth grade countries, and all the benchmarking participants.

Although attendance in preprimary education differed dramatically from country to country, on average, 42 percent of the fourth grade students had at least three years of preprimary education and another 36 percent had more than one year. These students had higher average achievement than the eleven percent with only one year or less of preprimary education (519 and 513 vs. 493, respectively). Most notably, however, the remaining eleven percent of students, on average, that did not attend preschool had much lower average reading achievement (475). There was a range across countries, but the majority of students did not attend preschool in Azerbaijan (64%) and Saudi Arabia (52%). Also, several of the sixth grade, benchmarking, and prePIRLS participants had higher than average percentages of students that had not attended preprimary education, particularly Botswana (55%).

### *Students Could Do Early Literacy Tasks When Began Primary School*

Considering that 1) parents are students' first teachers and many parents have concentrated on literacy skills, and 2) substantial percentages of students in some countries have attended several years of preprimary education, it is not surprising that many students begin primary school with some literacy skills. Again, however, it is recognized that the earlier students start primary school, the fewer years they will have had available for preprimary education.

To provide information about the extent to which students enter primary school equipped with some basic skills as a foundation for formal reading instruction, the PIRLS assessments have included a set of questions asking parents how well their child could do the following early literacy activities when he or she first entered primary school: recognize most of the alphabet, write letters of the alphabet, read some words, write some words, and read sentences. In keeping with considerable research, PIRLS has consistently shown a positive relationship between early reading skills and average reading achievement at the fourth grade. A recent Canadian meta-analysis of six longitudinal studies found school entry reading skills to be among the strongest predictors of later achievement across gender and socioeconomic backgrounds (Duncan et al., 2007).

Exhibit 4.8 presents the PIRLS 2011 results for the Early Literacy Tasks scale, created using IRT for the first time. Students were scored according to their parents' responses to how well their children could do the five tasks, with some being able to do the tasks **Very Well**, on average, and some doing the tasks **Not Well**, on average. According to their parents, on average across the fourth grade countries, about a quarter (26%) of the students entered school able to perform the five early literacy tasks **Very Well** and another 42 percent **Moderately Well**. Parents' assessments of their children's early literacy skills corresponded well with reading achievement at the fourth grade. Internationally, reading achievement at the fourth grade was substantially higher for those students whose parents reported their children could perform the activities **Very Well** than for the students whose parents reported **Moderately Well** (537 vs. 511). Average achievement was much lower (489) for students whose parents reported "not very well" or "not at all" to all five literacy tasks. This pattern also was evident across the sixth grade, benchmarking, and prePIRLS participants.

**Exhibit 4.8: Could Do Early Literacy Tasks When Began Primary School**

Reported by Parents

Students were scored according to their parents' responses to how well their children could do the five tasks on the *Early Literacy Tasks* scale. Students who could do literacy tasks **Very Well** had a score on the scale of at least 11.5, which corresponds to their parents reporting that the students could do three literacy tasks "very well" and the other two "moderately well," on average. Students doing the tasks **Not Well** had a score no higher than 8.9, which corresponds to parents reporting that students could do three tasks "not very well" and the other two "moderately well," on average. All other students could do the literacy tasks **Moderately Well** when they began primary school.

Country	Very Well		Moderately Well		Not Well		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Trinidad and Tobago	49 (1.3)	499 (3.6)	43 (1.1)	458 (4.7)	8 (0.6)	411 (7.5)	11.3 (0.04)
Israel	46 (1.2)	555 (3.5)	36 (0.7)	538 (3.8)	18 (0.9)	551 (5.0)	10.9 (0.05)
Colombia	46 (1.4)	462 (5.5)	40 (1.2)	446 (4.5)	14 (1.1)	422 (5.1)	11.0 (0.05)
Qatar	45 (0.9)	456 (3.5)	39 (1.0)	422 (5.0)	16 (0.7)	378 (6.4)	11.0 (0.03)
Singapore	44 (1.2)	598 (3.1)	45 (1.0)	557 (3.3)	11 (0.6)	499 (4.7)	11.1 (0.04)
Saudi Arabia	44 (1.4)	454 (4.0)	36 (1.1)	424 (4.4)	20 (1.3)	393 (9.3)	10.7 (0.09)
Spain	44 (0.9)	538 (2.7)	40 (0.7)	506 (2.6)	16 (0.7)	478 (3.9)	10.9 (0.04)
Hong Kong SAR	41 (1.1)	594 (2.1)	50 (0.9)	564 (2.3)	10 (0.6)	525 (4.6)	11.0 (0.04)
Oman	41 (0.7)	429 (3.2)	44 (0.6)	374 (3.4)	15 (0.7)	347 (4.5)	10.8 (0.04)
United Arab Emirates	36 (0.7)	470 (2.2)	43 (0.6)	436 (2.3)	21 (0.5)	408 (4.3)	10.5 (0.03)
Croatia	34 (0.8)	576 (2.2)	46 (0.8)	548 (1.9)	19 (0.6)	528 (3.8)	10.6 (0.03)
Morocco	32 (1.2)	353 (5.2)	42 (1.1)	305 (4.5)	26 (1.8)	282 (8.5)	10.1 (0.11)
Finland	31 (0.9)	602 (2.7)	33 (0.7)	566 (2.3)	35 (0.9)	542 (2.8)	10.2 (0.04)
Sweden	30 (1.1)	574 (2.9)	45 (1.0)	540 (2.4)	25 (1.0)	520 (3.0)	10.3 (0.05)
Chinese Taipei	30 (0.6)	576 (2.8)	58 (0.7)	551 (2.0)	12 (0.6)	511 (4.2)	10.6 (0.02)
Malta	28 (0.8)	515 (2.9)	50 (0.9)	480 (2.1)	22 (0.8)	448 (3.7)	10.3 (0.04)
Bulgaria	27 (1.1)	563 (4.0)	40 (1.2)	543 (3.2)	33 (1.7)	499 (7.0)	9.8 (0.10)
Denmark	26 (0.8)	585 (2.1)	52 (0.9)	552 (1.9)	23 (0.8)	526 (2.7)	10.3 (0.03)
Poland	26 (0.7)	558 (2.7)	45 (0.8)	526 (2.2)	29 (0.8)	499 (3.2)	10.0 (0.04)
France	24 (0.8)	543 (3.4)	51 (0.7)	522 (2.3)	25 (0.9)	502 (3.8)	10.2 (0.04)
Iran, Islamic Rep. of	23 (0.8)	476 (3.5)	40 (0.8)	456 (3.3)	37 (1.1)	450 (4.1)	9.6 (0.06)
Georgia	23 (0.9)	513 (4.0)	37 (1.1)	492 (3.7)	40 (1.3)	473 (3.9)	9.6 (0.05)
Indonesia	22 (2.3)	455 (4.3)	52 (1.9)	433 (3.7)	26 (2.3)	404 (6.2)	10.0 (0.11)
Russian Federation	22 (0.8)	599 (2.7)	44 (1.1)	574 (3.2)	34 (1.4)	541 (3.4)	9.8 (0.06)
Azerbaijan	22 (1.1)	471 (4.7)	39 (1.2)	462 (3.7)	39 (1.7)	461 (4.4)	9.5 (0.08)
Canada	22 (0.7)	581 (2.3)	46 (0.6)	554 (1.6)	32 (0.6)	535 (1.9)	9.9 (0.03)
Lithuania	21 (0.7)	570 (2.7)	55 (1.0)	532 (2.1)	24 (0.9)	488 (3.3)	10.1 (0.03)
Czech Republic	20 (0.7)	568 (3.5)	43 (0.9)	546 (2.2)	36 (0.9)	537 (3.1)	9.7 (0.03)
New Zealand	18 (1.2)	568 (4.8)	47 (1.1)	556 (2.9)	35 (1.0)	531 (2.8)	9.8 (0.05)
Australia	17 (0.9)	571 (3.8)	44 (1.1)	544 (3.2)	39 (1.1)	526 (3.6)	9.7 (0.04)
Slovenia	16 (0.7)	570 (3.8)	36 (0.7)	539 (2.3)	48 (0.8)	513 (2.2)	9.3 (0.04)
Norway	16 (0.8)	534 (3.3)	28 (0.9)	518 (2.8)	55 (1.2)	496 (2.5)	9.1 (0.05)
Romania	16 (1.0)	538 (6.0)	39 (1.3)	517 (4.7)	45 (1.6)	477 (5.2)	9.2 (0.09)
Austria	14 (0.7)	543 (3.9)	36 (1.0)	530 (2.9)	50 (1.1)	527 (2.1)	9.1 (0.04)
Hungary	13 (0.6)	568 (5.0)	31 (0.9)	542 (3.2)	56 (0.9)	536 (3.4)	8.8 (0.04)
Italy	13 (0.6)	563 (4.5)	44 (0.8)	545 (2.6)	43 (0.8)	539 (2.4)	9.3 (0.03)
Belgium (French)	12 (0.8)	522 (4.4)	45 (0.9)	508 (3.3)	42 (1.0)	503 (3.5)	9.4 (0.04)
Portugal	12 (0.7)	561 (5.5)	45 (1.1)	549 (2.7)	42 (1.0)	532 (3.1)	9.4 (0.05)
Germany	12 (0.7)	560 (3.5)	39 (1.0)	548 (2.6)	50 (1.0)	544 (2.7)	9.1 (0.04)
Netherlands	11 (0.8)	573 (5.1)	41 (1.0)	558 (2.7)	48 (1.1)	546 (2.5)	9.2 (0.05)
Northern Ireland	10 (0.8)	595 (5.3)	45 (1.3)	575 (3.7)	45 (1.2)	564 (4.0)	9.2 (0.04)
Slovak Republic	9 (0.6)	558 (7.5)	26 (0.7)	548 (3.1)	65 (0.8)	531 (2.2)	8.5 (0.04)
Ireland	--	--	--	--	--	--	--
International Avg.	26 (0.1)	537 (0.6)	42 (0.2)	511 (0.5)	32 (0.2)	489 (0.7)	--

England and the United States did not administer the Home Questionnaire.

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (-) indicates comparable data not available.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

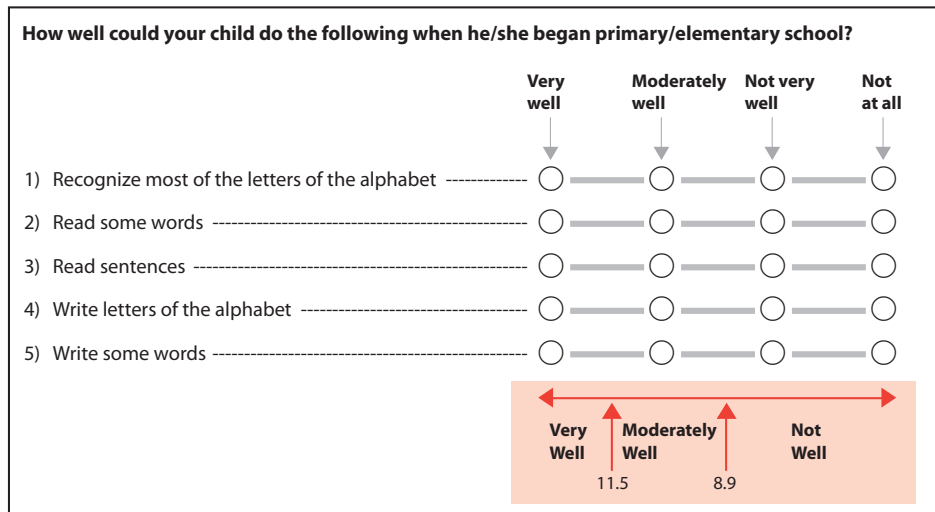
**Exhibit 4.8: Could Do Early Literacy Tasks When Began Primary School (Continued)**

Country	Very Well		Moderately Well		Not Well		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	50 (1.3)	461 (5.7)	36 (1.1)	448 (4.6)	14 (0.9)	424 (9.1)	11.1 (0.04)
Kuwait	38 (1.2)	461 (6.5)	37 (1.3)	413 (7.5)	25 (1.3)	388 (10.1)	10.5 (0.07)
Morocco	38 (1.1)	456 (4.0)	44 (1.2)	419 (4.5)	18 (1.0)	396 (8.2)	10.6 (0.06)
Botswana	30 (1.1)	451 (5.0)	41 (1.2)	430 (5.3)	29 (1.5)	385 (4.8)	10.1 (0.08)
<b>Benchmarking Participants<sup>o</sup></b>							
Andalusia, Spain	42 (1.1)	540 (2.4)	42 (0.9)	508 (2.4)	16 (0.6)	483 (3.7)	10.9 (0.04)
Abu Dhabi, UAE	36 (1.0)	459 (4.5)	41 (1.0)	421 (4.6)	22 (1.0)	386 (8.0)	10.5 (0.05)
Dubai, UAE	36 (1.0)	503 (2.6)	44 (0.8)	476 (2.5)	20 (0.6)	459 (4.6)	10.6 (0.03)
Eng/Afr (5) - RSA	30 (1.6)	448 (8.4)	47 (1.9)	425 (7.7)	23 (2.0)	396 (11.2)	10.4 (0.08)
Ontario, Canada	27 (1.4)	582 (3.2)	45 (1.1)	557 (2.7)	28 (1.2)	531 (4.0)	10.2 (0.06)
Maltese - Malta	25 (0.8)	486 (2.8)	47 (0.8)	465 (2.2)	28 (0.7)	439 (3.2)	10.0 (0.03)
Alberta, Canada	23 (1.1)	584 (4.5)	49 (1.1)	554 (3.2)	28 (1.0)	537 (4.1)	10.0 (0.04)
Quebec, Canada	15 (0.8)	567 (3.4)	45 (0.9)	542 (2.6)	40 (1.0)	529 (2.5)	9.5 (0.04)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

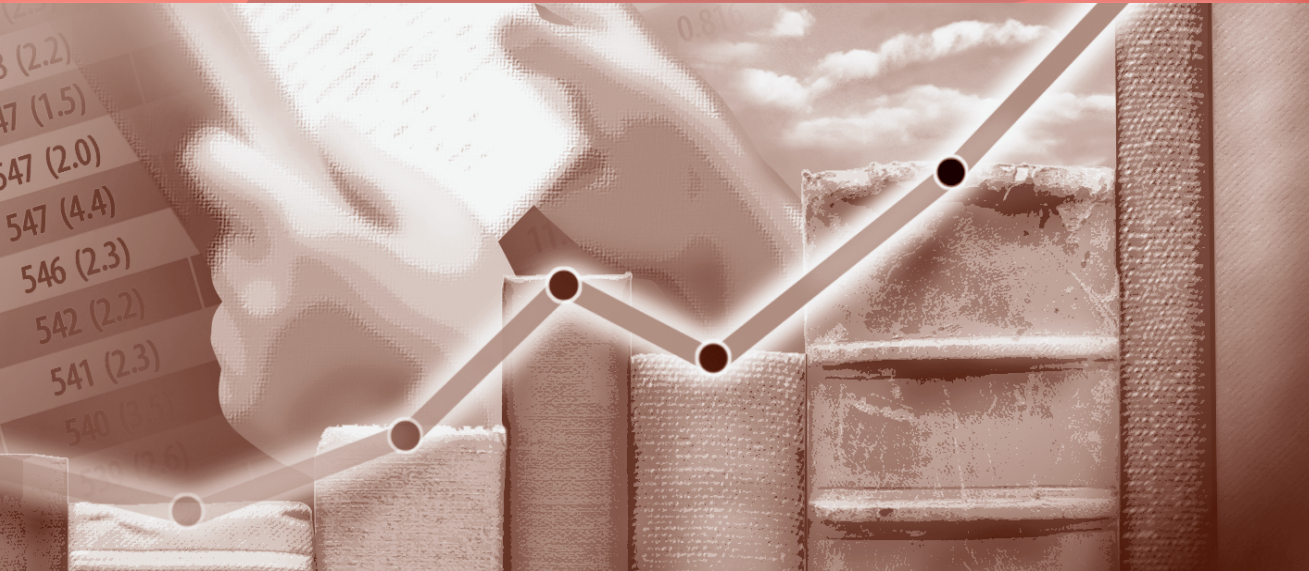
Country	Very Well		Moderately Well		Not Well		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	46 (1.4)	588 (4.1)	40 (1.1)	576 (3.6)	14 (1.1)	551 (4.9)	11.0 (0.05)
South Africa	31 (0.9)	479 (4.9)	44 (0.9)	471 (4.7)	25 (0.9)	448 (4.2)	10.3 (0.04)
Botswana	25 (0.9)	506 (5.1)	43 (1.2)	469 (4.9)	32 (1.3)	439 (3.4)	9.9 (0.06)







# Chapter 5



## School Resources for Teaching Reading

The most successful schools tend to have students that are relatively economically affluent, speak the language of instruction, and begin school with early literacy skills. Successful schools also are likely to have better working conditions and facilities as well as more instructional materials, such as books, computers, technological support, and supplies.

The learning environment of the school can be a positive influence, encouraging a positive attitude toward academic excellence and facilitating classroom instruction. Considerable research has shown that higher levels of school resources are associated with higher achievement. However, the relationship between resources and achievement is complicated. First, a school can have a more socioeconomically advantaged student population, for example, because of its location or because it competes for students. Second, the school system can invest more money into schools for such things as facilities, teachers' salaries, equipment, and materials. It follows that the most successful schools are likely to have more socioeconomically advantaged students and better resources.

### Schools with Students from Advantaged Home Backgrounds

The home backgrounds of students attending a school can be closely related to the learning environment, with the two reinforcing each other and being strongly linked to academic achievement. Students from home backgrounds supportive of learning are likely to have more positive attitudes toward learning and, perhaps, even better discipline. Beyond that, parents that have high educational expectations for their children are more likely to take an active interest in the quality of teachers and school facilities.

#### *School Location*

Depending on each country's characteristics, a school's location can have a substantial impact on whether the students attending that school typically are from economically and educationally advantaged home backgrounds. Also, depending on the country, the location of the school can provide access to important additional resources (e.g., libraries, media centers, or museums) or mean that the school is relatively isolated.

To provide some information about the urbanicity of each school's location, PIRLS 2011 asked principals to describe the population size of the city, town, or area in which their schools were located. Exhibit 5.1 shows the percentages of students together with their average achievement in PIRLS 2011 for schools located in cities, towns, or areas of three different population sizes: cities of more than 100,000; cities or towns of 15,001 to 100,000; and small towns, villages, or rural areas of 15,000 or fewer people. Countries are presented in alphabetical order with the fourth grade on the first page of the exhibit, followed by the sixth grade, the benchmarking participants, and the prePIRLS participants on the second page.

On average, across the fourth grade countries, 31 percent of the students attended schools in cities of more than 100,000, 27 percent attended schools in cities or towns of 15,001 to 100,000, and 43 percent in small towns or rural areas of 15,000 or fewer people. In general, the fourth grade students attending schools in cities of more than 100,000 people had the highest average reading achievement, followed by students in medium sized cities of 15,001 to 100,000, and then in small towns or rural areas. While nearly half of the fourth grade countries had this pattern, there were also countries where students attending schools in medium sized cities had higher average achievement than students in schools in cities larger than 100,000, or there was not much difference in average achievement between the two. There were also a number of countries where average reading achievement was highest among students attending schools in small towns or rural areas. The countries that assessed PIRLS 2011 at the sixth grade or participated in prePIRLS had relatively large percentages of students (43–82%) attending schools in small towns and rural areas, and these students had lower average reading achievement than students attending schools in cities larger than 100,000 people.

### *School Composition by Student Background*

Ever since the Coleman report (Coleman et al., 1966), researchers have recognized that the compositional characteristics of a school's student body can affect student achievement. Essentially, students from disadvantaged backgrounds typically have higher achievement if they attend schools where the majority of students are from advantaged backgrounds. To provide information on this topic, PIRLS routinely asks school principals to report on two demographic characteristics of their schools:

- ◆ Economic home background; and
- ◆ Language home background.

Previous assessments have found both to be strongly related to average reading achievement. For example, in PIRLS 2006 the reading achievement of students attending schools with a higher proportion of economically advantaged students was higher than for those attending schools with large proportions of disadvantaged students. Also, reading achievement was highest for students in schools where most students spoke the language of the PIRLS assessment as their first language, and was progressively lower as percentages of students not having the PIRLS language as their first language increased.

Reported by Principals

Country	Population Size of City, Town, or Area Where School Is Located					
	More than 100,000		15,001 to 100,000		15,000 or Fewer	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	42 (3.3)	542 (3.7)	30 (3.9)	517 (5.4)	28 (4.1)	519 (5.0)
Austria	24 (1.5)	523 (4.7)	9 (1.9)	526 (6.0)	66 (2.3)	531 (2.0)
Azerbaijan	16 (2.9)	477 (5.5)	21 (2.9)	472 (5.9)	63 (3.5)	455 (4.8)
Belgium (French)	16 (3.3)	507 (7.2)	39 (4.4)	500 (5.8)	45 (4.4)	514 (4.1)
Bulgaria	27 (2.6)	551 (6.6)	31 (3.6)	539 (7.3)	42 (3.0)	514 (7.3)
Canada	48 (2.5)	552 (2.6)	28 (2.2)	548 (3.2)	23 (1.9)	542 (2.2)
Chinese Taipei	56 (3.5)	563 (2.4)	39 (3.3)	542 (2.9)	6 (2.0)	523 (11.1)
Colombia	41 (3.6)	478 (6.8)	16 (3.2)	452 (6.9)	43 (4.0)	417 (5.7)
Croatia	16 (2.2)	574 (5.1)	23 (3.3)	555 (2.8)	61 (3.7)	547 (2.3)
Czech Republic	15 (2.5)	551 (7.1)	33 (3.1)	548 (3.5)	52 (3.2)	542 (2.9)
Denmark	13 (2.2)	554 (5.3)	33 (3.1)	560 (3.2)	54 (3.0)	551 (2.2)
England	39 (4.8)	547 (6.1)	35 (5.5)	551 (5.0)	26 (4.3)	561 (6.2)
Finland	31 (3.9)	569 (3.5)	39 (4.2)	570 (2.7)	30 (3.2)	564 (3.7)
France	11 (2.8)	538 (7.9)	28 (3.9)	508 (6.6)	62 (4.3)	522 (2.8)
Georgia	37 (2.9)	508 (4.9)	17 (2.3)	491 (5.8)	46 (2.4)	470 (4.4)
Germany	25 (3.2)	531 (4.9)	33 (3.7)	541 (4.1)	42 (3.5)	549 (2.5)
Hong Kong SAR	r 85 (3.4)	571 (3.2)	15 (3.4)	574 (6.1)	0 (0.0)	~ ~
Hungary	25 (2.6)	565 (5.9)	29 (3.2)	554 (4.8)	46 (2.2)	517 (5.1)
Indonesia	72 (4.1)	435 (5.2)	12 (2.8)	423 (12.5)	16 (3.6)	409 (10.7)
Iran, Islamic Rep. of	45 (3.5)	483 (4.5)	18 (2.9)	460 (7.0)	36 (3.4)	425 (4.8)
Ireland	17 (2.8)	535 (7.7)	27 (3.1)	550 (4.7)	57 (3.0)	557 (2.9)
Israel	22 (2.8)	561 (4.7)	44 (3.7)	543 (5.7)	34 (3.6)	526 (8.0)
Italy	16 (2.3)	545 (5.7)	34 (3.2)	538 (3.7)	50 (3.3)	542 (3.3)
Lithuania	35 (1.7)	549 (2.8)	19 (2.8)	530 (3.3)	46 (2.9)	512 (3.6)
Malta	0 (0.0)	~ ~	13 (0.1)	452 (4.7)	87 (0.1)	481 (1.5)
Morocco	r 30 (3.1)	353 (7.6)	27 (3.4)	304 (6.1)	43 (3.8)	288 (6.0)
Netherlands	r 17 (4.2)	539 (9.0)	48 (5.2)	550 (2.6)	35 (4.2)	546 (2.7)
New Zealand	44 (3.4)	535 (4.5)	24 (2.6)	539 (4.3)	32 (2.9)	526 (4.5)
Northern Ireland	r 23 (3.6)	562 (6.8)	29 (4.9)	554 (7.3)	48 (4.4)	564 (3.7)
Norway	20 (2.9)	512 (6.5)	45 (3.8)	510 (2.4)	34 (3.6)	500 (3.3)
Oman	r 4 (1.4)	386 (9.2)	17 (2.5)	402 (6.5)	79 (2.5)	381 (3.7)
Poland	24 (0.9)	543 (4.7)	24 (2.1)	528 (3.5)	52 (2.3)	518 (3.1)
Portugal	14 (2.5)	561 (6.4)	28 (4.3)	536 (4.9)	58 (4.5)	538 (4.0)
Qatar	34 (3.0)	461 (7.8)	24 (2.7)	411 (11.1)	42 (3.1)	402 (5.9)
Romania	21 (2.7)	556 (6.1)	15 (2.4)	534 (6.9)	65 (2.5)	477 (5.6)
Russian Federation	48 (1.6)	581 (3.7)	22 (2.3)	570 (4.8)	30 (2.0)	547 (4.4)
Saudi Arabia	57 (3.7)	431 (7.2)	15 (2.9)	431 (10.3)	28 (3.9)	430 (7.9)
Singapore	100 (0.0)	567 (3.3)	0 (0.0)	~ ~	0 (0.0)	~ ~
Slovak Republic	11 (2.1)	570 (4.7)	35 (3.3)	545 (3.1)	54 (2.9)	521 (3.8)
Slovenia	14 (2.8)	544 (7.3)	21 (3.4)	531 (3.4)	65 (3.6)	527 (2.2)
Spain	37 (3.3)	519 (4.9)	33 (3.6)	517 (3.8)	30 (3.3)	503 (4.0)
Sweden	16 (3.5)	549 (6.4)	38 (4.5)	541 (3.7)	46 (5.0)	539 (3.2)
Trinidad and Tobago	4 (1.7)	502 (25.3)	35 (3.9)	492 (7.7)	61 (4.0)	458 (5.0)
United Arab Emirates	50 (1.8)	455 (3.7)	22 (1.7)	427 (5.4)	28 (1.8)	408 (5.0)
United States	33 (2.2)	552 (3.5)	36 (2.4)	563 (2.3)	31 (2.3)	558 (3.9)
International Avg.	31 (0.4)	525 (1.0)	27 (0.5)	512 (0.9)	43 (0.5)	500 (0.7)

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.  
 A tilde (~) indicates insufficient data to report achievement.  
 An "r" indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 5.1: School Location (Continued)**

Country	Population Size of City, Town, or Area Where School Is Located					
	More than 100,000		15,001 to 100,000		15,000 or Fewer	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>						
Botswana	3 (1.6)	490 (34.3)	20 (3.2)	460 (13.5)	77 (3.3)	404 (3.7)
Honduras	21 (4.0)	488 (11.9)	15 (2.6)	478 (6.6)	64 (3.8)	430 (5.9)
Kuwait	8 (2.2)	436 (20.7)	42 (4.6)	409 (10.4)	50 (4.7)	420 (9.8)
Morocco	28 (3.2)	464 (5.1)	25 (3.6)	434 (5.7)	48 (3.6)	402 (8.2)
<b>Benchmarking Participants<sup>◊</sup></b>						
Alberta, Canada	45 (4.1)	553 (4.6)	25 (3.7)	552 (5.0)	30 (3.4)	541 (4.1)
Ontario, Canada	60 (4.2)	551 (3.5)	23 (3.1)	548 (6.2)	17 (3.7)	555 (6.4)
Quebec, Canada	37 (4.0)	538 (3.5)	35 (4.4)	542 (3.7)	28 (4.5)	530 (3.6)
Maltese – Malta	0 (0.0)	~ ~	13 (0.1)	448 (4.8)	87 (0.1)	458 (1.6)
Eng/Afr (5) – RSA	27 (4.8)	479 (15.3)	30 (3.7)	439 (12.5)	44 (5.6)	364 (14.6)
Andalusia, Spain	32 (3.9)	519 (5.1)	33 (4.1)	522 (4.6)	35 (4.0)	502 (3.4)
Abu Dhabi, UAE	46 (3.9)	441 (8.1)	21 (3.5)	400 (12.2)	33 (3.6)	402 (6.3)
Dubai, UAE	65 (0.3)	483 (2.5)	19 (0.2)	483 (5.5)	16 (0.2)	440 (4.3)
Florida, US	52 (6.5)	566 (4.9)	35 (5.8)	573 (5.1)	13 (4.2)	572 (17.1)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Population Size of City, Town, or Area Where School Is Located					
	More than 100,000		15,001 to 100,000		15,000 or Fewer	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	1 (1.0)	~ ~	17 (3.0)	493 (15.5)	82 (3.0)	456 (3.0)
Colombia	41 (3.6)	602 (5.2)	16 (3.2)	581 (6.4)	43 (4.0)	550 (4.8)
South Africa	20 (3.0)	493 (11.9)	29 (3.2)	458 (10.3)	51 (4.1)	438 (5.9)

Exhibit 5.2 presents principals' economic categorizations of their schools according to three categories that are fully described on the second page of the exhibit. To summarize, the **More Affluent** schools had more than one-fourth of their students from affluent home backgrounds and not more than one-fourth from disadvantaged home backgrounds, and the **More Disadvantaged** schools had the reverse situation. The other schools were "in between." Internationally, the students were distributed relatively equally across the three types of schools. On average, across countries at the fourth grade, 35 percent of the students attended schools with relatively more affluent students than disadvantaged students, and students in these schools had the highest average achievement (530). At the other end of the range, 30 percent of the students attended schools with relatively more disadvantaged students than affluent students, and students in these schools had the lowest average achievement (490). This pattern of achievement difference held across the sixth grade, benchmarking, and prePIRLS participants.

Exhibit 5.3 presents principals' categorizations of their schools according to the percentage of students who did not speak of the language of the PIRLS 2011 assessment as their first language. Two-thirds of the students were in schools where most students (more than 90%) spoke the language of the PIRLS assessment as their first language, and another 17 percent were in schools where the majority of students (51–90%) spoke the language of the assessment as their first language. Both groups of students had higher average reading achievement than the 14 percent of students attending schools where only half of the students (or less) spoke the language of the assessment as their first language (515 and 511 vs. 490, respectively). Among countries participating at the sixth grade and in prePIRLS, Botswana was notable for having almost all students (89–92%) in schools with half or fewer native speakers.

### *Schools Where Students Are Ready to Learn*

An important element of school readiness is having students with the prerequisite skills for the curriculum for their grade—that is, students academically ready to learn. Furthermore, students who begin school with higher reading achievement tend to maintain that advantage. For example, the Early Childhood Longitudinal Study conducted in the United States found that the majority of students in the highest one-third in reading achievement in kindergarten also were in highest one-third in fifth grade, and that the majority of students in the lowest one-third as kindergartners also were in the lowest

one-third in fifth grade (Princiotta, Flanagan, & Hausken, 2006). Also, as would be anticipated, PIRLS consistently finds a strong positive relationship between attending a school where most students entered school with the prerequisite skills for learning to read and reading achievement at the fourth grade.

PIRLS collects information about this important issue by asking school principals to estimate the percentages of students entering their schools able to perform each of five early literacy skills: recognize most of the letters of the alphabet, read some words, read sentences, write letters of the alphabet, and write some words. Of course, in countries where students start school at a young age (e.g., age 4 or 5 in England, Ireland, the Netherlands, New Zealand, and Northern Ireland), students have had fewer years to develop literacy skills prior to starting school.

Exhibit 5.4 presents the PIRLS results for the percentages of students entering school with early literacy skills and their average reading achievement. The first page of the exhibit shows that only 20 percent of the fourth grade students, on average, were in schools where most children entered school with early literacy skills, although these students had the highest average achievement on PIRLS 2011. There was variation across countries, but in general, the lower the percentage of students entering school with literacy skills, the lower the average achievement on PIRLS 2011; the 40 percent in schools where few students began school with literacy skills had the lowest average reading achievement. Again, this pattern also was evident across the sixth grade, the benchmarking participants, and prePIRLS.

Reported by Principals

Country	More Affluent – Schools Where More than 25% of Students Come from Economically Affluent Homes and Not More than 25% from Economically Disadvantaged Homes		Neither More Affluent nor More Disadvantaged		More Disadvantaged – Schools Where More than 25% of Students Come from Economically Disadvantaged Homes and Not More than 25% from Economically Affluent Homes	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	32 (3.9)	556 (3.9)	41 (4.0)	526 (3.6)	27 (3.4)	500 (5.7)
Austria	31 (4.0)	539 (2.9)	48 (3.8)	532 (2.4)	21 (3.9)	505 (4.4)
Azerbaijan	r 11 (2.5)	464 (10.5)	32 (4.7)	470 (8.1)	57 (4.9)	462 (6.1)
Belgium (French)	r 49 (5.5)	522 (3.1)	27 (4.5)	501 (6.4)	25 (4.5)	483 (4.6)
Bulgaria	15 (3.3)	561 (6.2)	43 (4.3)	549 (4.5)	42 (4.4)	506 (7.8)
Canada	39 (2.4)	557 (3.0)	34 (2.9)	549 (2.7)	28 (2.6)	533 (2.6)
Chinese Taipei	22 (3.3)	563 (4.5)	67 (3.5)	554 (2.4)	11 (2.0)	525 (6.8)
Colombia	r 7 (2.0)	521 (17.1)	15 (3.4)	471 (11.7)	78 (3.9)	432 (4.7)
Croatia	38 (4.0)	560 (3.1)	38 (4.2)	550 (2.3)	24 (3.2)	551 (4.9)
Czech Republic	37 (3.7)	551 (3.2)	46 (4.4)	548 (2.2)	17 (3.1)	524 (6.7)
Denmark	60 (3.6)	561 (2.1)	33 (3.3)	546 (3.0)	7 (1.8)	524 (7.7)
England	r 32 (4.8)	568 (4.9)	33 (4.9)	554 (4.0)	35 (4.0)	527 (4.7)
Finland	43 (4.2)	576 (2.4)	47 (4.3)	567 (2.7)	10 (2.6)	541 (4.0)
France	37 (4.3)	539 (3.5)	35 (3.9)	522 (4.6)	28 (3.7)	493 (4.7)
Georgia	16 (3.0)	496 (8.8)	41 (4.3)	494 (5.9)	43 (4.0)	480 (4.5)
Germany	21 (2.8)	555 (3.3)	53 (3.7)	549 (3.0)	26 (3.3)	512 (5.5)
Hong Kong SAR	20 (3.3)	580 (3.9)	30 (4.7)	569 (5.3)	50 (4.7)	568 (4.4)
Hungary	21 (3.6)	573 (6.3)	31 (4.3)	557 (4.2)	48 (4.0)	516 (5.2)
Indonesia	r 20 (4.1)	475 (5.6)	21 (3.9)	431 (7.7)	59 (4.6)	421 (6.0)
Iran, Islamic Rep. of	27 (3.6)	488 (7.6)	27 (4.1)	460 (6.7)	46 (4.2)	438 (4.8)
Ireland	r 39 (4.7)	568 (3.3)	30 (4.2)	554 (4.7)	31 (3.4)	523 (4.0)
Israel	r 35 (3.6)	566 (6.1)	28 (3.4)	559 (4.9)	37 (3.4)	500 (6.5)
Italy	37 (3.8)	541 (4.5)	43 (3.7)	545 (3.6)	20 (2.9)	531 (5.0)
Lithuania	19 (3.3)	552 (5.8)	43 (4.6)	529 (3.3)	38 (3.5)	518 (3.1)
Malta	47 (0.1)	482 (2.2)	43 (0.1)	478 (2.4)	10 (0.1)	421 (5.3)
Morocco	s 12 (2.1)	372 (16.7)	13 (2.8)	317 (11.6)	75 (3.3)	304 (6.1)
Netherlands	r 63 (4.9)	553 (2.3)	23 (3.9)	544 (2.6)	15 (3.8)	522 (8.2)
New Zealand	39 (3.4)	560 (3.2)	34 (3.6)	533 (3.7)	27 (2.5)	489 (4.2)
Northern Ireland	r 36 (4.7)	578 (4.9)	38 (4.3)	555 (3.3)	26 (3.8)	534 (5.8)
Norway	53 (5.3)	511 (3.3)	44 (5.3)	505 (2.9)	3 (1.2)	488 (16.9)
Oman	r 44 (3.4)	396 (4.3)	25 (2.9)	378 (6.7)	31 (2.9)	370 (5.1)
Poland	8 (2.1)	536 (10.2)	61 (3.8)	532 (2.9)	31 (3.7)	512 (3.5)
Portugal	30 (4.5)	552 (4.0)	39 (4.9)	547 (4.1)	31 (4.8)	522 (4.6)
Qatar	r 68 (3.0)	423 (5.0)	21 (2.3)	441 (10.6)	11 (1.9)	378 (7.5)
Romania	19 (3.1)	538 (9.2)	24 (4.0)	507 (8.8)	57 (4.8)	491 (6.5)
Russian Federation	58 (3.2)	576 (4.0)	29 (3.3)	562 (4.8)	13 (2.1)	549 (8.5)
Saudi Arabia	r 42 (4.7)	445 (8.5)	30 (4.3)	439 (6.0)	29 (4.0)	408 (10.0)
Singapore	40 (0.0)	590 (5.2)	50 (0.0)	556 (4.5)	10 (0.0)	541 (14.3)
Slovak Republic	24 (3.3)	551 (3.9)	56 (3.4)	542 (2.5)	20 (3.2)	499 (8.0)
Slovenia	42 (4.0)	533 (3.7)	40 (4.0)	531 (2.7)	18 (3.0)	521 (6.7)
Spain	51 (3.7)	527 (4.0)	31 (3.3)	511 (4.7)	18 (3.1)	482 (5.1)
Sweden	r 76 (4.2)	547 (2.8)	17 (4.1)	532 (7.2)	7 (1.5)	509 (8.5)
Trinidad and Tobago	20 (3.2)	508 (7.5)	26 (4.0)	464 (9.2)	54 (4.2)	460 (5.7)
United Arab Emirates	r 68 (2.2)	440 (3.6)	20 (1.6)	444 (6.2)	12 (1.7)	412 (5.5)
United States	r 18 (2.2)	591 (2.9)	31 (2.6)	570 (3.5)	51 (2.3)	537 (2.4)
International Avg.	35 (0.5)	530 (0.9)	35 (0.6)	515 (0.8)	30 (0.5)	490 (1.0)

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

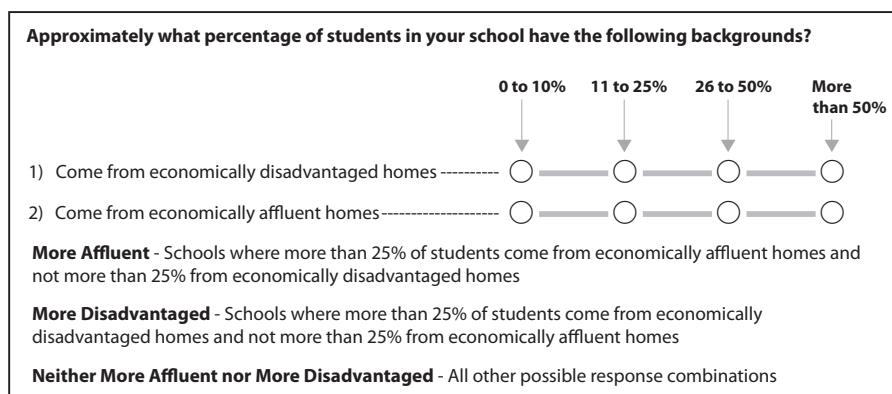


Country	More Affluent – Schools Where More than 25% of Students Come from Economically Affluent Homes and Not More than 25% from Economically Disadvantaged Homes		Neither More Affluent nor More Disadvantaged		More Disadvantaged – Schools Where More than 25% of Students Come from Economically Disadvantaged Homes and Not More than 25% from Economically Affluent Homes	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>						
Botswana	32 (3.6)	454 (7.9)	25 (4.0)	403 (8.3)	43 (4.3)	390 (4.3)
Honduras	r 16 (4.0)	518 (14.5)	13 (3.8)	440 (14.3)	71 (4.9)	444 (5.7)
Kuwait	r 30 (4.5)	429 (13.9)	35 (4.9)	431 (14.1)	35 (5.3)	402 (11.2)
Morocco	s 12 (2.3)	465 (16.5)	12 (2.6)	456 (11.1)	76 (3.1)	415 (5.8)
<b>Benchmarking Participants<sup>o</sup></b>						
Alberta, Canada	35 (3.7)	564 (4.8)	40 (4.3)	550 (4.3)	25 (3.8)	527 (5.5)
Ontario, Canada	r 32 (4.7)	557 (5.4)	34 (5.3)	555 (4.3)	34 (5.4)	537 (4.4)
Quebec, Canada	60 (4.1)	544 (2.6)	25 (4.0)	526 (5.2)	15 (2.7)	528 (4.9)
Maltese – Malta	47 (0.1)	459 (2.1)	43 (0.2)	467 (2.6)	10 (0.1)	419 (4.5)
Eng/Afr (5) – RSA	r 22 (4.1)	507 (15.1)	23 (6.1)	419 (20.4)	55 (6.7)	382 (13.5)
Andalusia, Spain	47 (4.3)	525 (3.9)	34 (3.5)	519 (3.2)	19 (3.7)	490 (5.9)
Abu Dhabi, UAE	s 75 (4.5)	423 (7.4)	12 (3.2)	422 (18.7)	13 (3.5)	402 (10.7)
Dubai, UAE	r 67 (0.4)	473 (2.8)	22 (0.3)	498 (4.3)	11 (0.2)	416 (5.0)
Florida, US	r 11 (4.6)	598 (5.1)	20 (4.7)	590 (9.1)	68 (4.7)	559 (4.5)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	More Affluent – Schools Where More than 25% of Students Come from Economically Affluent Homes and Not More than 25% from Economically Disadvantaged Homes		Neither More Affluent nor More Disadvantaged		More Disadvantaged – Schools Where More than 25% of Students Come from Economically Disadvantaged Homes and Not More than 25% from Economically Affluent Homes	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	32 (4.2)	500 (9.0)	23 (3.8)	462 (7.0)	46 (4.5)	440 (4.0)
Colombia	r 7 (2.0)	631 (12.5)	15 (3.4)	598 (8.4)	78 (3.9)	564 (4.3)
South Africa	r 7 (1.8)	575 (18.6)	15 (2.8)	456 (17.1)	78 (3.2)	445 (4.8)



**Exhibit 5.3: Schools with Students Having the Language of the Test as Their Native Language**

Reported by Principals

Country	More than 90% of Students		51–90% of Students		50% of Students or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	63 (3.8)	533 (2.9)	21 (2.8)	521 (5.7)	16 (3.1)	516 (9.0)
Austria	33 (4.1)	539 (2.6)	52 (4.7)	530 (2.6)	16 (1.9)	503 (5.6)
Azerbaijan	90 (2.6)	464 (2.9)	5 (1.9)	446 (8.8)	4 (1.8)	454 (41.9)
Belgium (French)	60 (3.8)	512 (3.3)	27 (4.4)	510 (4.7)	13 (3.2)	477 (8.8)
Bulgaria	51 (4.1)	558 (3.6)	23 (3.6)	520 (4.7)	26 (3.4)	492 (11.3)
Canada	55 (2.7)	550 (1.9)	27 (2.6)	550 (4.5)	19 (2.0)	542 (3.9)
Chinese Taipei	49 (3.8)	556 (2.9)	36 (3.8)	551 (3.5)	15 (2.6)	549 (5.3)
Colombia	98 (1.3)	449 (4.3)	2 (1.0)	~ ~	1 (0.8)	~ ~
Croatia	95 (1.7)	555 (1.8)	3 (1.2)	527 (4.4)	1 (1.1)	~ ~
Czech Republic	96 (1.5)	547 (2.0)	2 (1.1)	~ ~	1 (1.0)	~ ~
Denmark	66 (3.3)	558 (2.1)	29 (3.1)	551 (2.6)	5 (1.6)	523 (10.6)
England	60 (4.5)	558 (3.7)	19 (3.8)	550 (7.2)	21 (3.9)	532 (7.3)
Finland	85 (3.2)	569 (1.8)	15 (3.1)	562 (5.6)	1 (0.8)	~ ~
France	77 (4.0)	524 (2.8)	19 (3.8)	509 (6.1)	5 (1.8)	489 (17.5)
Georgia	92 (2.3)	488 (2.9)	7 (2.0)	496 (9.2)	1 (1.1)	~ ~
Germany	49 (2.9)	550 (2.5)	37 (2.8)	540 (3.6)	13 (2.4)	516 (6.5)
Hong Kong SAR	98 (1.2)	570 (2.4)	2 (1.2)	~ ~	0 (0.0)	~ ~
Hungary	96 (1.5)	541 (3.1)	3 (1.4)	535 (37.8)	1 (0.0)	~ ~
Indonesia	19 (3.1)	432 (9.8)	29 (4.7)	447 (7.1)	52 (4.4)	418 (5.1)
Iran, Islamic Rep. of	48 (3.4)	486 (4.0)	15 (3.5)	458 (6.9)	37 (2.9)	421 (5.2)
Ireland	64 (3.8)	560 (2.9)	33 (3.8)	539 (4.4)	3 (1.7)	510 (19.7)
Israel	75 (3.1)	536 (4.1)	20 (2.9)	560 (6.1)	5 (1.7)	549 (7.5)
Italy	64 (3.7)	541 (2.8)	30 (3.3)	542 (3.9)	6 (1.9)	535 (9.5)
Lithuania	88 (2.5)	529 (2.3)	8 (1.5)	535 (5.1)	4 (2.0)	505 (20.2)
Malta	6 (0.1)	524 (5.2)	12 (0.1)	521 (4.1)	82 (0.1)	470 (1.7)
Morocco	60 (4.0)	319 (6.0)	13 (2.2)	323 (8.4)	27 (4.1)	291 (6.7)
Netherlands	80 (3.4)	550 (2.1)	14 (2.8)	540 (4.2)	6 (2.4)	512 (9.6)
New Zealand	65 (3.8)	542 (3.3)	26 (3.4)	525 (5.3)	9 (2.1)	494 (11.1)
Northern Ireland	88 (3.1)	560 (2.8)	7 (2.4)	546 (10.5)	4 (1.9)	549 (12.4)
Norway	64 (4.6)	507 (2.2)	29 (4.6)	507 (4.5)	8 (2.9)	504 (10.5)
Oman	85 (1.9)	386 (3.3)	10 (1.8)	381 (11.1)	5 (1.2)	354 (12.1)
Poland	100 (0.0)	526 (2.1)	0 (0.0)	~ ~	0 (0.0)	~ ~
Portugal	92 (1.9)	543 (2.9)	6 (1.6)	515 (7.4)	2 (1.0)	~ ~
Qatar	40 (3.2)	395 (6.8)	9 (2.6)	460 (27.2)	51 (3.2)	455 (5.6)
Romania	88 (2.5)	502 (4.6)	8 (2.3)	495 (15.4)	4 (1.7)	504 (21.4)
Russian Federation	73 (3.7)	570 (3.2)	17 (2.8)	565 (4.5)	9 (2.3)	562 (11.7)
Saudi Arabia	88 (2.3)	433 (4.9)	8 (2.2)	409 (21.2)	5 (1.4)	416 (13.4)
Singapore	2 (0.0)	~ ~	32 (0.0)	582 (5.3)	65 (0.0)	558 (4.3)
Slovak Republic	89 (2.4)	539 (2.8)	7 (2.2)	517 (12.9)	4 (1.3)	484 (12.1)
Slovenia	70 (2.8)	532 (2.2)	28 (2.9)	528 (4.1)	2 (0.9)	~ ~
Spain	60 (2.4)	523 (2.9)	24 (2.5)	510 (4.0)	16 (2.1)	486 (6.1)
Sweden	57 (3.6)	549 (3.3)	28 (3.1)	545 (4.1)	15 (2.9)	507 (8.1)
Trinidad and Tobago	97 (1.8)	472 (4.1)	1 (0.0)	~ ~	2 (1.3)	~ ~
United Arab Emirates	47 (1.4)	407 (3.3)	8 (0.8)	455 (9.6)	45 (1.4)	462 (3.2)
United States	54 (2.5)	567 (2.6)	31 (2.5)	554 (3.6)	14 (1.8)	529 (4.0)
<b>International Avg.</b>	<b>68 (0.4)</b>	<b>515 (0.5)</b>	<b>17 (0.4)</b>	<b>511 (1.6)</b>	<b>14 (0.3)</b>	<b>490 (2.2)</b>

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.  
A tilde (~) indicates insufficient data to report achievement.  
An "r" indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 5.3: Schools with Students Having the Language of the Test as Their Native Language (Continued)**

Country	More than 90% of Students		51–90% of Students		50% of Students or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>						
Botswana	5 (1.9)	391 (11.3)	4 (1.7)	467 (40.5)	92 (2.5)	418 (4.4)
Honduras	95 (2.2)	453 (4.9)	3 (1.3)	412 (10.9)	2 (1.7)	~ ~
Kuwait	89 (2.9)	420 (6.5)	5 (2.0)	393 (22.5)	6 (2.1)	401 (22.8)
Morocco	59 (4.3)	432 (6.3)	13 (2.7)	426 (7.7)	28 (4.3)	412 (9.4)
<b>Benchmarking Participants<sup>◇</sup></b>						
Alberta, Canada	56 (4.2)	554 (3.0)	34 (4.3)	544 (5.4)	11 (2.3)	540 (10.7)
Ontario, Canada	44 (4.5)	558 (4.3)	29 (4.5)	547 (5.1)	27 (4.2)	545 (5.3)
Quebec, Canada	69 (3.8)	536 (2.4)	20 (3.2)	546 (5.1)	11 (2.4)	529 (4.3)
Maltese – Malta	75 (0.1)	461 (1.8)	16 (0.1)	448 (4.9)	9 (0.1)	438 (4.0)
Eng/Afr (5) – RSA	18 (2.4)	456 (13.7)	18 (3.9)	494 (18.6)	64 (4.1)	391 (12.5)
Andalusia, Spain	91 (2.1)	516 (2.5)	8 (1.9)	507 (9.3)	1 (0.7)	~ ~
Abu Dhabi, UAE	59 (2.5)	400 (5.6)	3 (1.5)	461 (50.2)	38 (2.6)	447 (6.9)
Dubai, UAE	15 (0.2)	431 (4.6)	15 (0.4)	485 (3.8)	70 (0.4)	483 (2.7)
Florida, US	43 (6.3)	577 (5.8)	33 (6.1)	563 (6.3)	24 (5.6)	564 (5.6)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	More than 90% of Students		51–90% of Students		50% of Students or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	6 (2.1)	473 (9.4)	5 (1.9)	462 (20.6)	89 (2.6)	465 (4.2)
Colombia	98 (1.3)	577 (3.5)	2 (1.0)	~ ~	1 (0.8)	~ ~
South Africa	63 (2.6)	444 (5.7)	17 (2.7)	451 (13.7)	20 (2.5)	493 (9.7)

Reported by Principals

Country	Schools Where More than 75% Enter with Skills		Schools Where 51–75% Enter with Skills		Schools Where 25–50% Enter with Skills		Schools Where Less than 25% Enter with Skills	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Singapore	80 (0.0)	574 (3.8)	14 (0.0)	541 (11.4)	5 (0.0)	536 (15.4)	1 (0.0)	~ ~
Spain	73 (3.0)	522 (2.6)	14 (2.5)	493 (5.9)	11 (2.3)	487 (7.8)	3 (0.9)	500 (11.0)
England	r 60 (5.0)	562 (4.1)	26 (4.6)	533 (7.4)	12 (3.1)	540 (7.8)	2 (1.6)	~ ~
Hong Kong SAR	51 (4.5)	575 (3.8)	24 (3.6)	568 (4.5)	23 (3.9)	560 (6.8)	3 (1.5)	576 (8.7)
Denmark	46 (3.4)	560 (2.5)	32 (3.4)	552 (3.1)	17 (2.5)	544 (4.6)	5 (1.3)	542 (5.2)
Qatar	46 (3.0)	446 (5.7)	21 (3.2)	411 (9.9)	15 (2.8)	417 (17.9)	18 (2.6)	392 (8.1)
Chinese Taipei	46 (4.5)	552 (3.3)	31 (3.9)	554 (2.9)	15 (3.2)	566 (4.9)	8 (2.1)	532 (7.9)
United Arab Emirates	43 (2.1)	462 (3.4)	15 (1.5)	430 (7.5)	18 (2.0)	409 (5.9)	25 (1.9)	412 (5.4)
Sweden	r 38 (5.0)	547 (4.0)	30 (4.0)	550 (3.9)	24 (4.2)	535 (5.0)	8 (2.1)	512 (7.0)
Colombia	25 (3.3)	474 (8.5)	28 (4.3)	437 (7.4)	14 (3.3)	449 (9.9)	33 (4.5)	435 (7.2)
Morocco	24 (2.8)	342 (9.1)	20 (3.2)	311 (8.9)	14 (2.5)	309 (8.2)	43 (3.3)	302 (7.7)
Finland	23 (3.9)	571 (4.3)	48 (4.1)	572 (2.6)	22 (3.4)	562 (3.5)	7 (3.1)	555 (5.7)
Israel	22 (3.3)	515 (9.0)	19 (3.2)	563 (8.1)	27 (4.0)	551 (7.9)	32 (3.7)	537 (8.1)
France	22 (3.6)	525 (5.7)	39 (4.7)	525 (4.5)	32 (4.4)	514 (4.5)	8 (2.5)	504 (7.6)
Malta	21 (0.1)	501 (2.8)	13 (0.1)	517 (3.9)	22 (0.1)	490 (3.4)	44 (0.1)	455 (2.3)
Indonesia	20 (3.5)	444 (9.8)	17 (4.2)	434 (13.9)	25 (3.9)	439 (6.7)	38 (4.9)	411 (5.4)
Trinidad and Tobago	20 (3.3)	494 (11.2)	24 (3.9)	476 (7.8)	30 (3.9)	468 (8.9)	26 (3.8)	456 (7.1)
Poland	19 (3.2)	528 (5.3)	25 (3.2)	529 (5.0)	31 (3.8)	527 (3.8)	26 (3.7)	521 (4.6)
Russian Federation	18 (2.5)	594 (6.0)	22 (3.0)	569 (5.8)	33 (2.6)	565 (4.4)	27 (3.0)	556 (4.0)
Romania	17 (3.3)	511 (10.1)	19 (3.5)	517 (11.9)	24 (4.3)	490 (9.3)	40 (4.5)	498 (7.0)
Georgia	16 (2.9)	491 (8.6)	5 (1.9)	475 (13.2)	19 (3.3)	480 (6.5)	60 (4.1)	490 (4.1)
Oman	16 (2.6)	389 (6.3)	12 (1.8)	389 (5.5)	22 (2.9)	387 (5.6)	51 (3.3)	381 (4.5)
Croatia	16 (2.8)	563 (5.4)	27 (3.2)	557 (3.4)	32 (3.9)	549 (3.8)	25 (3.4)	548 (2.8)
Lithuania	12 (2.3)	536 (5.7)	23 (3.7)	529 (4.7)	29 (3.8)	537 (4.8)	36 (3.6)	522 (3.8)
United States	r 11 (1.9)	573 (7.0)	15 (2.2)	578 (4.8)	28 (2.8)	563 (4.0)	46 (2.7)	545 (2.7)
Australia	11 (2.2)	539 (6.6)	14 (2.8)	537 (6.8)	21 (3.2)	545 (4.4)	54 (3.9)	518 (4.0)
Saudi Arabia	10 (2.5)	417 (11.5)	18 (3.5)	424 (13.3)	20 (3.5)	459 (7.9)	51 (4.4)	424 (7.0)
Bulgaria	10 (2.9)	559 (7.8)	20 (3.4)	564 (4.7)	25 (3.6)	548 (5.5)	44 (3.7)	500 (7.3)
Canada	10 (1.6)	556 (3.8)	13 (1.7)	558 (4.5)	22 (2.6)	554 (4.7)	55 (3.0)	542 (2.1)
New Zealand	10 (2.4)	563 (6.5)	10 (2.4)	563 (4.8)	19 (3.4)	549 (6.9)	62 (4.1)	519 (3.6)
Italy	7 (1.5)	543 (5.6)	21 (3.2)	534 (6.8)	31 (3.7)	542 (3.9)	41 (3.9)	545 (3.1)
Iran, Islamic Rep. of	7 (1.7)	465 (11.4)	7 (1.7)	477 (13.7)	16 (2.6)	461 (7.5)	70 (3.4)	454 (3.6)
Belgium (French)	6 (2.5)	512 (13.1)	24 (4.4)	508 (5.6)	37 (4.6)	512 (4.5)	32 (4.5)	497 (6.1)
Netherlands	r 4 (2.0)	542 (7.4)	20 (4.0)	547 (5.3)	38 (5.0)	546 (4.4)	38 (5.1)	547 (2.9)
Portugal	4 (1.7)	564 (17.4)	12 (2.6)	540 (6.5)	14 (3.0)	546 (6.8)	70 (3.7)	539 (3.2)
Azerbaijan	3 (1.4)	452 (7.9)	6 (1.3)	426 (13.5)	26 (3.5)	462 (7.2)	65 (3.6)	467 (4.1)
Slovenia	3 (1.2)	538 (14.3)	11 (2.5)	531 (4.9)	30 (3.4)	533 (3.1)	57 (3.8)	528 (2.9)
Germany	2 (1.0)	~ ~	4 (1.4)	538 (8.1)	22 (3.2)	544 (4.2)	72 (3.4)	541 (2.7)
Norway	1 (1.0)	~ ~	22 (4.1)	511 (4.7)	39 (4.7)	503 (3.4)	37 (4.8)	506 (3.7)
Northern Ireland	r 1 (0.9)	~ ~	2 (1.4)	~ ~	15 (3.5)	558 (9.7)	81 (3.4)	558 (2.9)
Slovak Republic	1 (0.7)	~ ~	5 (1.9)	556 (13.1)	13 (2.6)	540 (5.8)	81 (3.1)	533 (3.1)
Czech Republic	1 (0.7)	~ ~	2 (1.2)	~ ~	21 (3.4)	547 (3.8)	76 (3.7)	543 (2.5)
Hungary	0 (0.0)	~ ~	0 (0.0)	~ ~	9 (2.7)	561 (10.3)	91 (2.7)	538 (3.3)
Austria	0 (0.0)	~ ~	2 (1.2)	~ ~	15 (3.2)	525 (4.1)	82 (3.3)	529 (2.3)
Ireland	--	--	--	--	--	--	--	--
International Avg.	20 (0.4)	516 (1.3)	18 (0.5)	511 (1.2)	22 (0.5)	512 (1.1)	40 (0.5)	500 (0.8)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (-) indicates comparable data not available. A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

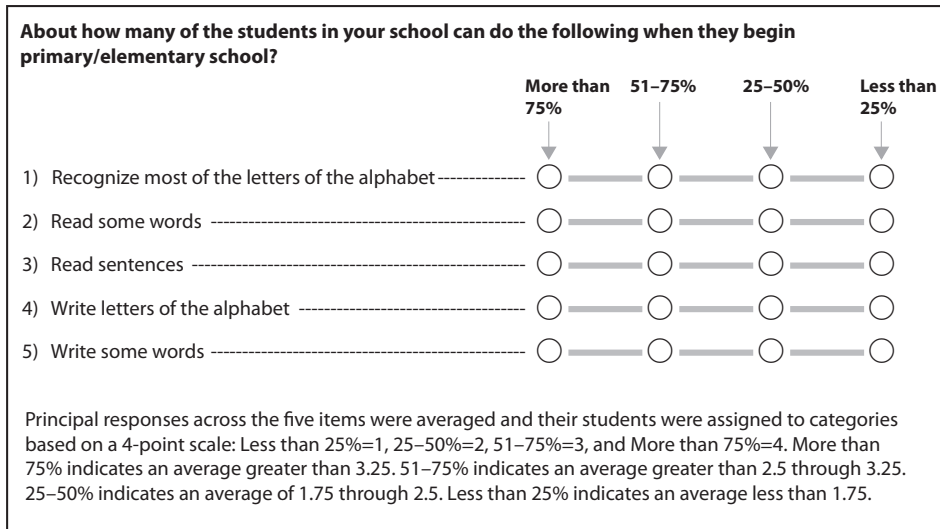
**Exhibit 5.4: Schools Where Students Enter the Primary Grades with Early Literacy Skills (Continued)**

Country	Schools Where More than 75% Enter with Skills		Schools Where 51–75% Enter with Skills		Schools Where 25–50% Enter with Skills		Schools Where Less than 25% Enter with Skills		
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>									
Kuwait	43 (4.5)	427 (11.6)	27 (4.0)	399 (12.7)	13 (3.6)	411 (28.1)	17 (3.8)	427 (13.2)	
Honduras	39 (4.6)	460 (9.3)	11 (2.8)	433 (17.9)	16 (3.6)	456 (7.9)	35 (4.5)	439 (7.9)	
Morocco	23 (2.7)	462 (6.7)	19 (2.9)	429 (8.0)	15 (2.7)	418 (13.9)	44 (3.8)	409 (7.3)	
Botswana	6 (1.7)	523 (26.8)	7 (2.0)	427 (14.3)	15 (3.2)	448 (7.9)	72 (3.8)	402 (4.3)	
<b>Benchmarking Participants<sup>◇</sup></b>									
Andalusia, Spain	62 (4.4)	521 (3.2)	22 (3.9)	506 (5.9)	8 (2.3)	509 (10.1)	8 (2.1)	491 (10.1)	
Dubai, UAE	60 (0.5)	484 (2.6)	13 (0.2)	469 (4.9)	7 (0.2)	454 (7.5)	20 (0.4)	454 (5.3)	
Abu Dhabi, UAE	35 (4.0)	453 (7.4)	17 (3.4)	407 (12.9)	21 (3.1)	403 (9.8)	26 (3.1)	395 (9.3)	
Eng/Afr (5) - RSA	18 (5.7)	456 (25.5)	15 (4.6)	490 (17.1)	32 (6.0)	415 (20.2)	35 (6.6)	419 (17.5)	
Alberta, Canada	17 (3.4)	557 (6.2)	17 (3.7)	568 (6.6)	20 (3.6)	550 (6.4)	45 (4.6)	541 (4.4)	
Florida, US	17 (5.4)	585 (11.7)	16 (5.3)	596 (9.9)	19 (5.4)	581 (7.7)	48 (5.1)	551 (4.9)	
Maltese - Malta	13 (0.1)	461 (3.7)	7 (0.1)	482 (6.0)	28 (0.1)	451 (2.9)	52 (0.1)	457 (1.9)	
Quebec, Canada	11 (2.5)	544 (8.1)	20 (3.9)	539 (3.5)	28 (4.0)	538 (3.8)	41 (4.7)	533 (3.6)	
Ontario, Canada	9 (2.9)	566 (6.4)	11 (3.1)	570 (12.3)	16 (3.4)	553 (7.9)	65 (4.6)	546 (3.2)	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Schools Where More than 75% Enter with Skills		Schools Where 51–75% Enter with Skills		Schools Where 25–50% Enter with Skills		Schools Where Less than 25% Enter with Skills	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Colombia	25 (3.3)	596 (6.7)	28 (4.3)	567 (6.6)	14 (3.3)	582 (8.0)	33 (4.5)	566 (5.8)
South Africa	9 (2.1)	519 (23.0)	20 (3.5)	459 (10.4)	29 (3.7)	449 (8.1)	42 (3.2)	444 (6.6)
Botswana	5 (1.7)	576 (17.2)	4 (1.7)	519 (36.0)	12 (2.9)	485 (13.1)	78 (3.6)	449 (2.7)



## Schools with Sufficient Facilities, Books, and Technology

Studies have shown that resources are crucial for improving schooling, perhaps even more so in developing countries than in economically developed countries, where adequate school structures and material resources can be taken for granted (Lee & Zuze, 2011). The extent and quality of school resources can have an important impact on the quality of classroom instruction. For example, the presence of a library or multimedia center may be particularly relevant for developing reading literacy.

### *School Resources*

To provide information on the extent to which school resources are available to support reading instruction, PIRLS routinely asks school principals about the degree of shortages or inadequacies in general school resources (materials, supplies, heating/cooling/lighting, buildings, space, staff, and computers) as well as about resources specifically targeted to support reading instruction (specialized teachers, computer software, library books, and audio-visual resources). Although “adequacy” can be relative, in each PIRLS assessment there has been a strong positive relationship between principals’ perceptions of the absence of school resource shortages and higher average reading achievement.

Exhibit 5.5 presents the PIRLS 2011 results for the Reading Resource Shortages scale. Students were scored according to their principals’ responses concerning eleven school and classroom resources (see the second page of the exhibit for details). Countries are ordered according to the percentage of students (from most to least) in schools **Not Affected** by resource shortages. Schools in this category had principals who reported that shortages affected instruction “not at all” for six of the eleven resources and only “a little” for the other five, on average. There was substantial variation across the fourth grade countries—from 0 to 56 percent, with an average of 24 percent of students attending well-resourced schools.

Schools where instruction was **Affected A Lot** had principals who reported that shortages affected instruction “a lot” for six of the eleven resources and “some” for the other five, on average. Many countries were fortunate to have very few, if any, students in such poorly resourced schools. However, this was a crucial problem in some countries. At 478 points, on average, reading achievement for students in schools **Affected A Lot** by resource shortages was substantially lower (45 points) than for students in schools **Not Affected** by resources shortages. For students at the sixth grade and in prePIRLS, there was

more impact from lack of resources with greater percentages of students in schools **Affected A Lot** by resource shortages.

### *Teacher Working Conditions*

There is evidence that, in some countries, teacher shortages may exist partly as a result of poor working conditions. For example, a review of research from the United States suggests that teachers who leave the profession after just a few years are more likely to leave because of poor working conditions than because of low pay (Johnson, 2006). Although teachers' reports across countries are related to their expectations and need to be considered in the context of variations in economic situations, PIRLS 2011 asked students' reading teachers to provide their views on the adequacy of their working conditions. More specifically, teachers were asked about five potential problem areas:

- ◆ The school building needing significant repair;
- ◆ Classrooms being overcrowded;
- ◆ Teachers having too many teaching hours;
- ◆ Teachers not having adequate workspace; and
- ◆ Teachers not having adequate instructional materials and supplies.

Exhibit 5.6 presents the results for the Teacher Working Conditions scale newly developed for PIRLS 2011. Countries are ordered by the percentage of students whose teachers reported few problems with their working conditions. Teachers with **Hardly Any Problems** with their working conditions reported “not a problem” for three of the five areas and only “minor problem” for the other two, on average. Similar to the findings based on principals' reports, there was a range of results across the fourth grade countries—from 5 to 49 percent, with an average of 27 percent of students in schools where teachers had **Hardly Any Problems**.

For this scale, the remaining two categories were **Minor Problems** and **Moderate Problems**. Teachers with **Moderate Problems** reported “moderate problem” for three of five conditions and “minor problem” for the other two, on average. About half of the students, on average, across the fourth grade countries were in schools where teachers had **Minor Problems** and about one-fourth were in schools with **Moderate Problems**. Students whose reading teachers reported **Moderate Problems** had lower reading achievement, on average, than those whose teachers reported **Hardly Any Problems**. The results for the sixth grade, benchmarking, and prePIRLS participants followed the same pattern,

**Exhibit 5.5: Instruction Affected by Reading Resource Shortages**

Reported by Principals

Students were scored according to their principals' responses concerning eleven school and classroom resources on the *Reading Resource Shortages* scale. Students in schools where instruction was **Not Affected** by resource shortages had a score on the scale of at least 11.2, which corresponds to their principals reporting that shortages affected instruction "not at all" for six of the eleven resources and "a little" for the other five, on average. Students in schools where instruction was **Affected A Lot** had a score no higher than 6.7, which corresponds to their principals reporting that shortages affected instruction "a lot" for six of the eleven resources and "some" for the other five, on average. All other students attended schools where instruction was **Somewhat Affected** by resource shortages.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Not Affected		Somewhat Affected		Affected A Lot		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Slovenia	56 (4.0)	531 (2.3)	44 (4.0)	529 (3.3)	0 (0.0)	~ ~	11.6 (0.12)
United States	45 (3.0)	563 (3.1)	54 (3.0)	554 (2.7)	1 (0.4)	~ ~	11.1 (0.12)
New Zealand	43 (3.6)	540 (4.4)	57 (3.6)	528 (3.3)	0 (0.0)	~ ~	11.2 (0.14)
Australia	42 (3.5)	537 (4.9)	57 (3.5)	521 (3.5)	1 (0.6)	~ ~	11.2 (0.14)
England	40 (4.6)	552 (4.8)	58 (4.9)	550 (4.2)	2 (0.1)	~ ~	10.9 (0.18)
Denmark	39 (3.5)	553 (3.3)	61 (3.5)	554 (2.0)	0 (0.0)	~ ~	10.9 (0.12)
Netherlands	38 (5.1)	550 (4.0)	62 (5.1)	545 (2.7)	0 (0.0)	~ ~	10.9 (0.11)
Spain	37 (3.5)	518 (4.1)	62 (3.3)	512 (2.8)	1 (0.9)	~ ~	10.7 (0.14)
Singapore	37 (0.0)	564 (5.2)	56 (0.0)	569 (4.4)	7 (0.0)	563 (13.3)	10.5 (0.00)
Austria	36 (4.3)	528 (3.6)	64 (4.3)	530 (2.6)	0 (0.0)	~ ~	10.7 (0.13)
Canada	36 (2.3)	548 (2.4)	64 (2.4)	549 (2.2)	1 (0.5)	~ ~	10.8 (0.09)
Poland	35 (3.7)	532 (4.1)	65 (3.7)	523 (2.7)	0 (0.0)	~ ~	10.9 (0.14)
Norway	34 (4.8)	504 (3.6)	66 (4.8)	509 (2.5)	0 (0.0)	~ ~	10.7 (0.16)
Sweden	33 (4.2)	547 (4.3)	67 (4.2)	539 (2.8)	0 (0.0)	~ ~	10.7 (0.15)
Bulgaria	33 (4.4)	531 (9.1)	67 (4.4)	532 (4.4)	0 (0.0)	~ ~	10.9 (0.13)
Georgia	33 (4.5)	486 (5.2)	67 (4.7)	487 (4.2)	1 (0.0)	~ ~	10.6 (0.15)
Qatar	31 (3.0)	447 (8.4)	41 (3.4)	435 (6.6)	28 (3.1)	393 (6.9)	9.1 (0.26)
United Arab Emirates	30 (1.9)	463 (4.5)	56 (2.4)	427 (3.5)	14 (1.5)	423 (7.2)	9.5 (0.10)
Hungary	30 (3.5)	550 (5.0)	68 (3.7)	536 (4.1)	2 (1.2)	~ ~	10.5 (0.17)
Germany	29 (2.9)	553 (4.1)	71 (2.9)	537 (2.6)	0 (0.0)	~ ~	10.6 (0.10)
Northern Ireland	28 (4.4)	562 (5.6)	71 (4.5)	557 (3.0)	1 (1.0)	~ ~	10.5 (0.18)
Czech Republic	28 (3.6)	543 (5.0)	71 (3.7)	546 (2.6)	2 (1.0)	~ ~	10.6 (0.13)
Ireland	27 (3.7)	557 (6.0)	71 (3.8)	550 (2.7)	1 (1.0)	~ ~	10.5 (0.14)
Finland	27 (3.6)	571 (3.2)	70 (3.6)	568 (2.3)	3 (1.6)	559 (10.1)	10.3 (0.16)
Croatia	26 (4.1)	553 (4.0)	72 (4.1)	551 (2.3)	2 (1.2)	~ ~	10.3 (0.15)
Malta	26 (0.1)	485 (2.6)	70 (0.1)	474 (1.7)	5 (0.0)	484 (6.4)	10.3 (0.00)
Lithuania	22 (3.5)	536 (4.1)	78 (3.5)	527 (2.6)	0 (0.0)	~ ~	10.2 (0.11)
Russian Federation	21 (3.0)	579 (5.4)	75 (3.2)	564 (3.3)	4 (1.5)	571 (9.2)	9.9 (0.16)
Israel	20 (3.7)	575 (6.2)	65 (4.2)	541 (5.0)	14 (2.5)	493 (11.1)	9.5 (0.17)
France	17 (3.1)	524 (7.2)	81 (3.4)	519 (2.9)	2 (1.3)	~ ~	10.0 (0.12)
Portugal	15 (2.8)	544 (5.3)	84 (2.9)	540 (3.2)	1 (0.8)	~ ~	9.7 (0.15)
Italy	14 (2.5)	545 (5.1)	86 (2.6)	541 (2.4)	1 (0.8)	~ ~	9.7 (0.09)
Slovak Republic	13 (2.3)	543 (6.1)	87 (2.3)	534 (2.9)	0 (0.0)	~ ~	9.9 (0.09)
Romania	13 (2.9)	524 (12.7)	85 (3.1)	498 (4.8)	2 (1.3)	~ ~	9.6 (0.13)
Chinese Taipei	7 (2.2)	556 (7.3)	77 (3.2)	551 (2.1)	15 (2.8)	560 (5.0)	8.5 (0.16)
Belgium (French)	7 (2.7)	523 (8.3)	92 (2.8)	506 (3.2)	1 (0.0)	~ ~	9.8 (0.11)
Saudi Arabia	6 (2.3)	455 (9.2)	87 (2.5)	429 (5.1)	7 (2.1)	425 (20.6)	8.9 (0.18)
Oman	5 (1.1)	405 (10.5)	79 (2.5)	379 (3.6)	15 (2.3)	404 (5.4)	8.4 (0.09)
Morocco	5 (1.4)	360 (18.1)	90 (1.9)	307 (4.4)	5 (1.4)	368 (28.3)	9.6 (0.10)
Iran, Islamic Rep. of	5 (1.7)	477 (17.4)	79 (3.9)	457 (3.4)	16 (3.7)	452 (6.9)	8.4 (0.12)
Indonesia	4 (1.5)	417 (12.4)	95 (1.7)	428 (4.5)	1 (0.8)	~ ~	9.3 (0.08)
Azerbaijan	2 (1.1)	~ ~	87 (3.1)	459 (3.9)	11 (2.9)	489 (10.0)	8.3 (0.12)
Colombia	2 (1.1)	~ ~	67 (4.3)	447 (5.5)	32 (4.2)	448 (7.2)	7.4 (0.13)
Trinidad and Tobago	1 (0.0)	~ ~	92 (2.2)	471 (4.1)	7 (2.1)	448 (12.3)	8.5 (0.10)
Hong Kong SAR	0 (0.0)	~ ~	91 (2.3)	570 (2.5)	9 (2.3)	566 (10.8)	8.0 (0.08)
<b>International Avg.</b>	<b>24 (0.5)</b>	<b>523 (1.1)</b>	<b>71 (0.5)</b>	<b>511 (0.5)</b>	<b>5 (0.2)</b>	<b>478 (3.0)</b>	

Centerpoint of scale set at 10.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.  
 A tilde (~) indicates insufficient data to report achievement.  
 An "r" indicates data are available for at least 70% but less than 85% of the students.



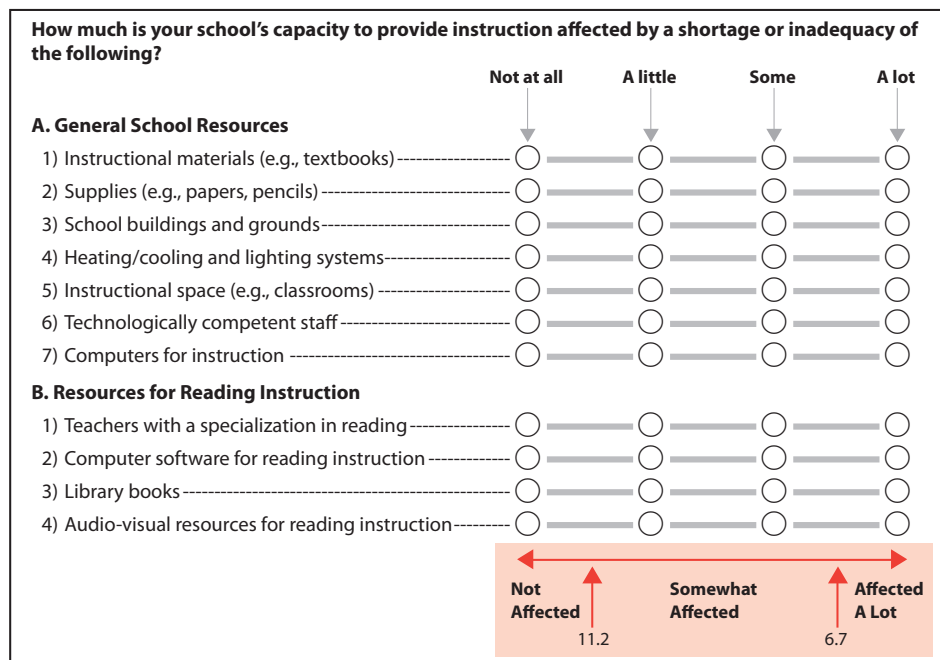
**Exhibit 5.5: Instruction Affected by Reading Resource Shortages (Continued)**

Country	Not Affected		Somewhat Affected		Affected A Lot		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	19 (4.0)	469 (16.8)	71 (4.2)	450 (3.9)	10 (3.2)	404 (17.9)	9.1 (0.22)
Morocco	5 (1.5)	462 (16.2)	90 (1.8)	422 (4.5)	5 (1.2)	465 (25.0)	9.6 (0.09)
Botswana	3 (1.2)	524 (22.9)	88 (2.9)	411 (3.5)	10 (2.6)	464 (24.8)	8.6 (0.13)
Kuwait	1 (0.0)	~ ~	77 (3.7)	420 (6.6)	22 (3.5)	411 (19.3)	7.5 (0.12)
<b>Benchmarking Participants<sup>◇</sup></b>							
Quebec, Canada	46 (4.8)	540 (2.7)	53 (4.8)	536 (3.0)	1 (0.7)	~ ~	11.0 (0.14)
Dubai, UAE	45 (0.5)	497 (3.0)	44 (0.5)	467 (3.1)	12 (0.2)	442 (7.8)	10.4 (0.02)
Alberta, Canada	43 (3.9)	549 (5.0)	57 (3.9)	549 (3.3)	0 (0.0)	~ ~	11.1 (0.14)
Florida, US	38 (6.0)	571 (7.3)	62 (6.0)	569 (3.9)	0 (0.0)	~ ~	11.2 (0.26)
Ontario, Canada	30 (4.3)	551 (4.4)	70 (4.3)	551 (3.3)	0 (0.0)	~ ~	10.7 (0.19)
Andalusia, Spain	28 (3.9)	520 (4.5)	72 (3.9)	513 (3.0)	1 (0.7)	~ ~	10.4 (0.13)
Abu Dhabi, UAE	27 (3.9)	443 (9.6)	55 (4.8)	410 (6.5)	18 (3.5)	417 (11.1)	9.1 (0.24)
Maltese – Malta	26 (0.1)	447 (3.0)	69 (0.1)	459 (1.7)	5 (0.0)	479 (6.1)	10.3 (0.00)
Eng/Afr (5) – RSA	10 (3.4)	492 (20.8)	84 (3.3)	408 (7.9)	6 (0.8)	401 (73.0)	9.2 (0.21)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Not Affected		Somewhat Affected		Affected A Lot		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
South Africa	3 (1.1)	547 (27.4)	92 (1.6)	454 (4.7)	4 (1.2)	414 (17.8)	9.0 (0.12)
Botswana	3 (1.3)	553 (41.1)	87 (2.7)	457 (3.2)	11 (2.8)	494 (23.4)	8.6 (0.12)
Colombia	2 (1.1)	~ ~	67 (4.3)	577 (4.6)	32 (4.3)	572 (5.9)	7.4 (0.13)



## Exhibit 5.6: Teacher Working Conditions

Reported by Teachers

Students were scored according to their teachers' responses concerning five potential problem areas on the *Teacher Working Conditions* scale. Students whose teachers had **Hardly Any Problems** with their working conditions had a score on the scale of at least 11.2, which corresponds to their teachers reporting "not a problem" for three of five areas and "minor problem" for the other two, on average. Students whose teachers had **Moderate Problems** had a score no higher than 8.6, which corresponds to their teachers reporting "moderate problem" for three of five conditions and "minor problem" for the other two, on average. All other students had teachers that reported **Minor Problems** with their working conditions.

Country	Hardly Any Problems		Minor Problems		Moderate Problems		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Poland	49 (3.6)	521 (2.8)	44 (3.5)	531 (3.3)	7 (1.5)	524 (7.4)	11.1 (0.13)
United States	47 (2.3)	562 (2.3)	42 (2.4)	551 (2.9)	11 (1.4)	552 (5.8)	11.0 (0.09)
Czech Republic	46 (4.1)	545 (3.4)	46 (4.1)	546 (3.2)	9 (2.2)	542 (5.2)	11.0 (0.15)
England	44 (4.3)	551 (4.8)	46 (4.7)	548 (4.6)	10 (2.9)	563 (10.7)	11.0 (0.15)
Australia	r 43 (4.5)	536 (4.8)	38 (4.4)	533 (5.4)	19 (2.7)	518 (6.1)	10.8 (0.20)
Qatar	42 (3.1)	429 (6.9)	43 (3.7)	424 (5.8)	15 (2.8)	413 (14.7)	10.6 (0.19)
United Arab Emirates	39 (2.2)	454 (5.4)	44 (2.9)	435 (4.4)	17 (1.8)	413 (6.3)	10.6 (0.09)
Canada	38 (2.2)	551 (2.4)	45 (2.8)	545 (2.2)	17 (2.4)	549 (7.0)	10.6 (0.09)
Bulgaria	38 (3.7)	525 (6.9)	50 (3.8)	538 (5.3)	12 (2.3)	533 (9.3)	10.6 (0.14)
Slovak Republic	37 (3.3)	535 (4.1)	50 (3.4)	533 (4.3)	13 (2.4)	543 (7.1)	10.5 (0.12)
Ireland	37 (3.6)	561 (3.7)	47 (3.3)	545 (3.8)	16 (2.3)	551 (5.8)	10.7 (0.16)
Northern Ireland	r 35 (4.8)	564 (4.8)	49 (4.3)	560 (4.2)	16 (3.5)	550 (6.5)	10.6 (0.20)
New Zealand	33 (3.1)	541 (4.5)	50 (3.1)	530 (3.9)	17 (2.3)	524 (8.3)	10.4 (0.12)
Hungary	32 (3.5)	526 (6.8)	50 (3.4)	545 (3.8)	18 (2.5)	544 (6.2)	10.3 (0.16)
Spain	32 (3.3)	515 (4.5)	47 (3.3)	513 (3.5)	21 (2.4)	511 (3.8)	10.2 (0.12)
Singapore	32 (2.7)	568 (6.2)	51 (2.9)	566 (4.8)	17 (1.9)	570 (6.9)	10.4 (0.11)
Lithuania	30 (3.2)	522 (3.8)	59 (3.3)	531 (2.8)	11 (2.1)	528 (5.3)	10.4 (0.11)
Austria	29 (3.5)	529 (3.3)	47 (3.8)	532 (3.0)	25 (3.8)	523 (3.1)	10.1 (0.17)
Slovenia	28 (3.6)	530 (3.1)	45 (4.0)	532 (3.0)	27 (3.2)	527 (4.0)	9.9 (0.14)
Belgium (French)	28 (3.8)	509 (6.8)	54 (4.3)	509 (3.3)	18 (3.3)	501 (8.7)	10.3 (0.14)
Croatia	27 (3.0)	546 (3.7)	51 (3.5)	555 (2.5)	21 (3.0)	558 (4.1)	10.2 (0.14)
Saudi Arabia	26 (3.5)	438 (10.6)	40 (4.0)	428 (5.6)	34 (4.0)	428 (9.1)	9.6 (0.17)
Romania	26 (3.4)	506 (7.9)	44 (4.2)	499 (6.8)	30 (3.6)	498 (8.2)	9.9 (0.15)
France	25 (3.4)	521 (5.6)	49 (3.7)	518 (3.3)	26 (3.4)	523 (4.1)	9.9 (0.13)
Georgia	24 (3.3)	495 (5.8)	53 (3.9)	480 (4.0)	23 (2.8)	498 (5.9)	9.9 (0.13)
Russian Federation	24 (3.0)	571 (5.7)	54 (4.0)	570 (3.1)	22 (2.9)	562 (6.3)	9.9 (0.12)
Malta	22 (0.1)	485 (2.7)	51 (0.1)	479 (1.8)	26 (0.1)	468 (3.3)	9.8 (0.00)
Netherlands	22 (3.5)	547 (3.1)	45 (3.5)	549 (2.3)	33 (3.9)	542 (3.9)	9.7 (0.17)
Denmark	21 (3.2)	553 (4.4)	55 (4.0)	554 (2.6)	24 (2.6)	555 (2.9)	9.8 (0.12)
Indonesia	21 (3.6)	431 (7.4)	53 (4.6)	434 (6.3)	26 (3.7)	415 (7.0)	9.8 (0.15)
Finland	20 (3.0)	564 (3.5)	62 (4.3)	568 (2.1)	18 (3.5)	573 (4.3)	10.0 (0.13)
Israel	20 (3.7)	539 (8.4)	42 (4.3)	545 (6.0)	38 (4.5)	543 (7.1)	9.5 (0.18)
Colombia	20 (3.4)	486 (8.3)	42 (4.4)	443 (7.2)	38 (4.6)	433 (6.2)	9.5 (0.19)
Italy	19 (2.6)	546 (4.8)	51 (3.8)	544 (3.1)	30 (3.7)	535 (4.4)	9.7 (0.12)
Azerbaijan	19 (3.0)	470 (9.0)	52 (3.7)	460 (4.3)	29 (3.2)	462 (5.0)	9.7 (0.14)
Chinese Taipei	19 (3.1)	547 (3.6)	59 (4.1)	557 (2.5)	23 (3.4)	548 (4.7)	10.0 (0.15)
Iran, Islamic Rep. of	18 (2.4)	474 (8.2)	51 (4.2)	456 (4.8)	31 (4.3)	450 (6.6)	9.6 (0.15)
Germany	16 (2.6)	548 (5.5)	44 (3.4)	548 (2.9)	40 (3.2)	531 (3.8)	9.3 (0.13)
Portugal	16 (4.7)	537 (10.0)	46 (4.8)	543 (4.0)	39 (4.7)	540 (3.9)	9.2 (0.26)
Hong Kong SAR	16 (3.5)	570 (7.0)	57 (4.9)	572 (2.8)	28 (4.0)	567 (5.1)	9.6 (0.14)
Norway	15 (3.4)	506 (6.3)	55 (4.3)	506 (2.6)	29 (4.6)	507 (4.2)	9.5 (0.19)
Trinidad and Tobago	14 (2.9)	477 (10.7)	38 (4.3)	472 (7.0)	47 (4.2)	469 (6.6)	8.9 (0.17)
Sweden	r 12 (2.9)	541 (6.0)	49 (4.3)	546 (3.1)	39 (4.4)	537 (4.1)	9.2 (0.17)
Oman	9 (1.6)	422 (7.3)	48 (2.9)	400 (4.1)	43 (3.1)	375 (3.9)	8.9 (0.10)
Morocco	5 (0.9)	413 (11.7)	20 (3.6)	335 (13.2)	76 (3.6)	298 (4.2)	7.8 (0.11)
International Avg.	27 (0.5)	518 (0.9)	48 (0.6)	514 (0.7)	25 (0.5)	509 (0.9)	

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

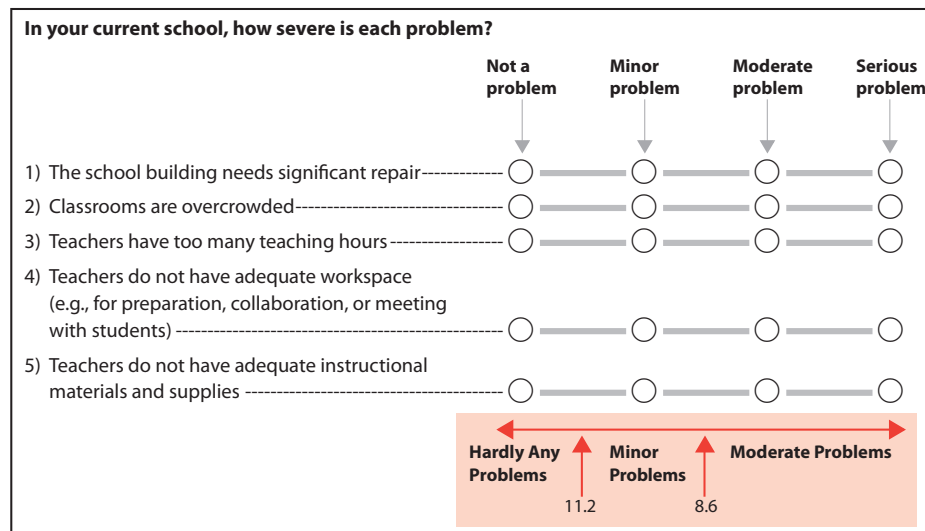
**Exhibit 5.6: Teacher Working Conditions (Continued)**

Country	Hardly Any Problems		Minor Problems		Moderate Problems		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Kuwait	34 (4.3)	416 (13.3)	42 (4.4)	422 (11.7)	24 (3.8)	415 (14.8)	10.1 (0.25)
Honduras	15 (3.1)	485 (15.3)	40 (4.5)	454 (6.0)	45 (4.4)	432 (7.4)	9.2 (0.17)
Botswana	6 (1.6)	483 (31.8)	42 (4.4)	420 (8.3)	52 (4.3)	412 (4.5)	8.5 (0.14)
Morocco	5 (1.3)	516 (14.2)	19 (4.7)	416 (20.0)	76 (4.7)	417 (4.3)	7.7 (0.16)
<b>Benchmarking Participants<sup>◇</sup></b>							
Florida, US	67 (5.5)	572 (4.2)	30 (5.5)	569 (6.8)	3 (2.2)	545 (8.5)	11.9 (0.20)
Ontario, Canada	46 (3.6)	555 (4.0)	47 (3.8)	546 (3.8)	7 (2.3)	555 (12.2)	11.0 (0.12)
Dubai, UAE	43 (4.1)	501 (5.6)	43 (4.5)	465 (8.2)	13 (2.0)	442 (12.6)	10.8 (0.11)
Alberta, Canada	42 (3.7)	551 (4.0)	42 (3.5)	546 (4.5)	17 (2.9)	546 (6.5)	10.8 (0.16)
Abu Dhabi, UAE	41 (4.4)	436 (9.6)	43 (4.2)	419 (8.0)	16 (2.8)	414 (12.4)	10.7 (0.21)
Quebec, Canada	34 (4.5)	545 (4.1)	49 (4.7)	536 (2.5)	17 (3.8)	527 (5.1)	10.4 (0.16)
Maltese – Malta	27 (0.1)	458 (2.2)	52 (0.1)	458 (2.3)	21 (0.1)	461 (2.8)	10.1 (0.01)
Eng/Afr (5) – RSA	25 (4.1)	509 (15.4)	38 (4.3)	421 (10.5)	37 (4.5)	371 (14.0)	9.4 (0.20)
Andalusia, Spain	25 (3.5)	512 (5.1)	51 (4.2)	514 (3.7)	24 (3.6)	520 (5.1)	9.9 (0.14)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Hardly Any Problems		Minor Problems		Moderate Problems		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	20 (3.4)	608 (6.5)	42 (4.4)	573 (5.6)	38 (4.6)	563 (5.6)	9.5 (0.19)
South Africa	12 (2.4)	520 (17.8)	42 (4.3)	480 (6.7)	45 (3.9)	426 (5.2)	8.7 (0.13)
Botswana	7 (1.8)	522 (21.1)	44 (4.2)	463 (6.4)	49 (4.1)	454 (3.6)	8.8 (0.13)



with agreement between teacher and principal reports and higher achievement for students in better school conditions. However, substantial percentages of students (nearly half in some cases) in the sixth grade and in the prePIRLS countries had teachers reporting **Moderate Problems** with school conditions.

### *Size of School Library*

Libraries, both within the school and in the local community, provide a range of reading materials and other resources from which teachers can draw to expand their instructional approaches, and from which students can choose books for their own learning and enjoyment. Also, with the growing use of technology, libraries increasingly are becoming media centers that offer a range of materials and Internet access. A recent online survey in England of 17,000 8- to 12-year-olds included questions about library use (Clark, 2010). The results indicated that library users were much more likely to read above their expected level, report enjoying reading, and have positive attitudes toward reading. It may seem obvious, but students cited the fact that they did or did not use the library because it did or did not have books that interested them. Perhaps if school libraries had books that interested students, more of these students would become readers, improve their reading skills, and find a new enjoyable pastime.

Exhibit 5.7 presents principals' reports about the existence and size of school libraries. Given the variation in policies across countries regarding school libraries and classroom libraries, in some cases the results in Exhibit 5.7 should be considered in light of the results about classroom libraries found in Exhibit 8.13. That is, some countries have well-resourced classroom libraries rather than a larger central library, so the lack of a school library does not necessarily mean that children do not have access to a variety of books. Also, primary schools tend to be smaller than middle and secondary schools, and may have small libraries as a result of their small enrollments.

On average, across the fourth grade countries, 28 percent of the students attended schools (for the most part primary schools) having well-resourced school libraries with more than 5,000 book titles. Another 40 percent of the students attended schools having libraries with between 501 and 5,000 book titles, and 18 percent attended schools having smaller library collections of 500 book titles or fewer. On average internationally, 14 percent of fourth grade students attended schools with no school library.

Internationally, fourth grade students attending schools with well-resourced school libraries had higher achievement than those with few library

books or no school library at all (525 vs. 500 and 498, respectively). For countries at the sixth grade and in prePIRLS, there were few students in schools with libraries of more than 5,000 books, and generally higher percentages of students with no school library.

### *Schools with Computers Available for Instruction*

The use of electronic texts and other technologies is emerging as an important part of students' literacy learning (Kamil, Intrator, & Kim, 2000). In many countries, computers are widely available in schools and Internet access is steadily increasing. Given the increasingly widespread availability of literacy materials on the Internet, access to computers that may be used for instructional purposes can be a crucial school resource. Researchers in the United States conducted a meta-analysis of 85 studies of technology use related to reading instruction in Grades K–12, involving 60,000 students, and found a small positive effect of technology on reading achievement compared to traditional instruction, though there was variation across studies (Cheung & Slavin, 2011).

Exhibit 5.8 shows principals' reports about the availability of computers for reading instruction. Internationally, 41 percent of the fourth grade students, on average, were in schools that had 1 computer for every 1–2 fourth grade students, 29 percent were in schools with 1 computer for every 3–5 fourth grade students, and 23 percent were in schools with 1 computer for 6 or more students. There was considerable variation from country to country, but, on average, only 7 percent of the fourth grade students were in schools that did not have any computers available for instruction. The percentages of students in schools with no computers for instruction were higher for the sixth grade and prePIRLS participants with the exception of Kuwait.

The relationship between computer availability and average reading achievement is difficult to interpret because it is highly interrelated with socio-economic levels and reading instructional practices. In the primary grades, computer instruction can be used for remedial purposes as frequently (if not more frequently) as it can be used to provide an increased variety of reading materials and reading activities. However, the fourth grade students with access to computers for instruction had higher average reading achievement than those students with no access to computers for instruction.

**Exhibit 5.7: Size of School Library**

Reported by Principals (Does not include classroom libraries)  
Exhibit 8.13 provides information about classroom libraries

Country	More than 5,000 Book Titles		501–5,000 Book Titles		500 Book Titles or Fewer		No School Library	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	56 (3.6)	530 (3.5)	42 (3.7)	525 (5.1)	1 (0.5)	~ ~	1 (0.0)	~ ~
Austria	1 (0.1)	~ ~	45 (4.5)	530 (2.8)	27 (4.2)	520 (4.3)	27 (3.6)	534 (3.4)
Azerbaijan	29 (3.6)	472 (5.1)	44 (4.1)	457 (7.6)	28 (3.7)	460 (6.7)	0 (0.0)	~ ~
Belgium (French)	4 (1.5)	519 (7.0)	26 (3.8)	509 (5.8)	40 (4.5)	504 (5.3)	29 (4.8)	504 (5.6)
Bulgaria	25 (3.6)	554 (5.2)	44 (4.3)	532 (7.3)	14 (2.9)	519 (13.1)	18 (3.4)	510 (9.7)
Canada	53 (2.7)	551 (2.0)	42 (2.8)	547 (3.2)	3 (0.7)	532 (8.1)	1 (0.4)	~ ~
Chinese Taipei	90 (2.8)	554 (2.0)	9 (2.7)	549 (6.2)	0 (0.0)	~ ~	1 (0.8)	~ ~
Colombia	11 (2.4)	497 (10.9)	26 (4.0)	467 (10.3)	27 (3.8)	431 (6.0)	37 (4.1)	435 (6.4)
Croatia	39 (4.2)	554 (2.7)	53 (4.3)	554 (2.7)	8 (1.8)	534 (7.3)	0 (0.0)	~ ~
Czech Republic	6 (1.6)	543 (6.7)	55 (4.1)	547 (3.3)	23 (3.6)	545 (3.2)	17 (3.5)	542 (4.5)
Denmark	73 (2.8)	554 (1.9)	22 (2.9)	554 (3.4)	1 (0.6)	~ ~	5 (1.4)	545 (12.5)
England	11 (2.9)	557 (12.0)	67 (4.8)	550 (4.1)	14 (3.4)	546 (8.4)	8 (2.8)	545 (9.9)
Finland	4 (1.7)	578 (10.1)	47 (4.3)	567 (2.7)	28 (3.8)	566 (4.4)	21 (3.4)	568 (4.2)
France	2 (1.2)	~ ~	43 (4.5)	519 (3.8)	28 (4.3)	519 (5.9)	27 (3.8)	520 (3.9)
Georgia	35 (3.2)	488 (4.5)	49 (3.6)	488 (5.9)	13 (2.4)	479 (6.8)	2 (1.3)	~ ~
Germany	2 (1.0)	~ ~	39 (3.4)	543 (3.6)	33 (3.6)	534 (4.4)	26 (3.3)	549 (4.4)
Hong Kong SAR	82 (3.3)	573 (2.7)	18 (3.3)	560 (5.6)	0 (0.0)	~ ~	0 (0.0)	~ ~
Hungary	52 (4.0)	548 (4.2)	41 (4.3)	533 (6.0)	3 (1.3)	524 (13.3)	4 (1.6)	530 (22.2)
Indonesia	6 (1.8)	442 (12.6)	39 (4.7)	436 (7.3)	33 (4.3)	436 (6.1)	22 (3.3)	409 (8.3)
Iran, Islamic Rep. of	3 (1.2)	516 (21.2)	40 (4.0)	481 (5.1)	37 (3.6)	451 (5.0)	20 (3.1)	423 (7.8)
Ireland	7 (2.1)	532 (7.9)	30 (4.0)	553 (4.6)	14 (2.9)	552 (5.5)	49 (4.7)	554 (3.7)
Israel	13 (2.9)	551 (12.5)	47 (4.6)	547 (4.9)	24 (4.0)	531 (9.4)	17 (3.2)	529 (12.6)
Italy	5 (1.4)	534 (10.4)	41 (3.9)	547 (3.4)	42 (3.8)	537 (3.5)	12 (2.6)	539 (4.5)
Lithuania	46 (3.9)	529 (3.2)	45 (4.0)	527 (3.7)	6 (1.7)	553 (10.9)	3 (0.8)	514 (6.3)
Malta	11 (0.1)	512 (4.2)	58 (0.1)	484 (2.0)	17 (0.1)	460 (3.2)	14 (0.1)	440 (4.6)
Morocco	0 (0.4)	~ ~	6 (2.1)	347 (31.0)	23 (2.9)	346 (10.1)	70 (3.3)	297 (4.5)
Netherlands	r 0 (0.0)	~ ~	37 (5.0)	551 (3.4)	46 (5.4)	541 (3.5)	17 (3.3)	551 (3.0)
New Zealand	47 (3.3)	541 (3.5)	52 (3.3)	526 (3.9)	1 (0.8)	~ ~	0 (0.0)	~ ~
Northern Ireland	r 3 (1.5)	549 (11.0)	51 (4.6)	556 (4.0)	15 (3.9)	549 (7.9)	31 (4.0)	569 (5.5)
Norway	18 (3.9)	513 (4.8)	73 (4.8)	505 (2.7)	4 (2.3)	515 (8.9)	5 (2.1)	501 (11.8)
Oman	r 11 (2.2)	382 (7.5)	58 (3.7)	386 (4.0)	10 (2.1)	400 (7.6)	21 (2.7)	371 (5.8)
Poland	65 (3.6)	528 (2.5)	32 (3.6)	519 (4.8)	2 (1.0)	~ ~	1 (0.9)	~ ~
Portugal	5 (2.2)	537 (14.9)	47 (5.6)	536 (4.0)	24 (4.2)	546 (7.1)	24 (4.0)	543 (5.1)
Qatar	52 (3.4)	443 (7.1)	34 (3.3)	398 (5.9)	13 (2.2)	411 (7.9)	1 (1.0)	~ ~
Romania	45 (3.9)	518 (6.3)	45 (4.2)	488 (7.0)	6 (1.7)	477 (15.9)	4 (1.7)	491 (22.8)
Russian Federation	65 (3.4)	570 (3.2)	31 (3.4)	568 (4.6)	3 (1.8)	554 (17.5)	1 (0.0)	~ ~
Saudi Arabia	3 (1.5)	473 (23.5)	17 (3.0)	419 (12.6)	55 (4.2)	431 (6.9)	25 (3.6)	435 (8.6)
Singapore	77 (0.0)	566 (3.8)	22 (0.0)	569 (6.5)	1 (0.0)	~ ~	0 (0.0)	~ ~
Slovak Republic	11 (2.0)	528 (6.7)	58 (3.9)	537 (3.8)	20 (3.2)	528 (5.8)	12 (2.6)	536 (5.6)
Slovenia	66 (2.9)	529 (2.0)	27 (3.6)	530 (4.3)	6 (2.7)	541 (7.0)	1 (0.6)	~ ~
Spain	21 (2.8)	522 (7.0)	65 (3.8)	513 (3.2)	10 (1.9)	515 (8.0)	5 (1.6)	510 (15.3)
Sweden	r 18 (3.7)	544 (4.9)	52 (5.0)	544 (3.8)	12 (3.4)	544 (6.1)	18 (3.8)	533 (6.1)
Trinidad and Tobago	2 (1.2)	~ ~	23 (3.6)	484 (10.7)	56 (4.4)	464 (5.5)	19 (3.4)	469 (9.8)
United Arab Emirates	r 27 (1.4)	479 (4.7)	47 (2.3)	429 (3.5)	23 (2.1)	404 (5.2)	3 (0.8)	450 (19.6)
United States	63 (2.6)	562 (2.2)	34 (2.8)	551 (3.8)	2 (0.8)	~ ~	1 (0.4)	~ ~
International Avg.	28 (0.4)	525 (1.4)	40 (0.6)	513 (1.1)	18 (0.4)	500 (1.3)	14 (0.4)	498 (1.8)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students.

**Exhibit 5.7: Size of School Library (Continued)**

Country	More than 5,000 Book Titles		501–5,000 Book Titles		500 Book Titles or Fewer		No School Library	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>								
Botswana	3 (1.2)	483 (42.9)	12 (2.7)	467 (22.8)	33 (4.1)	413 (7.3)	52 (4.5)	408 (5.0)
Honduras	0 (0.0)	~ ~	15 (3.5)	502 (12.5)	30 (4.2)	458 (8.5)	55 (4.2)	433 (6.0)
Kuwait	r 6 (2.0)	449 (29.1)	64 (4.5)	421 (9.1)	28 (4.3)	408 (11.8)	2 (1.1)	~ ~
Morocco	0 (0.3)	~ ~	7 (2.5)	431 (45.3)	24 (3.0)	444 (7.3)	68 (3.5)	416 (5.0)
<b>Benchmarking Participants<sup>◇</sup></b>								
Alberta, Canada	72 (4.3)	550 (3.8)	28 (4.2)	553 (5.3)	1 (0.6)	~ ~	0 (0.0)	~ ~
Ontario, Canada	48 (4.9)	556 (3.6)	46 (5.2)	551 (4.0)	5 (1.4)	531 (16.7)	1 (0.8)	~ ~
Quebec, Canada	42 (4.2)	542 (3.7)	52 (4.0)	536 (2.9)	5 (1.9)	533 (6.4)	2 (1.1)	~ ~
Maltese – Malta	11 (0.1)	479 (3.8)	57 (0.1)	454 (2.1)	17 (0.1)	456 (3.8)	14 (0.1)	444 (3.5)
Eng/Afr (5) – RSA	r 22 (5.0)	516 (25.7)	32 (6.2)	433 (13.3)	16 (4.5)	364 (27.6)	31 (5.7)	355 (17.2)
Andalusia, Spain	11 (2.4)	520 (6.8)	70 (3.8)	513 (3.0)	9 (1.8)	533 (3.8)	10 (2.5)	506 (10.6)
Abu Dhabi, UAE	r 22 (3.6)	443 (11.8)	46 (4.8)	420 (7.5)	27 (3.8)	408 (7.7)	5 (1.7)	454 (22.4)
Dubai, UAE	r 51 (0.2)	509 (2.9)	39 (0.2)	456 (3.3)	10 (0.2)	408 (5.8)	0 (0.0)	~ ~
Florida, US	r 63 (6.9)	569 (4.0)	32 (6.2)	574 (8.2)	3 (2.5)	535 (44.9)	2 (0.1)	~ ~

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	More than 5,000 Book Titles		501–5,000 Book Titles		500 Book Titles or Fewer		No School Library	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	2 (1.0)	~ ~	9 (2.6)	503 (20.0)	37 (3.9)	464 (5.8)	51 (4.0)	449 (4.2)
Colombia	11 (2.4)	616 (8.1)	26 (4.0)	592 (8.5)	27 (3.8)	562 (4.9)	36 (4.1)	566 (5.4)
South Africa	6 (1.6)	585 (28.5)	15 (2.4)	514 (10.5)	20 (2.9)	445 (9.3)	59 (3.6)	430 (4.4)

**Does your school have a school library?**

1) Yes  
2) No

If Yes,

**A. Approximately how many books with different titles does your school library have (exclude magazines and periodicals)?**

1) 250 or fewer  
2) 251–500  
3) 501–2,000  
4) 2,001–5,000  
5) 5,001–10,000  
6) More than 10,000

**Exhibit 5.8: Schools with Computers Available for Instruction**
*Reported by Principals*

Country	1 Computer for 1–2 Students		1 Computer for 3–5 Students		1 Computer for 6 or More Students		No Computers Available	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	65 (3.7)	528 (3.2)	26 (3.2)	526 (6.0)	9 (2.4)	533 (6.2)	0 (0.1)	~ ~
Austria	11 (2.4)	539 (5.7)	19 (2.7)	530 (4.7)	66 (3.7)	527 (2.3)	4 (3.0)	521 (21.8)
Azerbaijan	19 (3.2)	456 (12.1)	37 (4.1)	455 (5.4)	29 (3.7)	478 (5.2)	15 (3.2)	457 (8.7)
Belgium (French)	r 17 (3.7)	515 (6.6)	27 (5.0)	509 (6.3)	28 (5.1)	503 (6.8)	28 (4.6)	500 (5.1)
Bulgaria	40 (3.8)	522 (7.5)	32 (4.2)	543 (5.7)	27 (3.6)	534 (10.3)	1 (0.0)	~ ~
Canada	76 (2.0)	550 (2.2)	17 (1.9)	545 (3.4)	8 (1.6)	535 (3.8)	0 (0.0)	~ ~
Chinese Taipei	23 (2.7)	539 (3.9)	41 (3.7)	552 (3.6)	36 (3.6)	563 (2.7)	0 (0.0)	~ ~
Colombia	31 (3.7)	444 (8.6)	31 (4.6)	456 (7.3)	26 (4.1)	438 (7.0)	12 (3.0)	447 (10.5)
Croatia	12 (2.4)	549 (4.0)	21 (3.3)	556 (3.9)	50 (4.3)	555 (3.0)	17 (3.1)	550 (4.4)
Czech Republic	66 (3.5)	542 (3.0)	26 (3.1)	552 (3.2)	5 (1.9)	551 (5.6)	3 (1.5)	562 (6.2)
Denmark	87 (2.2)	553 (1.9)	9 (1.9)	561 (5.6)	3 (1.4)	562 (6.9)	0 (0.0)	~ ~
England	89 (3.0)	552 (3.1)	10 (3.0)	555 (9.4)	1 (0.5)	~ ~	0 (0.0)	~ ~
Finland	55 (4.3)	567 (2.5)	29 (4.1)	569 (3.7)	15 (3.2)	570 (3.7)	2 (1.2)	~ ~
France	34 (4.2)	519 (4.9)	47 (4.4)	517 (4.1)	17 (3.1)	526 (6.4)	3 (1.5)	533 (4.4)
Georgia	64 (3.7)	478 (3.6)	25 (3.6)	496 (8.5)	9 (2.7)	521 (7.7)	2 (1.1)	~ ~
Germany	21 (2.5)	533 (6.4)	49 (3.6)	546 (3.2)	28 (3.4)	546 (3.8)	1 (0.9)	~ ~
Hong Kong SAR	55 (4.4)	566 (4.1)	44 (4.4)	578 (3.3)	1 (0.8)	~ ~	0 (0.0)	~ ~
Hungary	53 (3.9)	532 (4.2)	26 (3.4)	550 (7.3)	11 (2.8)	563 (8.8)	10 (2.7)	533 (12.6)
Indonesia	x x	x x	x x	x x	x x	x x	x x	x x
Iran, Islamic Rep. of	1 (0.5)	~ ~	2 (0.8)	~ ~	23 (3.3)	473 (6.0)	74 (3.4)	449 (3.9)
Ireland	35 (3.8)	545 (4.6)	27 (3.7)	556 (5.3)	38 (4.4)	555 (4.2)	0 (0.0)	~ ~
Israel	29 (4.0)	541 (9.0)	46 (4.3)	545 (5.5)	20 (3.6)	537 (9.8)	5 (1.7)	519 (24.3)
Italy	20 (3.0)	539 (5.0)	34 (3.4)	541 (3.7)	45 (3.6)	541 (3.9)	1 (0.0)	~ ~
Lithuania	29 (3.2)	516 (4.4)	24 (3.9)	528 (5.0)	42 (3.9)	538 (3.8)	5 (1.8)	520 (11.9)
Malta	15 (0.1)	501 (3.0)	67 (0.1)	469 (1.9)	18 (0.1)	480 (3.5)	0 (0.0)	~ ~
Morocco	11 (2.2)	317 (15.5)	10 (2.2)	335 (14.3)	49 (4.0)	315 (5.4)	31 (3.9)	297 (8.1)
Netherlands	r 41 (5.1)	544 (3.2)	27 (5.1)	548 (4.3)	32 (5.9)	549 (4.5)	0 (0.0)	~ ~
New Zealand	59 (3.8)	532 (4.0)	34 (3.8)	535 (4.7)	7 (1.9)	526 (14.8)	0 (0.0)	~ ~
Northern Ireland	r 77 (4.3)	557 (3.1)	17 (3.8)	562 (7.1)	5 (2.3)	564 (9.5)	0 (0.0)	~ ~
Norway	58 (5.1)	507 (3.0)	26 (4.3)	504 (3.5)	16 (3.7)	511 (3.3)	1 (0.0)	~ ~
Oman	r 22 (2.3)	384 (5.6)	13 (1.9)	381 (9.6)	61 (2.8)	389 (4.1)	3 (0.8)	316 (14.1)
Poland	31 (3.0)	517 (4.4)	29 (3.7)	530 (3.3)	25 (3.4)	533 (4.4)	15 (2.6)	523 (6.6)
Portugal	15 (3.2)	551 (5.5)	20 (5.1)	533 (7.6)	58 (5.2)	543 (3.4)	7 (2.4)	535 (14.1)
Qatar	42 (3.5)	421 (6.7)	32 (3.7)	412 (8.5)	26 (1.3)	457 (8.3)	1 (0.6)	~ ~
Romania	42 (3.7)	488 (7.2)	34 (3.9)	510 (8.4)	19 (3.4)	517 (11.6)	5 (1.7)	508 (11.7)
Russian Federation	28 (3.0)	566 (6.0)	33 (4.0)	569 (4.6)	34 (3.4)	567 (4.7)	6 (2.1)	580 (8.4)
Saudi Arabia	16 (2.9)	423 (16.9)	20 (4.1)	432 (12.4)	28 (3.7)	429 (8.0)	36 (4.0)	434 (5.8)
Singapore	51 (0.0)	568 (4.7)	47 (0.0)	567 (5.1)	3 (0.0)	567 (34.2)	0 (0.0)	~ ~
Slovak Republic	81 (2.5)	534 (3.4)	14 (2.1)	535 (7.1)	4 (1.4)	534 (10.4)	0 (0.0)	~ ~
Slovenia	65 (3.3)	531 (2.4)	30 (3.7)	530 (3.9)	5 (1.6)	519 (9.0)	0 (0.0)	~ ~
Spain	50 (3.2)	505 (3.5)	33 (3.4)	520 (3.8)	13 (2.4)	532 (5.7)	4 (1.3)	515 (6.2)
Sweden	r 29 (3.6)	542 (5.3)	37 (4.6)	539 (4.3)	34 (4.4)	542 (3.7)	0 (0.0)	~ ~
Trinidad and Tobago	25 (3.4)	473 (9.9)	35 (3.9)	467 (6.9)	26 (3.2)	491 (8.0)	14 (2.7)	454 (10.8)
United Arab Emirates	r 32 (2.0)	426 (4.4)	40 (2.3)	419 (3.9)	27 (2.0)	461 (6.1)	1 (0.5)	~ ~
United States	r 67 (2.9)	562 (2.0)	27 (2.6)	554 (3.1)	7 (1.5)	540 (8.2)	0 (0.0)	~ ~
<b>International Avg.</b>	<b>41 (0.5)</b>	<b>513 (1.0)</b>	<b>29 (0.5)</b>	<b>517 (0.9)</b>	<b>23 (0.5)</b>	<b>517 (1.3)</b>	<b>7 (0.3)</b>	<b>488 (2.5)</b>

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students.

An "x" indicates data are available for less than 50% of students.



**Exhibit 5.8: Schools with Computers Available for Instruction (Continued)**

Country	1 Computer for 1–2 Students		1 Computer for 3–5 Students		1 Computer for 6 or More Students		No Computers Available	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>								
Botswana	13 (3.1)	429 (19.2)	15 (3.2)	467 (18.1)	41 (4.5)	412 (5.4)	31 (4.1)	404 (6.1)
Honduras	24 (3.9)	476 (12.0)	24 (4.0)	462 (5.9)	15 (2.7)	474 (7.6)	37 (4.0)	418 (9.0)
Kuwait	r 28 (3.6)	405 (14.2)	53 (4.5)	422 (6.8)	17 (4.0)	439 (26.3)	1 (0.9)	~ ~
Morocco	10 (2.2)	420 (13.9)	10 (2.1)	446 (10.1)	51 (3.6)	428 (7.7)	29 (3.4)	415 (5.2)
<b>Benchmarking Participants<sup>◊</sup></b>								
Alberta, Canada	94 (2.4)	549 (3.1)	5 (2.2)	533 (10.4)	1 (0.0)	~ ~	0 (0.0)	~ ~
Ontario, Canada	r 70 (4.1)	553 (3.4)	18 (3.6)	547 (5.3)	13 (3.9)	531 (4.6)	0 (0.0)	~ ~
Quebec, Canada	64 (3.6)	541 (3.1)	29 (3.6)	535 (3.3)	7 (2.5)	537 (8.3)	0 (0.0)	~ ~
Maltese - Malta	15 (0.1)	463 (3.2)	67 (0.1)	458 (2.1)	18 (0.1)	447 (3.8)	0 (0.0)	~ ~
Eng/Afr (5) - RSA	r 19 (4.6)	464 (27.7)	29 (5.6)	443 (13.8)	22 (5.8)	422 (23.2)	31 (5.1)	356 (19.5)
Andalusia, Spain	45 (4.2)	513 (4.0)	25 (3.5)	510 (4.2)	16 (3.7)	522 (5.8)	13 (3.1)	518 (7.0)
Abu Dhabi, UAE	r 30 (3.7)	409 (9.4)	43 (3.9)	416 (7.5)	25 (3.9)	426 (11.9)	2 (1.2)	~ ~
Dubai, UAE	r 35 (0.4)	478 (2.5)	35 (0.5)	444 (4.6)	30 (0.3)	484 (4.4)	0 (0.0)	~ ~
Florida, US	r 56 (6.3)	570 (4.5)	35 (6.2)	575 (7.3)	9 (3.5)	542 (11.9)	0 (0.0)	~ ~

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	1 Computer for 1–2 Students		1 Computer for 3–5 Students		1 Computer for 6 or More Students		No Computers Available	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	r 8 (2.4)	463 (31.1)	14 (3.3)	518 (16.9)	39 (4.3)	462 (4.9)	39 (4.0)	449 (5.2)
Colombia	31 (3.7)	573 (7.1)	31 (4.6)	582 (6.2)	26 (4.1)	571 (5.7)	12 (3.0)	573 (10.9)
South Africa	r 15 (2.9)	479 (18.3)	20 (2.8)	494 (13.2)	17 (2.8)	472 (10.0)	48 (3.7)	434 (7.2)

The number of students per computer was calculated by dividing the number of students by the number of computers.

1) **What is the total enrollment of fourth grade students in your school as of the first day of the month PIRLS 2011 testing begins?**

\_\_\_\_\_

2) **What is the total number of computers that can be used for instructional purposes by fourth grade students?**

\_\_\_\_\_



# Chapter 6

## School Climate

Students with the highest reading achievement typically attend schools that emphasize academic success, as indicated by rigorous curricular goals, effective teachers, students that desire to do well, and parental support. In contrast, schools with discipline and safety problems are not conducive to high achievement. Students that attended schools with disorderly environments and reported more frequent bullying had much lower achievement than their counterparts in safe and orderly schools.

The school's educational values are reflected by the teachers, school leadership, the students themselves, and their parents. A school with a positive atmosphere toward high achievement and a rigorous academic program can overcome resource shortages and encourage students toward excellent performance. By contrast, a school with more disciplinary problems is not conducive to higher student achievement. When students are fearful and worried about their safety, for example, it is difficult to focus on academics. Chapter 6 presents the PIRLS 2011 results about positive and negative aspects of the atmosphere in schools around the world.

### Schools Emphasize Academic Success

Studies of academic optimism show that a positive school atmosphere emphasizing academic achievement can even overcome socioeconomic disadvantages (McGuigan & Hoy, 2006). There are several dimensions of academic optimism, including a school communicating its academic emphasis through clear and rigorous academic goals. However, because individuals are the actors within schools, the effect on achievement is greatest when there is a collective influence. This includes a school administration and teachers that support and trust in students' achievement. In addition to making it clear that academic success is important, principals and teachers need to emphasize it can be achieved. Parents' support for their children's learning also contributes to a schools' collective efficacy or belief that the school's academic goals can be implemented.

#### *School Emphasis on Academic Success*

The PIRLS 2011 School Emphasis on Academic Success scale characterizes five aspects of academic optimism:

- ◆ Teachers' understanding of the school's curricular goals;
- ◆ Teachers' degree of success in implementing the school's curriculum;
- ◆ Teachers' expectations for student achievement;
- ◆ Parental support for student achievement; and
- ◆ Students' desire to do well in school.

This set of questions was given to both students' principals and teachers, with the respective responses used to create scales.

Exhibit 6.1 shows the principals' reports on the School Emphasis on Academic Success scale. As might be anticipated, principals had very positive attitudes about the emphasis on academics in their schools, so the three regions of the scale have been described as **Very High**, **High**, and **Medium**. Students were scored according to their principals' characterization of their school in terms of the five aspects. Students in schools with **Very High Emphasis** on academic success had principals characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in **Medium Emphasis** schools had principals characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

On average, across the fourth grade countries, 9 percent of the students attended schools where the principal reported a **Very High Emphasis** on academic success, 59 percent a school with a **High Emphasis**, and 32 percent a school with a **Medium Emphasis**. Although the results were not entirely consistent from country to country, internationally at the fourth grade, on average, there was a direct correspondence between average reading achievement and principals' reports, with higher emphasis on academic success related to higher average reading achievement. The results were similar for the sixth grade, benchmarking, and prePIRLS participants.

Exhibit 6.2 shows the teachers' reports on the School Emphasis on Academic Success scale, which were remarkably similar to those of the principals. That is, across countries at the fourth grade, 9 percent of the students, on average, were schools with **Very High Emphasis** on academic success, 60 percent in **High Emphasis** schools, and 31 percent in **Medium Emphasis** schools. Also, with each reported decrease in academic emphasis, the students had progressively lower average reading achievement. Finally, the results also were similar for the sixth grade, benchmarking, and prePIRLS participants.

**Exhibit 6.1: School Emphasis on Academic Success - Principal Reports**

Reported by Principals

Students were scored according to their principals' responses characterizing five aspects on the *School Emphasis on Academic Success* scale. Students in schools where their principals reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.0, which corresponds to their principals characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 8.8, which corresponds to their principals characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Northern Ireland	33 (4.2)	570 (4.9)	60 (4.3)	556 (2.9)	7 (2.5)	529 (9.8)	11.9 (0.19)
Qatar	31 (2.9)	447 (9.3)	54 (3.2)	424 (5.3)	15 (2.4)	383 (8.4)	11.5 (0.14)
Ireland	28 (3.7)	563 (3.6)	67 (3.8)	549 (3.3)	5 (1.8)	526 (7.4)	11.8 (0.16)
England	27 (4.3)	562 (5.9)	57 (4.6)	552 (4.4)	16 (2.8)	528 (5.8)	11.3 (0.20)
New Zealand	25 (3.4)	555 (4.6)	63 (4.2)	531 (3.7)	12 (2.2)	508 (9.3)	11.2 (0.14)
United States	24 (2.1)	578 (3.8)	59 (2.6)	555 (2.4)	17 (2.2)	538 (4.8)	11.2 (0.12)
United Arab Emirates	21 (1.6)	470 (5.6)	61 (2.0)	433 (3.2)	18 (1.7)	400 (5.7)	11.0 (0.09)
Chinese Taipei	17 (3.0)	555 (4.5)	71 (3.7)	554 (2.4)	12 (2.5)	544 (4.8)	11.2 (0.15)
Australia	16 (3.0)	554 (6.6)	64 (3.8)	531 (3.1)	21 (3.0)	498 (5.3)	10.8 (0.14)
Israel	15 (3.0)	564 (7.8)	72 (3.7)	545 (4.5)	14 (2.9)	499 (11.9)	11.0 (0.14)
Malta	13 (0.1)	488 (4.3)	69 (0.1)	488 (1.7)	18 (0.1)	431 (3.8)	11.0 (0.01)
Canada	12 (1.7)	570 (3.8)	67 (2.5)	549 (2.4)	21 (2.0)	535 (2.8)	10.5 (0.09)
Indonesia	9 (2.6)	433 (9.6)	56 (5.2)	428 (5.9)	34 (5.1)	429 (7.7)	10.3 (0.18)
Iran, Islamic Rep. of	9 (2.0)	466 (12.8)	70 (3.4)	464 (3.9)	21 (2.7)	433 (5.7)	10.5 (0.12)
Saudi Arabia	9 (2.7)	473 (14.3)	59 (4.1)	439 (4.9)	32 (3.4)	402 (8.6)	10.1 (0.18)
Croatia	9 (2.5)	567 (7.2)	70 (3.8)	553 (2.0)	21 (3.4)	546 (4.3)	10.6 (0.14)
Sweden	9 (2.7)	553 (6.8)	59 (4.8)	543 (3.0)	32 (5.0)	535 (3.8)	10.2 (0.17)
Oman	9 (1.8)	394 (9.5)	73 (3.0)	388 (3.4)	18 (2.2)	365 (6.9)	10.5 (0.10)
Austria	8 (2.1)	535 (6.9)	75 (4.4)	530 (2.1)	17 (3.9)	520 (5.1)	10.2 (0.14)
Singapore	8 (0.0)	594 (10.9)	62 (0.0)	573 (4.4)	31 (0.0)	549 (6.4)	10.1 (0.00)
Denmark	6 (1.7)	568 (7.2)	64 (3.3)	557 (2.1)	30 (3.4)	544 (3.6)	10.1 (0.13)
Finland	6 (1.9)	576 (5.7)	71 (4.2)	571 (2.1)	24 (4.2)	559 (3.8)	10.2 (0.16)
Lithuania	6 (2.0)	532 (12.2)	65 (3.6)	535 (2.7)	29 (3.4)	514 (4.8)	9.9 (0.13)
Bulgaria	5 (1.7)	568 (19.5)	53 (4.1)	544 (4.7)	42 (4.2)	512 (6.5)	9.5 (0.15)
Colombia	5 (1.7)	516 (15.0)	46 (4.7)	453 (6.5)	50 (4.5)	436 (5.5)	9.2 (0.20)
Portugal	4 (1.9)	551 (8.6)	64 (4.8)	546 (3.9)	31 (4.4)	530 (4.8)	9.9 (0.13)
Trinidad and Tobago	4 (1.7)	524 (12.9)	44 (4.0)	486 (7.1)	52 (4.1)	454 (5.0)	9.0 (0.15)
Azerbaijan	4 (1.7)	481 (8.0)	44 (3.8)	463 (6.7)	53 (3.8)	459 (4.2)	9.1 (0.15)
Romania	4 (1.6)	543 (21.1)	55 (4.1)	515 (5.5)	41 (4.1)	481 (7.9)	9.3 (0.15)
Poland	3 (1.6)	559 (22.8)	70 (3.5)	529 (2.5)	26 (3.7)	515 (3.9)	9.6 (0.15)
Morocco	3 (1.0)	401 (15.6)	24 (2.8)	339 (8.1)	73 (2.7)	300 (4.9)	7.9 (0.13)
Spain	3 (1.3)	556 (8.2)	58 (4.0)	520 (3.3)	39 (3.8)	501 (4.6)	9.5 (0.11)
France	2 (1.2)	~ ~	64 (4.3)	525 (3.0)	34 (4.3)	510 (5.1)	9.7 (0.13)
Slovenia	2 (0.8)	~ ~	63 (2.9)	530 (2.4)	35 (3.1)	530 (3.3)	9.5 (0.11)
Russian Federation	2 (0.9)	~ ~	50 (4.4)	576 (3.8)	48 (4.3)	562 (3.5)	9.1 (0.11)
Hong Kong SAR	1 (0.9)	~ ~	60 (4.5)	570 (2.7)	39 (4.6)	570 (4.7)	9.6 (0.15)
Italy	1 (0.8)	~ ~	52 (3.7)	541 (3.2)	46 (3.7)	544 (3.2)	9.3 (0.10)
Hungary	1 (0.9)	~ ~	49 (3.9)	559 (3.6)	50 (3.9)	521 (4.8)	8.9 (0.13)
Czech Republic	1 (0.9)	~ ~	45 (3.9)	547 (3.5)	54 (4.0)	544 (2.6)	8.8 (0.13)
Norway	1 (0.1)	~ ~	64 (4.7)	510 (2.8)	34 (4.7)	500 (2.7)	9.7 (0.13)
Germany	1 (0.8)	~ ~	66 (3.4)	551 (2.4)	33 (3.3)	524 (4.6)	9.7 (0.11)
Georgia	1 (0.9)	~ ~	46 (3.9)	490 (5.2)	53 (3.6)	485 (4.0)	9.0 (0.11)
Belgium (French)	1 (0.0)	~ ~	47 (4.7)	513 (4.4)	52 (4.7)	500 (4.2)	9.0 (0.15)
Slovak Republic	1 (0.7)	~ ~	41 (3.4)	545 (3.6)	58 (3.4)	528 (3.9)	8.7 (0.10)
Netherlands	0 (0.0)	~ ~	59 (5.1)	548 (3.0)	41 (5.1)	544 (3.3)	9.4 (0.16)
International Avg.	9 (0.3)	527 (1.9)	59 (0.6)	517 (0.6)	32 (0.5)	497 (0.8)	

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students.

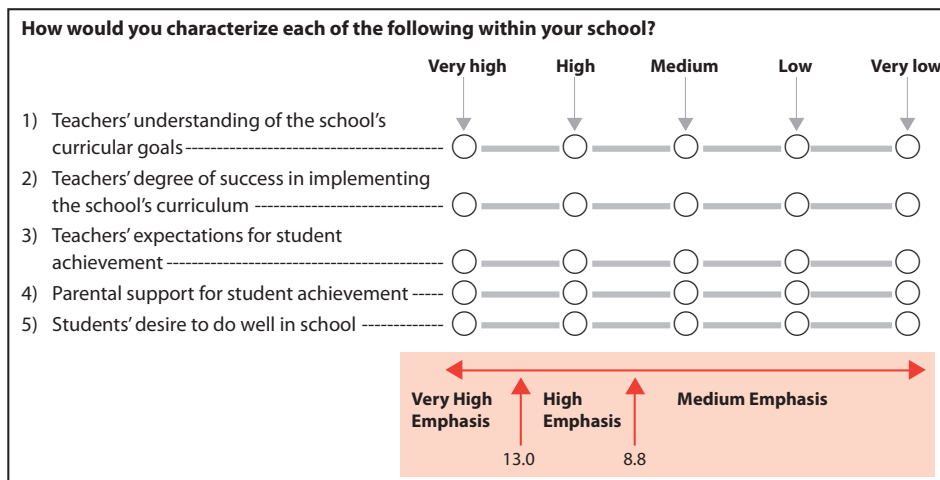
SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 6.1: School Emphasis on Academic Success - Principal Reports (Continued)**

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	10 (2.5)	435 (14.2)	61 (4.5)	448 (7.7)	29 (4.1)	456 (5.7)	10.1 (0.17)
Kuwait	7 (2.3)	453 (26.5)	51 (4.0)	417 (10.3)	41 (4.0)	411 (7.8)	9.4 (0.17)
Botswana	5 (1.8)	522 (23.7)	29 (3.8)	441 (9.1)	66 (4.1)	401 (3.7)	8.7 (0.18)
Morocco	3 (0.8)	501 (15.7)	23 (2.7)	449 (7.6)	74 (2.7)	415 (4.9)	7.8 (0.15)
<b>Benchmarking Participants<sup>◊</sup></b>							
Dubai, UAE	35 (0.3)	507 (3.4)	49 (0.5)	473 (2.9)	16 (0.4)	401 (6.1)	11.7 (0.02)
Florida, US	26 (4.7)	594 (5.4)	58 (5.3)	559 (4.5)	16 (4.6)	569 (9.8)	11.4 (0.27)
Alberta, Canada	25 (4.0)	566 (5.7)	62 (4.5)	545 (3.6)	13 (2.7)	537 (7.2)	11.4 (0.17)
Abu Dhabi, UAE	17 (3.4)	443 (12.1)	68 (3.8)	418 (5.1)	15 (3.0)	397 (14.6)	10.9 (0.17)
Maltese - Malta	13 (0.1)	470 (3.9)	69 (0.1)	459 (1.9)	18 (0.1)	438 (3.3)	11.0 (0.01)
Ontario, Canada	10 (3.1)	568 (10.7)	62 (4.0)	554 (3.3)	28 (4.1)	538 (4.4)	10.2 (0.17)
Eng/Afr (5) - RSA	9 (3.3)	509 (66.0)	44 (5.5)	444 (9.7)	46 (6.0)	371 (11.6)	9.3 (0.28)
Quebec, Canada	5 (1.6)	580 (8.3)	75 (3.6)	538 (2.1)	21 (3.4)	528 (4.8)	10.3 (0.12)
Andalusia, Spain	3 (1.5)	536 (15.2)	61 (3.7)	522 (3.0)	36 (3.7)	500 (4.2)	9.6 (0.12)

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	5 (1.7)	631 (12.3)	46 (4.7)	580 (5.0)	50 (4.5)	568 (4.8)	9.2 (0.20)
South Africa	4 (1.4)	536 (49.7)	40 (3.4)	469 (7.2)	56 (3.5)	439 (5.0)	8.9 (0.15)
Botswana	3 (1.4)	538 (22.5)	41 (4.1)	487 (7.3)	56 (4.2)	442 (3.4)	8.9 (0.19)



## Exhibit 6.2: School Emphasis on Academic Success - Teacher Reports

Reported by Teachers

Students were scored according to their teachers' responses characterizing five aspects on the *School Emphasis on Academic Success* scale. Students in schools where their teachers reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.0, which corresponds to their teachers characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 8.7, which corresponds to their teachers characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Northern Ireland	28 (4.2)	572 (3.9)	65 (4.4)	557 (3.7)	7 (2.2)	533 (8.5)	11.7 (0.19)
England	25 (4.2)	566 (7.3)	58 (4.8)	552 (3.4)	17 (3.1)	523 (5.9)	11.1 (0.16)
Ireland	22 (3.1)	566 (3.5)	69 (3.0)	552 (2.9)	9 (1.9)	519 (6.8)	11.4 (0.15)
Croatia	21 (3.0)	554 (3.7)	69 (3.6)	553 (2.2)	10 (2.2)	555 (6.3)	11.3 (0.12)
Indonesia	20 (3.5)	442 (7.9)	57 (4.7)	431 (6.0)	23 (3.9)	415 (6.9)	10.8 (0.18)
Israel	19 (2.9)	564 (6.8)	68 (3.9)	547 (4.0)	13 (2.9)	492 (11.9)	11.1 (0.14)
New Zealand	18 (2.0)	567 (4.9)	65 (2.8)	529 (3.3)	17 (2.3)	511 (4.7)	11.1 (0.11)
Qatar	17 (3.1)	439 (14.2)	66 (3.9)	423 (5.0)	17 (3.0)	416 (11.2)	10.8 (0.15)
Australia	17 (3.0)	554 (8.8)	63 (4.4)	533 (3.6)	20 (3.1)	507 (4.3)	10.7 (0.16)
United States	16 (1.7)	575 (4.9)	63 (2.4)	558 (2.1)	21 (2.0)	538 (4.5)	10.8 (0.10)
United Arab Emirates	15 (1.8)	470 (9.1)	67 (2.7)	437 (3.2)	18 (1.8)	417 (6.9)	10.9 (0.09)
Saudi Arabia	15 (3.4)	454 (9.1)	61 (4.1)	437 (6.5)	25 (3.0)	398 (10.0)	10.4 (0.16)
Malta	12 (0.1)	515 (3.7)	65 (0.1)	475 (1.8)	23 (0.1)	462 (3.1)	10.4 (0.00)
Austria	10 (2.1)	544 (6.2)	71 (2.8)	531 (2.3)	19 (2.6)	514 (4.4)	10.4 (0.12)
Canada	10 (1.2)	570 (4.3)	68 (2.5)	549 (2.2)	22 (2.4)	536 (3.4)	10.4 (0.11)
Iran, Islamic Rep. of	9 (1.8)	467 (11.6)	68 (3.5)	466 (3.9)	23 (3.0)	427 (6.6)	10.4 (0.13)
Romania	9 (2.3)	497 (15.2)	61 (3.7)	513 (5.4)	30 (3.3)	477 (8.2)	10.1 (0.16)
Azerbaijan	8 (2.1)	478 (13.6)	40 (3.5)	464 (4.9)	52 (3.5)	459 (5.3)	9.4 (0.14)
Chinese Taipei	7 (1.9)	557 (6.9)	67 (3.8)	554 (2.3)	26 (3.6)	548 (3.9)	10.0 (0.16)
Poland	7 (2.0)	526 (4.8)	76 (3.2)	527 (2.5)	17 (2.8)	519 (4.8)	10.2 (0.12)
Oman	7 (1.5)	415 (6.3)	72 (2.9)	398 (3.3)	21 (2.7)	361 (5.5)	10.4 (0.11)
Hong Kong SAR	7 (2.0)	583 (6.4)	58 (4.1)	572 (3.1)	36 (4.2)	565 (4.6)	9.6 (0.16)
Spain	7 (1.9)	517 (12.8)	54 (4.1)	522 (3.0)	39 (3.8)	499 (3.8)	9.6 (0.15)
Sweden	7 (1.7)	549 (6.8)	65 (4.2)	547 (2.6)	29 (4.1)	530 (4.0)	10.0 (0.14)
Colombia	6 (1.7)	496 (15.6)	45 (4.8)	453 (6.9)	49 (4.8)	437 (4.8)	9.4 (0.19)
Denmark	5 (1.5)	574 (5.5)	65 (3.2)	558 (1.9)	30 (3.0)	544 (3.4)	9.9 (0.12)
Bulgaria	5 (1.5)	551 (14.1)	66 (3.5)	547 (3.7)	29 (3.4)	494 (8.2)	9.9 (0.13)
Trinidad and Tobago	4 (1.5)	496 (20.0)	46 (4.2)	481 (6.5)	49 (4.0)	459 (5.6)	9.2 (0.15)
Portugal	4 (1.7)	576 (21.6)	56 (4.8)	547 (3.1)	40 (4.6)	527 (4.9)	9.8 (0.17)
Finland	4 (1.6)	572 (7.3)	62 (3.2)	571 (1.9)	34 (3.4)	561 (3.4)	9.8 (0.12)
Singapore	3 (1.0)	600 (16.5)	61 (2.4)	576 (4.5)	36 (2.3)	548 (5.2)	9.6 (0.10)
Lithuania	3 (1.0)	536 (10.7)	74 (3.2)	531 (2.8)	23 (3.2)	518 (4.2)	10.1 (0.09)
Norway	2 (1.2)	~ ~	70 (4.6)	508 (2.4)	28 (4.5)	502 (3.5)	9.9 (0.17)
Hungary	2 (1.3)	~ ~	57 (4.0)	553 (3.4)	41 (3.8)	516 (5.3)	9.4 (0.15)
Slovenia	2 (1.1)	~ ~	66 (3.7)	533 (2.0)	32 (3.5)	524 (3.3)	9.6 (0.10)
Georgia	2 (0.8)	~ ~	59 (3.8)	495 (3.5)	39 (3.7)	475 (4.9)	9.5 (0.11)
Italy	2 (0.7)	~ ~	59 (3.4)	544 (2.8)	39 (3.4)	538 (3.8)	9.5 (0.09)
France	2 (1.0)	~ ~	57 (3.6)	529 (2.5)	41 (3.7)	508 (4.3)	9.4 (0.12)
Morocco	2 (0.6)	~ ~	25 (2.7)	341 (9.1)	74 (2.7)	299 (5.0)	7.8 (0.11)
Czech Republic	2 (0.9)	~ ~	45 (4.6)	550 (3.0)	54 (4.6)	541 (3.2)	9.0 (0.14)
Slovak Republic	1 (0.5)	~ ~	49 (3.2)	543 (2.5)	50 (3.3)	527 (4.9)	9.1 (0.12)
Russian Federation	1 (0.0)	~ ~	52 (3.9)	574 (3.5)	47 (4.0)	563 (3.7)	9.2 (0.12)
Belgium (French)	0 (0.5)	~ ~	49 (4.2)	517 (3.6)	51 (4.2)	498 (4.0)	8.9 (0.17)
Netherlands	0 (0.0)	~ ~	55 (4.3)	552 (2.1)	45 (4.3)	539 (3.7)	9.2 (0.12)
Germany	0 (0.0)	~ ~	60 (3.4)	550 (2.4)	40 (3.4)	528 (3.7)	9.2 (0.09)
International Avg.	9 (0.3)	529 (1.8)	60 (0.6)	517 (0.6)	31 (0.5)	497 (0.8)	

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.



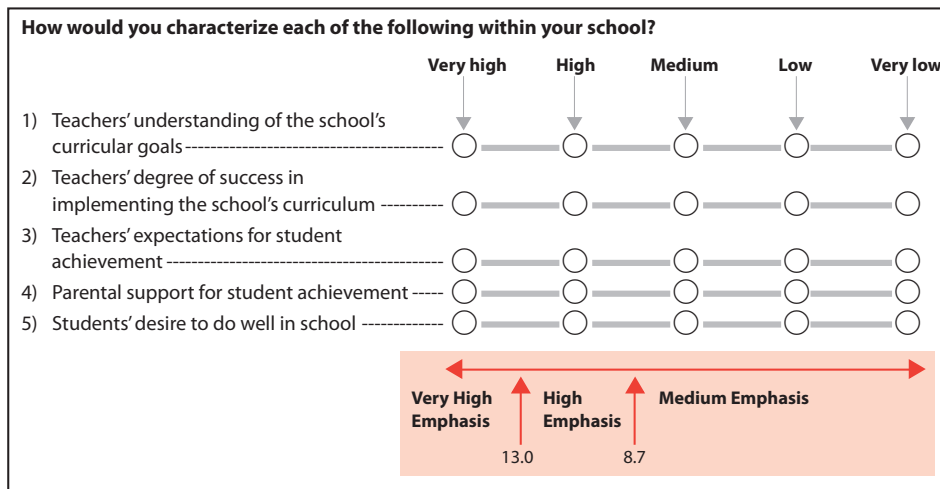
**Exhibit 6.2: School Emphasis on Academic Success - Teacher Reports (Continued)**

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	12 (3.0)	485 (15.3)	52 (4.4)	449 (6.5)	37 (4.4)	438 (8.1)	10.1 (0.21)
Kuwait	8 (2.8)	476 (13.4)	56 (4.9)	420 (10.1)	35 (4.8)	401 (12.0)	10.1 (0.20)
Botswana	6 (1.9)	532 (22.6)	35 (4.1)	433 (6.8)	59 (4.1)	402 (4.7)	8.8 (0.19)
Morocco	2 (0.8)	~ ~	22 (3.4)	454 (7.9)	76 (3.4)	410 (5.7)	7.9 (0.16)
<b>Benchmarking Participants<sup>◇</sup></b>							
Florida, US	22 (3.8)	597 (6.5)	54 (5.3)	566 (5.6)	24 (4.3)	556 (8.6)	11.0 (0.19)
Alberta, Canada	22 (3.4)	569 (5.5)	68 (3.9)	546 (3.1)	11 (2.8)	520 (7.8)	11.2 (0.17)
Dubai, UAE	16 (3.2)	490 (16.0)	66 (3.7)	478 (5.2)	17 (2.0)	464 (7.9)	10.9 (0.13)
Abu Dhabi, UAE	15 (3.4)	469 (15.0)	66 (4.4)	421 (6.1)	19 (3.6)	399 (13.3)	10.9 (0.20)
Maltese - Malta	12 (0.1)	453 (3.9)	68 (0.1)	460 (1.9)	20 (0.1)	455 (3.6)	10.5 (0.01)
Ontario, Canada	8 (2.5)	572 (12.6)	68 (4.2)	550 (3.2)	24 (3.7)	545 (6.3)	10.3 (0.18)
Quebec, Canada	6 (1.9)	558 (9.9)	66 (4.1)	541 (2.6)	28 (4.1)	525 (2.8)	10.2 (0.15)
Eng/Afr (5) - RSA	5 (2.2)	534 (35.6)	56 (5.6)	440 (12.1)	39 (5.6)	392 (12.8)	9.3 (0.24)
Andalusia, Spain	4 (1.8)	542 (6.0)	53 (3.8)	523 (3.8)	42 (3.4)	502 (3.1)	9.6 (0.12)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2011

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	6 (1.7)	607 (13.5)	45 (4.8)	580 (5.6)	49 (4.8)	569 (4.0)	9.4 (0.19)
South Africa	4 (1.2)	554 (28.4)	50 (3.7)	474 (5.3)	46 (3.7)	438 (5.1)	9.3 (0.15)
Botswana	3 (1.4)	550 (42.0)	35 (4.1)	487 (7.7)	63 (3.9)	445 (3.4)	8.6 (0.17)



### *Principals Spend Time on Leadership Activities*

The effectiveness of school leadership has become a central issue, as principals worldwide are held increasingly accountable for their students' achievement outcomes. However, the effects of principal leadership are often indirect and difficult to measure. A meta-analysis of multinational studies conducted between 1986 and 1996 found that “defining and communicating the school’s mission” had the largest direct effect on student achievement (Witziers, Bosker, & Kruger, 2003), whereas a different meta-analysis of 27 studies conducted between 1978 and 2006 found strong effects for promoting teacher learning and development, and establishing goals (Robinson, Lloyd, & Rowe, 2008).

PIRLS 2011 used research conducted in the Netherlands (ten Bruggencate, Luyten, Scheerens, & Slegers, 2012) to develop questions about principals' leadership styles. Exhibit 6.3 presents principals' reports about the various activities upon which they spend “a lot of time.” The pattern of varying reports from country to country held for the fourth grade, the sixth grade, the benchmarking participants, and prePIRLS.

The results for the fourth grade were averaged across countries to provide some summary data. The first two questions related to defining and communicating the schools mission, and 59 percent of the fourth grade students, on average, were in schools where this occupied “a lot” of the principal’s time. The next two questions addressed monitoring whether goals are achieved by teachers and students, with about half the students (48% and 55%) in schools where principals reported spending “a lot of time” on these activities. The next two categories asked about maintaining discipline: two-thirds of students were in schools where the principal spent “a lot of time” keeping an orderly atmosphere, and 44 percent had principals that needed to spend “a lot of time” addressing disruptive student behavior. The last three areas appear to occupy less time: advising teachers, initiating projects, and participating in professional development activities.

### *Schools' Emphasis on Reading Skills and Strategies in the Early Grades*

To become proficient readers, students should be introduced to increasingly complex reading skills and strategies as they advance through school. Also, if students are to be able to learn to read by the third grade, as expressed by a number of the countries in the *PIRLS 2011 Encyclopedia*, then introduction to reading skills and strategies should begin when students enter the first grade, if not before.

Exhibit 6.4 summarizes principals' reports of the grade by which certain reading skills or strategies were emphasized. Students were scored according to their principals' responses about the earliest grade at which each of eleven reading skills and strategies were emphasized (the eleven skills or strategies are listed on the second page of the exhibit). Schools where reading skills and strategies were emphasized **At or Before Second Grade** had principals who reported that all eleven skills and strategies are emphasized at second grade (or earlier). Students in those schools had the highest average reading achievement as fourth grade students. Fourth grade students had the next highest achievement if the skills were emphasized **At Third Grade**, and the lowest average reading achievement if the skills and strategies were emphasized in the curriculum **At Fourth Grade (or Later)**. There were major differences among countries in curricula. At one end of the continuum, 84 percent of the students in England were in schools emphasizing the full range of reading skills and strategies by the second grade. At the other end of the continuum, the majority students in Kuwait and Morocco were in schools emphasizing the skills and strategies in the fourth grade (or later). Internationally, on average, two-thirds of the fourth grade students attended schools where the skills and strategies were emphasized at the third grade.

**Exhibit 6.3: Principals Spend Time on Leadership Activities**

Reported by Principals

Country	Percent of Students Whose Principals Spend "A Lot of Time"								
	Promoting the School's Educational Vision or Goals	Developing the School's Curricular and Educational Goals	Monitoring Teachers' Implementation of the School's Educational Goals in Their Teaching	Monitoring Students' Learning Progress to Ensure that the School's Educational Goals Are Reached	Keeping an Orderly Atmosphere in the School	Addressing Disruptive Student Behavior	Advising Teachers Who Have Questions or Problems with Their Teaching	Initiating Educational Projects or Improvements	Participating in Professional Development Activities Specifically for School Principals
Australia	60 (4.1)	73 (3.8)	52 (4.6)	68 (3.8)	63 (3.6)	35 (3.8)	27 (3.4)	53 (4.4)	33 (3.7)
Austria	41 (3.9)	13 (3.0)	24 (3.4)	27 (3.2)	73 (4.3)	41 (4.6)	39 (4.5)	22 (3.6)	44 (3.9)
Azerbaijan	50 (4.4)	55 (4.3)	33 (4.0)	40 (4.8)	79 (3.7)	38 (4.4)	29 (3.3)	27 (3.9)	38 (4.0)
Belgium (French)	23 (4.3)	14 (3.8)	8 (2.6)	10 (3.2)	37 (4.4)	40 (4.4)	24 (4.2)	16 (2.7)	8 (2.2)
Bulgaria	49 (4.2)	47 (4.5)	60 (4.0)	55 (4.2)	72 (3.9)	45 (4.3)	17 (3.3)	32 (3.8)	29 (3.6)
Canada	57 (2.5)	62 (2.6)	40 (2.5)	50 (2.6)	67 (2.7)	47 (2.8)	29 (2.3)	38 (3.2)	26 (2.3)
Chinese Taipei	72 (3.6)	69 (3.8)	59 (3.9)	54 (3.6)	49 (4.4)	15 (3.0)	44 (4.2)	53 (4.2)	57 (4.4)
Colombia	55 (4.8)	73 (4.2)	53 (4.8)	57 (4.5)	72 (4.5)	48 (4.8)	32 (4.1)	52 (4.4)	51 (4.8)
Croatia	64 (3.9)	69 (3.9)	39 (4.2)	41 (3.8)	84 (2.9)	50 (4.0)	43 (4.3)	32 (4.0)	70 (3.7)
Czech Republic	69 (3.9)	64 (4.0)	54 (4.3)	66 (3.8)	95 (1.7)	58 (4.2)	40 (4.5)	61 (3.7)	42 (4.1)
Denmark	24 (3.2)	20 (2.8)	6 (1.8)	11 (2.2)	67 (3.2)	25 (2.8)	27 (2.7)	21 (2.6)	19 (2.8)
England	53 (4.6)	68 (4.5)	56 (4.4)	76 (4.1)	48 (4.7)	21 (3.6)	17 (3.6)	34 (4.3)	13 (3.0)
Finland	36 (3.8)	34 (4.4)	18 (3.0)	12 (2.1)	33 (4.6)	26 (4.1)	16 (2.9)	28 (4.1)	23 (3.6)
France	41 (4.7)	26 (4.4)	8 (2.6)	15 (3.2)	46 (4.7)	55 (4.2)	15 (3.0)	26 (3.6)	5 (1.8)
Georgia	42 (4.8)	36 (4.5)	39 (4.0)	55 (3.7)	72 (3.9)	51 (4.2)	19 (3.5)	20 (3.3)	27 (3.5)
Germany	49 (3.4)	47 (3.3)	15 (2.6)	18 (2.6)	56 (3.6)	49 (3.5)	28 (3.2)	24 (3.2)	17 (2.6)
Hong Kong SAR	53 (4.6)	67 (4.5)	57 (4.6)	60 (4.2)	59 (4.3)	9 (2.2)	15 (3.2)	41 (4.9)	31 (4.4)
Hungary	80 (3.6)	72 (4.0)	59 (4.0)	62 (4.2)	79 (3.2)	59 (4.0)	34 (4.0)	41 (4.4)	35 (4.2)
Indonesia	86 (2.8)	85 (3.1)	82 (3.3)	86 (3.3)	98 (1.1)	78 (3.9)	70 (4.1)	37 (4.2)	70 (4.0)
Iran, Islamic Rep. of	77 (3.1)	88 (2.7)	79 (3.9)	86 (2.5)	89 (2.0)	82 (2.7)	61 (3.6)	44 (3.9)	67 (3.3)
Ireland	41 (4.4)	61 (4.3)	20 (3.4)	34 (4.3)	65 (3.8)	30 (4.0)	10 (2.5)	31 (3.8)	17 (2.7)
Israel	79 (3.6)	82 (3.6)	71 (4.1)	86 (2.6)	85 (3.6)	78 (4.1)	74 (3.8)	r 78 (3.5)	81 (3.1)
Italy	83 (3.6)	62 (3.8)	43 (3.9)	47 (4.2)	49 (3.7)	31 (3.3)	48 (3.7)	61 (3.7)	35 (3.3)
Lithuania	74 (3.7)	90 (2.4)	60 (3.6)	68 (4.0)	62 (4.5)	42 (3.8)	48 (4.3)	41 (4.3)	44 (3.9)
Malta	58 (0.1)	67 (0.1)	32 (0.1)	40 (0.1)	71 (0.1)	39 (0.1)	39 (0.1)	44 (0.1)	26 (0.1)
Morocco	64 (3.4)	58 (3.9)	63 (3.9)	59 (4.1)	91 (2.1)	66 (3.1)	56 (3.7)	43 (3.7)	42 (4.0)
Netherlands	r 75 (3.9)	r 77 (3.1)	r 49 (5.1)	r 63 (5.3)	r 48 (4.7)	r 25 (3.7)	r 42 (5.6)	r 36 (5.1)	r 26 (4.2)
New Zealand	59 (4.4)	68 (3.9)	40 (3.9)	64 (4.2)	50 (3.8)	17 (3.0)	23 (3.0)	41 (3.9)	26 (3.8)
Northern Ireland	47 (4.5)	73 (3.9)	r 35 (4.6)	61 (4.2)	54 (5.2)	13 (2.9)	r 7 (2.1)	r 35 (4.5)	r 23 (4.5)
Norway	27 (4.5)	19 (3.8)	17 (3.3)	17 (3.2)	56 (4.6)	31 (4.4)	16 (3.6)	23 (4.0)	24 (4.3)
Oman	40 (3.2)	r 18 (2.4)	75 (3.4)	80 (3.1)	82 (2.5)	45 (3.5)	51 (3.5)	36 (3.4)	24 (2.5)
Poland	56 (3.9)	49 (4.2)	59 (4.0)	75 (3.3)	76 (3.8)	40 (3.9)	29 (3.9)	51 (4.1)	54 (4.2)
Portugal	63 (4.2)	50 (5.3)	35 (4.7)	41 (4.9)	49 (4.8)	38 (5.2)	8 (2.7)	28 (5.3)	6 (2.2)
Qatar	70 (2.5)	81 (2.3)	81 (2.4)	81 (2.5)	85 (2.5)	64 (2.7)	69 (2.9)	61 (3.4)	54 (3.2)
Romania	84 (3.3)	84 (3.2)	81 (3.5)	84 (3.0)	87 (2.5)	73 (3.6)	57 (4.3)	63 (3.8)	69 (4.2)
Russian Federation	80 (2.8)	81 (2.6)	81 (2.6)	74 (2.9)	87 (2.1)	64 (3.1)	34 (3.1)	52 (3.6)	64 (4.0)
Saudi Arabia	48 (4.4)	61 (4.1)	77 (3.3)	76 (3.5)	78 (3.5)	57 (3.7)	52 (3.9)	45 (4.4)	40 (4.3)
Singapore	76 (0.0)	80 (0.0)	66 (0.0)	77 (0.0)	66 (0.0)	32 (0.0)	33 (0.0)	58 (0.0)	47 (0.0)
Slovak Republic	56 (3.6)	69 (3.6)	45 (3.9)	42 (3.9)	60 (3.7)	55 (3.3)	34 (3.6)	46 (3.7)	46 (3.8)
Slovenia	68 (3.1)	62 (4.1)	61 (3.5)	69 (4.0)	92 (2.2)	59 (3.8)	53 (4.0)	62 (3.9)	73 (3.4)
Spain	57 (3.3)	58 (3.6)	40 (3.9)	46 (3.8)	66 (3.2)	39 (3.7)	20 (3.3)	49 (3.5)	31 (3.4)
Sweden	52 (4.4)	40 (4.8)	17 (3.2)	28 (4.2)	24 (3.7)	19 (3.6)	28 (4.1)	28 (4.1)	16 (3.6)
Trinidad and Tobago	55 (4.2)	55 (4.0)	40 (4.4)	55 (4.4)	87 (2.9)	74 (3.7)	37 (4.5)	37 (4.2)	42 (4.0)
United Arab Emirates	69 (2.1)	77 (2.2)	82 (1.8)	85 (1.4)	82 (1.8)	55 (2.1)	62 (2.0)	65 (2.0)	47 (1.9)
United States	74 (2.6)	69 (2.7)	71 (2.4)	78 (2.3)	70 (2.8)	42 (2.8)	42 (2.8)	45 (3.3)	36 (2.7)
International Avg.	59 (0.6)	59 (0.5)	48 (0.5)	55 (0.5)	68 (0.5)	44 (0.5)	35 (0.5)	41 (0.6)	38 (0.5)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent. An "r" indicates data are available for at least 70% but less than 85% of the students.

**Exhibit 6.3: Principals Spend Time on Leadership Activities (Continued)**

Country	Percent of Students Whose Principals Spend "A Lot of Time"								
	Promoting the School's Educational Vision or Goals	Developing the School's Curricular and Educational Goals	Monitoring Teachers' Implementation of the School's Educational Goals in Their Teaching	Monitoring Students' Learning Progress to Ensure that the School's Educational Goals Are Reached	Keeping an Orderly Atmosphere in the School	Addressing Disruptive Student Behavior	Advising Teachers Who Have Questions or Problems with Their Teaching	Initiating Educational Projects or Improvements	Participating in Professional Development Activities Specifically for School Principals
<b>Sixth Grade Participants</b>									
Botswana	68 (3.7)	67 (3.9)	83 (2.8)	82 (3.0)	87 (2.5)	62 (4.6)	57 (3.6)	45 (4.2)	52 (4.7)
Honduras	58 (4.5)	63 (4.7)	51 (5.1)	65 (4.4)	90 (2.5)	72 (4.8)	56 (4.6)	63 (4.7)	51 (4.9)
Kuwait	75 (3.9)	56 (4.6)	84 (3.5)	83 (2.9)	89 (2.8)	69 (3.9)	58 (4.4)	65 (3.8)	72 (4.2)
Morocco	67 (3.5)	58 (3.5)	64 (4.2)	60 (4.0)	92 (1.8)	68 (3.0)	56 (4.7)	44 (4.2)	43 (4.4)
<b>Benchmarking Participants<sup>◇</sup></b>									
Alberta, Canada	59 (4.1)	59 (3.9)	42 (4.1)	45 (4.4)	69 (3.7)	33 (4.5)	28 (4.3)	41 (4.5)	33 (4.3)
Ontario, Canada	63 (4.5)	74 (4.4)	61 (4.8)	59 (4.8)	75 (4.2)	54 (5.0)	30 (4.9)	38 (5.2)	36 (5.1)
Quebec, Canada	44 (4.7)	41 (4.3)	18 (3.4)	36 (3.8)	47 (4.3)	47 (4.7)	29 (4.0)	31 (4.0)	19 (3.2)
Maltese - Malta	58 (0.1)	67 (0.1)	31 (0.1)	40 (0.1)	72 (0.1)	39 (0.1)	39 (0.1)	44 (0.1)	26 (0.1)
Eng/Afr (5) - RSA	r 52 (6.2)	r 59 (6.8)	r 51 (5.8)	r 54 (6.2)	r 88 (3.7)	r 68 (5.4)	r 46 (5.8)	r 33 (5.3)	r 56 (5.6)
Andalusia, Spain	66 (4.0)	69 (3.7)	44 (3.6)	49 (3.9)	62 (4.1)	38 (4.2)	24 (3.8)	50 (4.4)	33 (4.1)
Abu Dhabi, UAE	78 (3.9)	79 (3.6)	83 (3.3)	87 (2.7)	82 (3.0)	51 (4.4)	66 (4.1)	64 (4.4)	59 (3.7)
Dubai, UAE	72 (0.4)	83 (0.4)	79 (0.4)	80 (0.4)	80 (0.2)	58 (0.5)	55 (0.5)	71 (0.4)	43 (0.3)
Florida, US	r 82 (4.1)	r 79 (5.6)	r 78 (5.1)	r 88 (3.0)	r 76 (6.2)	r 39 (6.6)	r 36 (6.1)	r 38 (6.0)	r 42 (6.2)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Percent of Students Whose Principals Spend "A Lot of Time"								
	Promoting the School's Educational Vision or Goals	Developing the School's Curricular and Educational Goals	Monitoring Teachers' Implementation of the School's Educational Goals in Their Teaching	Monitoring Students' Learning Progress to Ensure that the School's Educational Goals Are Reached	Keeping an Orderly Atmosphere in the School	Addressing Disruptive Student Behavior	Advising Teachers Who Have Questions or Problems with Their Teaching	Initiating Educational Projects or Improvements	Participating in Professional Development Activities Specifically for School Principals
Botswana	71 (3.8)	70 (4.2)	88 (2.9)	85 (3.3)	90 (2.8)	62 (4.4)	65 (4.3)	41 (4.2)	56 (4.7)
Colombia	55 (4.8)	73 (4.2)	53 (4.8)	57 (4.5)	72 (4.5)	48 (4.8)	32 (4.1)	52 (4.4)	51 (4.8)
South Africa	63 (4.0)	66 (3.5)	64 (3.1)	69 (3.2)	91 (2.4)	69 (3.4)	49 (3.7)	41 (3.8)	65 (3.1)

**Exhibit 6.4: Emphasis in Early Grades on Reading Skills and Strategies**

Reported by Principals

Students were scored according to their principals' responses about the earliest grade at which each of eleven reading skills and strategies were emphasized. Students in schools where their principals reported reading skills and strategies were emphasized **At or Before Second Grade** had a score on the scale of at least 11.1, which corresponds to all eleven skills and strategies being emphasized at second grade, on average. Students in schools where their principals reported reading skills and strategies were emphasized **At Fourth Grade or Later** had a score no higher than 6.5, which corresponds to all eleven skills and strategies being emphasized at fourth grade, on average. All other students attended schools where reading skills and strategies were emphasized **At Third Grade**.

Country	At or Before Second Grade		At Third Grade		At Fourth Grade or Later		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
England	84 (3.3)	553 (3.2)	15 (3.2)	538 (7.3)	1 (0.9)	~ ~	12.6 (0.20)
United States	r 75 (2.7)	558 (1.7)	24 (2.7)	557 (3.8)	1 (0.5)	~ ~	12.2 (0.11)
Australia	73 (4.0)	528 (2.9)	27 (4.0)	531 (5.9)	0 (0.0)	~ ~	12.6 (0.19)
New Zealand	73 (3.6)	538 (2.8)	27 (3.6)	523 (7.2)	0 (0.0)	~ ~	12.2 (0.16)
Israel	59 (4.7)	549 (4.7)	41 (4.7)	529 (6.1)	0 (0.0)	~ ~	11.5 (0.16)
Canada	55 (2.7)	549 (2.5)	44 (2.7)	547 (2.9)	1 (0.4)	~ ~	11.4 (0.09)
Northern Ireland	r 55 (4.6)	561 (3.0)	45 (4.6)	557 (4.6)	0 (0.0)	~ ~	11.6 (0.17)
Russian Federation	r 50 (3.7)	567 (4.0)	50 (3.7)	570 (3.7)	0 (0.0)	~ ~	11.1 (0.10)
Singapore	46 (0.0)	567 (4.0)	54 (0.0)	566 (5.4)	0 (0.0)	~ ~	10.9 (0.00)
Ireland	40 (4.0)	558 (3.9)	60 (4.0)	547 (3.4)	0 (0.0)	~ ~	10.6 (0.13)
Sweden	r 37 (4.5)	543 (4.0)	63 (4.5)	541 (3.1)	0 (0.0)	~ ~	10.5 (0.17)
Trinidad and Tobago	32 (3.8)	464 (8.1)	66 (4.0)	475 (5.2)	2 (1.1)	~ ~	10.3 (0.13)
Croatia	31 (4.1)	556 (2.5)	68 (4.2)	552 (2.6)	1 (0.0)	~ ~	10.3 (0.14)
Germany	30 (3.4)	547 (4.0)	69 (3.3)	541 (2.5)	1 (0.4)	~ ~	10.4 (0.10)
Austria	29 (4.2)	529 (4.2)	71 (4.2)	529 (2.6)	0 (0.0)	~ ~	10.3 (0.12)
Belgium (French)	29 (5.0)	509 (4.5)	70 (5.1)	505 (3.7)	1 (0.0)	~ ~	10.2 (0.20)
Spain	29 (3.2)	511 (4.5)	71 (3.2)	515 (3.0)	1 (0.8)	~ ~	10.2 (0.12)
Hungary	28 (4.1)	542 (5.9)	71 (4.0)	539 (4.5)	1 (0.0)	~ ~	10.2 (0.13)
Portugal	25 (4.1)	536 (5.5)	75 (4.1)	542 (3.2)	0 (0.0)	~ ~	10.3 (0.11)
Bulgaria	25 (3.5)	548 (5.9)	74 (3.6)	528 (5.0)	1 (0.0)	~ ~	10.4 (0.11)
Qatar	24 (3.0)	457 (10.2)	66 (3.4)	416 (5.8)	10 (1.7)	407 (7.5)	9.4 (0.15)
Czech Republic	24 (3.8)	540 (4.0)	74 (4.0)	547 (2.6)	2 (1.2)	~ ~	10.0 (0.16)
Slovak Republic	24 (3.2)	530 (8.2)	76 (3.3)	537 (2.5)	1 (0.6)	~ ~	10.1 (0.12)
Lithuania	23 (3.3)	537 (4.0)	76 (3.4)	528 (2.7)	1 (0.6)	~ ~	10.1 (0.12)
Netherlands	r 22 (4.4)	551 (6.7)	78 (4.4)	546 (2.1)	0 (0.0)	~ ~	9.9 (0.15)
Denmark	21 (2.4)	555 (4.5)	79 (2.4)	553 (1.9)	1 (0.5)	~ ~	9.7 (0.10)
Georgia	20 (2.8)	481 (10.5)	79 (2.9)	490 (3.2)	1 (1.2)	~ ~	9.9 (0.12)
Azerbaijan	19 (3.6)	467 (8.3)	79 (3.8)	460 (3.8)	2 (1.2)	~ ~	9.7 (0.14)
France	18 (3.3)	533 (5.2)	81 (3.4)	517 (2.8)	1 (0.7)	~ ~	9.6 (0.13)
Chinese Taipei	17 (3.0)	556 (5.2)	80 (3.0)	552 (2.0)	3 (1.4)	555 (7.1)	9.4 (0.14)
Hong Kong SAR	16 (3.5)	579 (6.7)	81 (3.8)	569 (2.9)	3 (1.6)	548 (15.3)	9.5 (0.14)
Italy	15 (2.5)	545 (5.3)	84 (2.5)	541 (2.3)	1 (0.8)	~ ~	9.4 (0.12)
United Arab Emirates	15 (1.3)	487 (6.6)	68 (2.2)	433 (3.1)	18 (2.0)	399 (6.0)	8.7 (0.09)
Romania	14 (3.4)	511 (11.7)	85 (3.5)	502 (4.7)	1 (0.9)	~ ~	9.8 (0.12)
Norway	14 (3.4)	508 (4.0)	83 (3.9)	506 (2.5)	3 (1.9)	505 (18.4)	9.3 (0.16)
Colombia	13 (3.3)	464 (17.6)	81 (3.6)	446 (4.3)	6 (1.9)	422 (19.4)	9.1 (0.18)
Malta	13 (0.1)	473 (3.8)	87 (0.1)	480 (1.6)	0 (0.0)	~ ~	9.4 (0.00)
Finland	10 (2.6)	569 (5.6)	87 (2.8)	568 (2.0)	3 (1.5)	555 (8.2)	9.2 (0.12)
Slovenia	8 (1.8)	531 (5.3)	87 (2.4)	530 (2.3)	5 (1.9)	532 (4.7)	8.9 (0.11)
Saudi Arabia	7 (1.7)	431 (17.5)	78 (3.5)	434 (4.8)	15 (3.1)	411 (14.0)	8.3 (0.13)
Iran, Islamic Rep. of	7 (1.6)	493 (9.5)	85 (2.4)	457 (3.2)	8 (1.8)	435 (13.5)	8.7 (0.11)
Poland	6 (2.1)	523 (10.2)	94 (2.1)	527 (2.3)	0 (0.0)	~ ~	9.3 (0.10)
Oman	4 (0.9)	366 (12.0)	86 (2.0)	389 (3.2)	11 (1.9)	354 (8.1)	8.4 (0.09)
Indonesia	4 (1.9)	450 (16.3)	88 (3.2)	429 (4.5)	8 (2.5)	418 (11.9)	8.5 (0.12)
Morocco	1 (0.6)	~ ~	48 (4.0)	323 (6.4)	51 (4.0)	302 (5.9)	6.8 (0.12)
<b>International Avg.</b>	<b>28 (0.5)</b>	<b>522 (1.1)</b>	<b>68 (0.5)</b>	<b>511 (0.6)</b>	<b>4 (0.2)</b>	<b>450 (3.3)</b>	

Centerpoint of scale set at 10.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.  
 A tilde (~) indicates insufficient data to report achievement.  
 An "r" indicates data are available for at least 70% but less than 85% of the students.

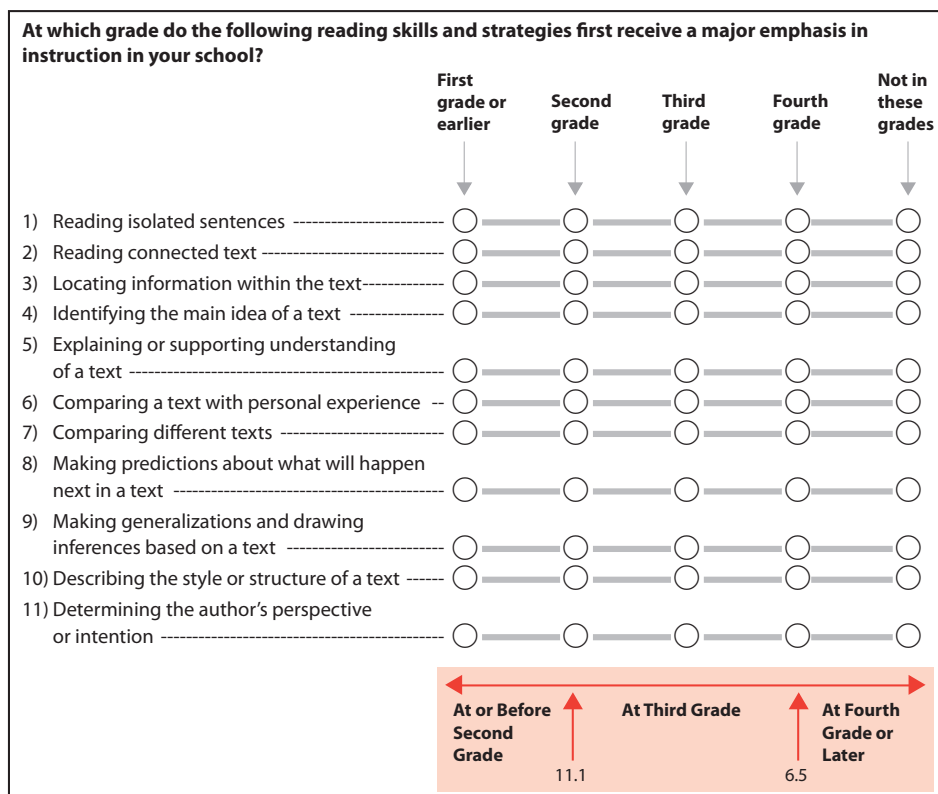
SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 6.4: Emphasis in Early Grades on Reading Skills and Strategies (Continued)**

Country	At or Before Second Grade		At Third Grade		At Fourth Grade or Later		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Botswana	31 (3.8)	410 (6.8)	67 (4.0)	424 (6.0)	2 (1.2)	~ ~	10.2 (0.19)
Honduras	11 (3.2)	480 (18.7)	85 (3.7)	444 (5.3)	4 (1.9)	456 (13.6)	9.1 (0.18)
Kuwait	r 3 (1.8)	386 (34.9)	28 (4.5)	416 (12.4)	69 (4.9)	418 (9.4)	5.7 (0.28)
Morocco	1 (0.6)	~ ~	48 (4.6)	436 (6.5)	50 (4.6)	414 (6.6)	6.8 (0.13)
<b>Benchmarking Participants<sup>◇</sup></b>							
Florida, US	r 82 (4.7)	567 (3.6)	18 (4.7)	582 (13.2)	0 (0.0)	~ ~	12.8 (0.21)
Ontario, Canada	75 (4.0)	550 (3.0)	25 (4.0)	553 (5.4)	0 (0.1)	~ ~	12.5 (0.19)
Alberta, Canada	52 (4.5)	551 (4.4)	48 (4.5)	548 (4.4)	0 (0.0)	~ ~	11.2 (0.17)
Dubai, UAE	28 (0.3)	515 (3.5)	66 (0.3)	465 (2.6)	5 (0.2)	384 (7.5)	10.0 (0.01)
Andalusia, Spain	26 (3.6)	523 (5.0)	74 (3.6)	512 (2.7)	0 (0.0)	~ ~	10.1 (0.13)
Quebec, Canada	23 (3.9)	536 (4.4)	75 (4.1)	538 (2.8)	2 (1.5)	~ ~	9.8 (0.15)
Eng/Afr (5) - RSA	r 19 (5.2)	457 (30.9)	65 (7.0)	424 (11.6)	16 (5.0)	370 (20.5)	9.0 (0.29)
Maltese - Malta	14 (0.1)	439 (4.1)	86 (0.1)	460 (1.6)	0 (0.0)	~ ~	9.3 (0.00)
Abu Dhabi, UAE	11 (2.6)	464 (16.6)	61 (4.4)	418 (6.4)	28 (4.3)	403 (9.1)	8.2 (0.19)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	At or Before Second Grade		At Third Grade		At Fourth Grade or Later		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
South Africa	20 (3.0)	491 (13.8)	61 (3.5)	455 (5.0)	20 (2.5)	422 (9.4)	9.0 (0.19)
Colombia	13 (3.3)	591 (14.4)	81 (3.6)	575 (3.5)	6 (1.9)	553 (22.6)	9.1 (0.18)
Botswana	13 (3.0)	457 (15.0)	67 (3.7)	465 (4.4)	21 (3.1)	457 (7.7)	8.4 (0.19)



## Schools with Discipline and Safety Problems

The sense of security that comes from attending a school with few behavior problems and having little or no concern about student or teacher safety promotes a stable learning environment. There is increasing research showing that a safe school environment is important for students' academic achievement. On the other hand, a general lack of discipline, especially if students and teachers are afraid for their safety, does not facilitate learning. Unfortunately, community and school violence are becoming an increasing problem, especially among urban youth.

### *Safe and Orderly School*

There is growing evidence that students' perceived school safety adversely affects academic performance, even for primary school children (Milam, Furr-Holden, & Leaf, 2010). It seems that safety at school can no longer be taken for granted, even at the fourth grade. To provide information on the extent to which school safety might be affecting reading achievement, PIRLS 2011 developed the Safe and Orderly School scale. Teachers were asked the degree to which they agreed or disagreed with five statements:

- ◆ This school is located in a safe neighborhood;
- ◆ I feel safe at this school;
- ◆ This school's security policies and practices are sufficient;
- ◆ The students behave in an orderly manner; and
- ◆ The students are respectful of the teachers.

Exhibit 6.5 presents the results for the Safe and Orderly School scale. Students were scored according to their teachers' degree of agreement with the five statements. Students in **Safe and Orderly** schools had teachers that "agreed a lot" with three of the five qualities and "agreed a little" with other two, on average. There was substantial variation internationally, but on average, across the fourth grade countries, the majority of students (55%) were attending schools judged by their teachers to be **Safe and Orderly**. Almost all the remaining students (41%) were in schools judged to be **Somewhat Safe and Orderly**. In general, only small percentages of students (4% on average) were in schools judged **Not Safe and Orderly**; at best, their teachers "disagreed



a little” with three of the five statements and “agreed a little” with the other two, on average. Across the fourth grade countries and for the sixth grade, benchmarking, and prePIRLS participants, on average, the safer the school as reported by their teachers, the higher the students’ average reading achievement.

### *School Discipline and Safety*

Previous PIRLS assessments have asked principals for their perceptions about the degree to which a series of discipline, disorderly, and bullying behaviors are problems in their schools. For example, in PIRLS 2006 there was a positive relationship between principals’ positive perception of school safety and average reading achievement.

Exhibit 6.6 presents the PIRLS 2011 results for the School Discipline and Safety scale based on asking principals about the extent of ten different discipline and school safety problems (see the second page of the exhibit for the complete list of problems). Countries are ordered by the percentage of students whose principals reported few student discipline and school safety problems. Principals in schools with **Hardly Any Problems** with discipline or safety reported “not a problem” for five of the ten discipline and safety issues and only “minor problems” for the other five, on average. Principals in schools with **Moderate Problems** reported “moderate problem” for five of the ten issues and “minor problem” for the other five, on average.

More than half of the students, on average, across the fourth grade countries were in the **Hardly Any Problems** category and 31 percent were in the **Minor Problems** category. Only 11 percent, on average, were attending schools where principals reported **Moderate Problems** with discipline and school safety. Students whose principals reported **Moderate Problems** in their schools had substantially lower reading achievement, by 43 points on average, than students whose principals reported **Hardly Any Problems** (476 vs. 519). The results for the sixth grade, benchmarking, and prePIRLS participants followed a similar pattern, but in several instances large percentages of students in the sixth grade and in the prePIRLS countries had principals reporting **Moderate Problems** with school discipline.

**Exhibit 6.5: Safe and Orderly School**
*Reported by Teachers*

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and Orderly School* scale. Students in **Safe and Orderly** schools had a score on the scale of at least 10.1, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a safe and orderly school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.2, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Indonesia	91 (2.6)	429 (4.5)	9 (2.6)	425 (13.8)	0 (0.0)	~ ~	11.9 (0.13)
Northern Ireland	r 84 (2.9)	564 (3.1)	16 (2.8)	538 (7.9)	0 (0.4)	~ ~	11.4 (0.14)
Azerbaijan	82 (2.9)	463 (3.8)	16 (2.8)	463 (9.2)	1 (0.7)	~ ~	11.3 (0.13)
Israel	81 (3.2)	546 (3.5)	17 (3.3)	530 (9.5)	3 (1.4)	485 (41.9)	11.0 (0.14)
Georgia	79 (2.7)	489 (3.2)	19 (2.7)	482 (7.9)	1 (0.7)	~ ~	11.1 (0.13)
Ireland	77 (3.4)	560 (2.4)	21 (3.3)	527 (5.2)	2 (1.0)	~ ~	11.2 (0.15)
Australia	r 76 (3.2)	540 (3.1)	21 (3.1)	509 (6.9)	4 (1.4)	489 (15.1)	11.0 (0.16)
United Arab Emirates	75 (1.8)	443 (2.9)	24 (1.8)	423 (4.7)	1 (0.4)	~ ~	10.8 (0.08)
Croatia	73 (3.1)	551 (2.0)	26 (3.0)	558 (4.0)	1 (0.7)	~ ~	10.7 (0.12)
England	72 (3.7)	561 (3.0)	27 (3.7)	524 (5.2)	0 (0.3)	~ ~	10.9 (0.14)
Netherlands	72 (3.2)	551 (1.8)	27 (3.1)	533 (4.3)	1 (0.0)	~ ~	10.8 (0.15)
New Zealand	72 (2.5)	545 (2.4)	25 (2.3)	504 (4.6)	4 (1.2)	490 (16.0)	10.8 (0.12)
Qatar	70 (3.4)	431 (4.9)	29 (3.3)	409 (8.5)	1 (0.6)	~ ~	10.7 (0.13)
Singapore	64 (2.2)	576 (4.1)	34 (2.2)	551 (5.2)	2 (0.6)	~ ~	10.3 (0.09)
Norway	64 (4.6)	510 (2.4)	36 (4.6)	501 (3.2)	0 (0.0)	~ ~	10.5 (0.15)
Denmark	64 (2.9)	561 (1.9)	35 (2.9)	543 (2.7)	1 (0.8)	~ ~	10.5 (0.11)
United States	64 (2.1)	567 (2.0)	30 (2.1)	542 (2.9)	6 (1.1)	521 (7.2)	10.3 (0.09)
Canada	62 (2.8)	555 (2.2)	34 (2.6)	540 (2.6)	4 (0.9)	521 (4.5)	10.3 (0.13)
Iran, Islamic Rep. of	60 (3.5)	464 (3.7)	39 (3.4)	449 (4.9)	1 (0.8)	~ ~	10.2 (0.14)
Austria	58 (3.4)	535 (2.2)	40 (3.5)	522 (3.2)	2 (1.5)	~ ~	10.0 (0.12)
Saudi Arabia	56 (3.8)	441 (6.0)	40 (3.9)	420 (7.4)	4 (1.4)	377 (18.3)	10.1 (0.14)
Oman	56 (2.9)	394 (3.3)	43 (3.0)	390 (4.7)	2 (0.7)	~ ~	10.1 (0.10)
Poland	55 (3.4)	524 (3.2)	44 (3.4)	529 (2.9)	1 (0.6)	~ ~	9.9 (0.12)
Bulgaria	55 (3.9)	537 (5.4)	43 (3.8)	530 (5.6)	3 (1.1)	461 (27.8)	9.9 (0.13)
Hong Kong SAR	52 (4.5)	574 (2.8)	46 (4.3)	566 (3.5)	3 (1.5)	572 (30.3)	9.9 (0.17)
Hungary	51 (3.8)	548 (4.2)	45 (3.7)	531 (5.0)	3 (1.5)	502 (14.4)	9.6 (0.13)
Malta	50 (0.1)	488 (2.0)	49 (0.1)	470 (2.0)	2 (0.0)	~ ~	9.9 (0.00)
Russian Federation	49 (4.0)	569 (5.4)	49 (3.8)	569 (3.7)	2 (1.3)	~ ~	9.7 (0.17)
Lithuania	47 (3.2)	531 (3.1)	51 (3.1)	526 (3.1)	2 (0.9)	~ ~	9.6 (0.12)
Portugal	46 (5.1)	546 (4.9)	50 (4.8)	538 (3.6)	4 (1.2)	516 (9.9)	9.5 (0.19)
Czech Republic	46 (3.8)	547 (3.2)	52 (3.6)	544 (3.1)	2 (0.9)	~ ~	9.5 (0.12)
Spain	46 (3.7)	524 (3.7)	49 (3.6)	507 (3.1)	5 (1.8)	476 (9.9)	9.5 (0.16)
Germany	45 (3.9)	549 (2.9)	51 (3.8)	536 (3.2)	4 (1.4)	519 (11.1)	9.6 (0.12)
France	40 (3.4)	533 (3.3)	55 (3.5)	514 (3.1)	5 (1.5)	484 (18.2)	9.4 (0.12)
Slovak Republic	40 (3.7)	537 (3.8)	59 (3.7)	535 (3.8)	1 (0.6)	~ ~	9.3 (0.08)
Romania	40 (3.6)	498 (7.8)	55 (3.7)	505 (6.2)	5 (1.6)	469 (15.2)	9.4 (0.13)
Sweden	40 (4.7)	551 (2.9)	55 (4.8)	540 (3.0)	5 (1.4)	498 (10.1)	9.4 (0.15)
Finland	35 (3.5)	573 (2.6)	59 (3.8)	566 (2.3)	6 (1.7)	554 (4.7)	9.2 (0.12)
Colombia	35 (4.4)	458 (8.9)	54 (4.7)	442 (5.3)	11 (2.8)	447 (8.2)	8.9 (0.21)
Belgium (French)	33 (3.9)	523 (3.7)	58 (3.8)	501 (4.0)	9 (2.5)	490 (9.4)	8.7 (0.17)
Chinese Taipei	31 (3.8)	552 (2.9)	62 (3.7)	556 (2.5)	7 (2.0)	532 (5.8)	8.9 (0.15)
Morocco	30 (3.3)	337 (7.5)	56 (3.7)	303 (6.0)	14 (2.3)	289 (10.7)	8.6 (0.15)
Trinidad and Tobago	28 (3.9)	482 (8.6)	52 (3.9)	469 (6.1)	20 (3.1)	461 (9.1)	8.4 (0.19)
Slovenia	27 (3.1)	528 (3.6)	67 (3.2)	532 (2.5)	6 (1.6)	515 (8.5)	8.8 (0.11)
Italy	18 (2.9)	546 (4.9)	78 (3.3)	542 (2.3)	4 (1.4)	506 (26.2)	8.6 (0.09)
International Avg.	55 (0.5)	518 (0.6)	41 (0.5)	505 (0.8)	4 (0.2)	486 (3.6)	

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 6.5: Safe and Orderly School (Continued)**

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	62 (4.4)	448 (6.8)	33 (4.2)	452 (8.9)	5 (1.7)	445 (36.1)	10.3 (0.18)
Kuwait	61 (4.4)	422 (9.4)	34 (4.2)	415 (11.5)	6 (1.7)	391 (19.4)	9.8 (0.17)
Morocco	41 (4.2)	428 (8.6)	46 (4.6)	421 (6.7)	13 (2.9)	406 (7.5)	9.2 (0.22)
Botswana	27 (4.1)	450 (10.7)	56 (4.3)	412 (5.5)	16 (2.9)	399 (7.4)	8.4 (0.19)
<b>Benchmarking Participants<sup>◇</sup></b>							
Dubai, UAE	79 (1.9)	477 (3.3)	20 (1.9)	478 (7.8)	0 (0.0)	~ ~	11.3 (0.08)
Abu Dhabi, UAE	74 (3.6)	427 (6.0)	25 (3.6)	416 (8.9)	1 (0.6)	~ ~	10.6 (0.15)
Alberta, Canada	72 (3.9)	555 (3.0)	27 (3.9)	531 (6.0)	1 (0.7)	~ ~	10.9 (0.15)
Florida, US	61 (5.4)	583 (4.9)	35 (5.3)	548 (6.0)	5 (2.1)	572 (16.8)	10.3 (0.22)
Ontario, Canada	60 (4.4)	557 (3.6)	34 (4.2)	545 (5.0)	6 (1.9)	522 (6.6)	10.0 (0.20)
Maltese - Malta	52 (0.2)	464 (2.2)	46 (0.2)	453 (2.5)	2 (0.1)	~ ~	10.1 (0.01)
Quebec, Canada	45 (4.5)	540 (2.8)	51 (4.5)	537 (3.2)	5 (1.9)	519 (6.7)	9.7 (0.17)
Eng/Afr (5) - RSA	40 (5.7)	461 (13.1)	47 (5.6)	417 (11.2)	12 (3.6)	336 (13.6)	9.2 (0.24)
Andalusia, Spain	39 (4.0)	524 (4.2)	55 (4.1)	513 (3.2)	6 (2.1)	475 (11.7)	9.3 (0.17)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	35 (4.4)	581 (7.5)	54 (4.7)	574 (4.3)	11 (2.8)	574 (6.3)	8.9 (0.21)
South Africa	35 (3.2)	467 (8.1)	51 (3.1)	463 (6.8)	14 (2.2)	433 (7.3)	9.0 (0.15)
Botswana	23 (3.3)	483 (10.2)	62 (3.8)	461 (4.1)	15 (3.2)	439 (8.2)	8.3 (0.17)

**Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements.**

Agree a lot      Agree a little      Disagree a little      Disagree a lot

1) This school is located in a safe neighborhood ----- ○ ———— ○ ———— ○ ———— ○  
 2) I feel safe at this school ----- ○ ———— ○ ———— ○ ———— ○  
 3) This school's security policies and practices are sufficient ----- ○ ———— ○ ———— ○ ———— ○  
 4) The students behave in an orderly manner ----- ○ ———— ○ ———— ○ ———— ○  
 5) The students are respectful of the teachers ----- ○ ———— ○ ———— ○ ———— ○

← Safe and Orderly      Somewhat Safe and Orderly      Not Safe and Orderly →

10.1      6.2

## Exhibit 6.6: School Discipline and Safety

Reported by Principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline and Safety* scale. Students in schools with **Hardly Any Problems** had a score on the scale of at least 9.9, which corresponds to their principals reporting "not a problem" for five of the ten discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate Problems** had a score no higher than 7.7, which corresponds to their principals reporting "moderate problem" for five of the ten issues and "minor problem" for the other five, on average. All other students attended schools with **Minor Problems**.

Country	Hardly Any Problems		Minor Problems		Moderate Problems		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Hong Kong SAR	87 (2.9)	570 (2.5)	12 (2.8)	566 (10.1)	1 (0.0)	~ ~	11.4 (0.12)
Northern Ireland	85 (3.7)	561 (2.9)	15 (3.7)	546 (7.1)	0 (0.0)	~ ~	11.1 (0.13)
Ireland	83 (3.5)	556 (2.5)	16 (3.3)	531 (9.0)	1 (1.0)	~ ~	11.2 (0.12)
Georgia	81 (2.8)	489 (3.6)	13 (2.4)	481 (9.5)	6 (1.4)	484 (13.2)	10.8 (0.14)
Chinese Taipei	77 (3.3)	552 (2.1)	23 (3.3)	555 (4.5)	0 (0.0)	~ ~	11.4 (0.13)
Spain	77 (3.3)	517 (2.8)	14 (2.7)	499 (6.7)	10 (2.5)	510 (9.2)	10.7 (0.17)
Bulgaria	75 (3.6)	540 (4.2)	19 (3.6)	509 (11.8)	6 (2.0)	498 (14.7)	10.6 (0.15)
Lithuania	75 (3.5)	531 (2.4)	25 (3.5)	522 (4.6)	0 (0.0)	~ ~	10.6 (0.11)
England	75 (4.4)	557 (3.3)	24 (4.3)	532 (5.8)	1 (1.0)	~ ~	10.8 (0.15)
Iran, Islamic Rep. of	74 (3.9)	462 (4.1)	26 (3.9)	446 (6.8)	0 (0.0)	~ ~	10.8 (0.11)
Czech Republic	68 (3.6)	547 (2.7)	29 (3.5)	542 (4.1)	2 (1.0)	~ ~	10.3 (0.11)
New Zealand	68 (3.3)	544 (2.9)	32 (3.3)	514 (5.7)	0 (0.4)	~ ~	10.6 (0.11)
Singapore	67 (0.0)	568 (4.0)	33 (0.0)	565 (5.8)	0 (0.0)	~ ~	10.8 (0.00)
Portugal	65 (5.2)	543 (3.2)	30 (5.3)	538 (6.5)	5 (1.7)	524 (8.0)	10.4 (0.17)
Croatia	65 (4.0)	557 (2.3)	33 (4.0)	544 (3.2)	2 (1.2)	~ ~	10.5 (0.12)
Russian Federation	65 (3.9)	571 (3.5)	35 (3.8)	564 (4.3)	0 (0.5)	~ ~	10.3 (0.09)
Australia	64 (3.9)	534 (3.5)	34 (3.8)	521 (4.5)	2 (1.0)	~ ~	10.5 (0.12)
Finland	64 (4.5)	571 (2.3)	34 (4.4)	564 (3.2)	2 (1.2)	~ ~	10.3 (0.12)
Romania	64 (4.1)	512 (5.2)	23 (3.4)	500 (10.6)	13 (2.9)	454 (14.3)	10.3 (0.17)
Malta	64 (0.1)	492 (1.9)	30 (0.1)	454 (2.8)	6 (0.1)	448 (6.3)	10.2 (0.00)
United States	63 (2.7)	564 (2.0)	35 (2.8)	548 (2.7)	2 (0.8)	~ ~	10.3 (0.09)
Qatar	63 (3.2)	441 (5.2)	23 (2.6)	405 (8.7)	14 (2.3)	384 (12.2)	10.1 (0.14)
Azerbaijan	62 (4.2)	464 (4.0)	8 (2.3)	455 (9.5)	30 (3.9)	461 (7.5)	9.6 (0.26)
France	62 (4.5)	527 (2.6)	33 (4.3)	507 (5.5)	5 (1.8)	502 (14.3)	10.4 (0.12)
United Arab Emirates	61 (2.3)	449 (3.1)	24 (1.9)	414 (4.7)	15 (1.7)	412 (6.6)	10.0 (0.11)
Canada	60 (2.4)	554 (2.0)	37 (2.4)	539 (2.4)	3 (0.7)	531 (4.5)	10.3 (0.07)
Norway	58 (4.4)	507 (2.9)	39 (4.2)	507 (3.2)	3 (1.6)	496 (10.2)	10.0 (0.13)
Belgium (French)	57 (4.7)	515 (3.2)	38 (4.5)	496 (5.7)	5 (2.2)	496 (8.1)	10.1 (0.16)
Slovak Republic	57 (3.6)	539 (2.6)	35 (3.4)	534 (5.5)	9 (2.0)	514 (15.0)	10.0 (0.12)
Italy	56 (3.9)	541 (3.1)	25 (3.8)	546 (4.7)	19 (2.9)	538 (5.5)	9.6 (0.14)
Denmark	56 (3.5)	557 (2.4)	42 (3.3)	550 (2.7)	2 (1.0)	~ ~	10.1 (0.09)
Slovenia	53 (3.7)	530 (2.8)	42 (3.6)	532 (3.2)	4 (1.4)	519 (7.6)	10.1 (0.12)
Poland	51 (3.9)	527 (2.7)	46 (4.2)	524 (3.8)	3 (1.4)	530 (16.0)	9.9 (0.09)
Hungary	50 (4.2)	553 (4.3)	45 (4.2)	533 (4.9)	5 (1.5)	470 (20.2)	9.8 (0.13)
Sweden	49 (4.7)	551 (2.7)	45 (4.7)	534 (4.0)	6 (1.2)	523 (7.6)	9.8 (0.13)
Austria	46 (4.3)	533 (2.9)	42 (4.1)	527 (3.6)	12 (3.3)	522 (5.1)	9.5 (0.14)
Israel	46 (4.5)	550 (6.5)	39 (4.3)	549 (5.6)	16 (3.1)	493 (12.2)	9.2 (0.21)
Saudi Arabia	45 (3.9)	440 (4.8)	25 (3.8)	412 (13.5)	30 (3.8)	430 (8.6)	9.2 (0.18)
Germany	41 (3.3)	554 (3.1)	53 (3.5)	538 (3.2)	6 (1.5)	498 (9.3)	9.6 (0.08)
Trinidad and Tobago	38 (4.3)	483 (7.2)	52 (4.4)	464 (6.0)	10 (2.4)	460 (10.6)	9.4 (0.12)
Oman	28 (2.9)	397 (4.2)	37 (3.1)	377 (4.5)	35 (3.0)	382 (5.8)	8.5 (0.15)
Netherlands	r 25 (4.6)	555 (3.9)	67 (5.3)	545 (2.3)	8 (3.3)	536 (14.0)	9.1 (0.10)
Colombia	25 (3.4)	463 (9.0)	33 (4.7)	435 (6.8)	42 (4.4)	449 (7.2)	8.0 (0.19)
Morocco	14 (2.5)	330 (11.0)	22 (2.9)	294 (6.6)	63 (3.7)	316 (5.1)	7.3 (0.15)
Indonesia	7 (2.4)	442 (14.2)	18 (3.6)	428 (11.8)	75 (4.3)	428 (4.8)	6.2 (0.21)
International Avg.	58 (0.5)	519 (0.7)	31 (0.5)	504 (1.0)	11 (0.3)	476 (2.0)	

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011



### *Students Bullied at School*

In general, bullying involves aggression or negative behavior intended to harm or bother less physically or psychologically powerful persons, although a New Zealand review of the literature found a range of definitions and terminology relating bullying to violence and abuse (Carroll-Lind, 2009). There is growing evidence that bullying in schools is on the rise, especially with the emergence of cyber-bullying, and that bullying does have a negative impact on students' educational achievement. To provide data about bullying in the participating countries, PIRLS 2011 created the Students Bullied at School scale, based on how often students experienced six bullying behaviors:

- ◆ I was made fun of or called names;
- ◆ I was left out of games or activities by other students;
- ◆ Someone spread lies about me;
- ◆ Having something stolen;
- ◆ I was hit or hurt by other student(s); and
- ◆ I was made to do things I didn't want to do by other students.

Exhibit 6.7 provides the results for the Students Bullied at School scale. Students were scored according to their responses to how often they experienced six bullying behaviors (detailed on the second page of the exhibit). Students bullied **Almost Never** reported never experiencing three of six bullying behaviors and each of the other three behaviors "a few times a year," on average. Internationally, across the fourth grade countries, 47 percent of the students, on average, **Almost Never** experienced these bullying behaviors. However, the percentages ranged from 26 to 75 percent.

The majority of the fourth grade students reported being bullied either **About Monthly** or **About Weekly**. Internationally, across the fourth grade countries, 33 percent of the students, on average, were bullied **About Monthly** and 20 percent were bullied **About Weekly**. Students bullied **About Weekly** reported experiencing each of three of the six behaviors "once or twice a month" (bullied 3-6 times a month) and, in addition, each of the other three "a few times a year," on average.

Fourth grade students' reports about being bullied were directly related to their average reading achievement on PIRLS 2011. Each successive category of increased bullying was related to a decrease in average reading achievement to the extent that there was a 34-point difference in achievement between **Almost Never** being bullied and being bullied **About Weekly** (523 vs. 489). Higher percentages of students in the sixth grade and prePIRLS countries reported being bullied **About Weekly** than did students, on average, in the fourth grade. However, there were also several countries where relatively high percentages of fourth grade students (37–38%) reported being bullied **About Weekly**.

## Exhibit 6.7: Students Bullied at School

Reported by Students

Students were scored according to their responses to how often they experienced six bullying behaviors on the *Students Bullied at School* scale. Students bullied **Almost Never** had a score on the scale of at least 10.1, which corresponds to “never” experiencing three of the six bullying behaviors and each of the other three behaviors “a few times a year,” on average. Students bullied **About Weekly** had a score no higher than 8.3, which corresponds to their experiencing each of three of the six behaviors “once or twice a month” and each of the other three “a few times a year,” on average. All other students were bullied **About Monthly**.

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Azerbaijan	75 (1.5)	476 (3.1)	16 (1.1)	461 (3.9)	9 (0.7)	429 (6.1)	11.4 (0.08)
Sweden	68 (1.0)	548 (2.4)	25 (1.0)	535 (3.0)	7 (0.5)	509 (4.7)	11.0 (0.04)
Georgia	66 (1.1)	502 (2.7)	23 (0.8)	486 (4.1)	11 (0.8)	441 (8.1)	10.9 (0.06)
Denmark	65 (0.9)	559 (1.9)	27 (0.9)	550 (2.5)	8 (0.4)	534 (5.1)	10.8 (0.04)
Ireland	64 (1.2)	563 (2.5)	25 (0.9)	545 (4.0)	12 (0.8)	510 (5.0)	10.7 (0.05)
Finland	61 (1.2)	573 (2.1)	30 (0.9)	566 (2.7)	9 (0.6)	543 (4.0)	10.6 (0.04)
Poland	61 (0.9)	533 (2.3)	26 (0.8)	524 (3.1)	13 (0.6)	500 (3.6)	10.7 (0.04)
Croatia	61 (1.1)	560 (2.2)	28 (0.9)	550 (2.3)	11 (0.6)	526 (3.5)	10.6 (0.05)
Northern Ireland	57 (1.3)	567 (2.7)	29 (1.0)	557 (3.8)	14 (0.9)	527 (5.0)	10.4 (0.06)
France	54 (1.2)	529 (2.5)	32 (0.9)	513 (3.5)	13 (0.8)	503 (3.7)	10.3 (0.05)
Austria	53 (1.3)	536 (2.1)	30 (0.9)	529 (3.0)	17 (0.9)	511 (3.2)	10.2 (0.05)
Norway	53 (1.8)	514 (2.4)	33 (1.1)	504 (2.9)	14 (0.9)	494 (3.9)	10.2 (0.06)
Chinese Taipei	53 (1.3)	562 (2.1)	30 (0.8)	552 (2.6)	17 (0.8)	528 (3.2)	10.3 (0.06)
United States	52 (0.7)	568 (1.7)	30 (0.5)	557 (1.7)	18 (0.5)	531 (2.8)	10.2 (0.03)
Netherlands	51 (1.0)	550 (2.2)	33 (0.8)	548 (2.0)	16 (0.8)	530 (3.3)	10.1 (0.04)
Italy	51 (1.2)	549 (2.4)	33 (1.0)	543 (2.7)	16 (0.7)	521 (4.1)	10.2 (0.05)
Hong Kong SAR	51 (1.2)	577 (2.4)	33 (0.8)	571 (2.6)	17 (0.6)	553 (3.7)	10.1 (0.04)
Slovenia	50 (1.3)	538 (2.2)	32 (0.8)	535 (3.1)	18 (1.0)	502 (3.6)	10.1 (0.06)
Portugal	48 (1.4)	548 (3.1)	35 (1.2)	541 (2.6)	17 (0.9)	521 (4.6)	10.1 (0.06)
Germany	48 (1.1)	554 (2.7)	36 (0.8)	540 (2.1)	16 (0.7)	523 (4.4)	10.1 (0.05)
Lithuania	48 (1.3)	539 (2.3)	35 (0.9)	529 (3.0)	17 (0.8)	498 (3.8)	10.1 (0.05)
Romania	47 (1.8)	518 (4.5)	32 (1.5)	502 (5.5)	21 (1.1)	476 (6.8)	10.0 (0.07)
Slovak Republic	46 (1.1)	545 (2.3)	34 (0.8)	535 (3.5)	20 (0.9)	516 (3.9)	10.0 (0.05)
Bulgaria	46 (1.3)	544 (4.5)	35 (1.0)	534 (4.1)	18 (0.8)	511 (5.0)	10.0 (0.05)
Czech Republic	46 (1.2)	553 (2.6)	34 (1.0)	547 (2.6)	20 (0.8)	526 (3.8)	10.0 (0.05)
Russian Federation	45 (1.4)	576 (2.9)	35 (1.0)	567 (3.1)	19 (1.0)	555 (3.9)	10.0 (0.06)
England	45 (1.5)	567 (3.2)	35 (1.0)	552 (3.0)	20 (1.1)	521 (4.8)	9.9 (0.06)
Canada	44 (0.7)	561 (2.0)	36 (0.6)	548 (2.0)	20 (0.6)	526 (2.5)	9.8 (0.03)
Spain	43 (1.1)	521 (2.7)	34 (0.8)	515 (2.6)	23 (0.9)	496 (3.6)	9.8 (0.05)
Malta	42 (0.8)	494 (2.1)	36 (0.8)	478 (3.0)	22 (0.7)	447 (3.4)	9.8 (0.03)
Iran, Islamic Rep. of	41 (1.7)	457 (4.6)	35 (1.2)	462 (3.4)	23 (1.3)	451 (4.1)	9.9 (0.07)
Hungary	40 (1.1)	549 (4.8)	36 (0.8)	544 (3.3)	24 (0.8)	521 (3.4)	9.7 (0.04)
Saudi Arabia	39 (1.7)	446 (4.4)	33 (1.2)	436 (5.1)	27 (1.2)	404 (6.3)	9.6 (0.08)
Singapore	39 (0.9)	581 (3.2)	38 (0.6)	569 (3.5)	23 (0.8)	543 (4.3)	9.7 (0.04)
Australia	37 (1.1)	539 (2.8)	38 (1.0)	529 (2.7)	25 (0.8)	509 (3.8)	9.6 (0.04)
Colombia	36 (1.9)	461 (6.0)	31 (1.2)	462 (4.8)	34 (1.9)	431 (4.3)	9.4 (0.10)
Morocco	35 (1.9)	331 (6.5)	33 (1.0)	313 (4.3)	32 (1.6)	296 (4.8)	9.4 (0.08)
United Arab Emirates	34 (0.8)	460 (3.3)	35 (0.5)	443 (2.8)	31 (0.8)	415 (3.3)	9.4 (0.04)
New Zealand	33 (0.8)	554 (2.6)	37 (0.7)	537 (2.7)	30 (0.8)	504 (2.9)	9.3 (0.03)
Oman	31 (1.2)	407 (3.5)	37 (0.9)	392 (3.5)	31 (1.0)	377 (3.5)	9.3 (0.05)
Qatar	30 (1.1)	459 (4.9)	32 (1.0)	438 (5.1)	38 (1.0)	399 (3.7)	9.1 (0.05)
Belgium (French)	28 (1.0)	511 (3.7)	39 (1.2)	511 (3.4)	33 (1.7)	496 (3.4)	9.2 (0.05)
Indonesia	28 (1.5)	434 (5.0)	36 (1.2)	436 (3.8)	37 (1.4)	425 (5.2)	9.2 (0.07)
Trinidad and Tobago	26 (1.1)	488 (5.2)	37 (1.1)	478 (4.3)	37 (1.2)	455 (4.4)	9.1 (0.05)
Israel	--	--	--	--	--	--	--
International Avg.	47 (0.2)	523 (0.5)	33 (0.1)	513 (0.5)	20 (0.1)	489 (0.7)	

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (–) indicates comparable data are not available.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011



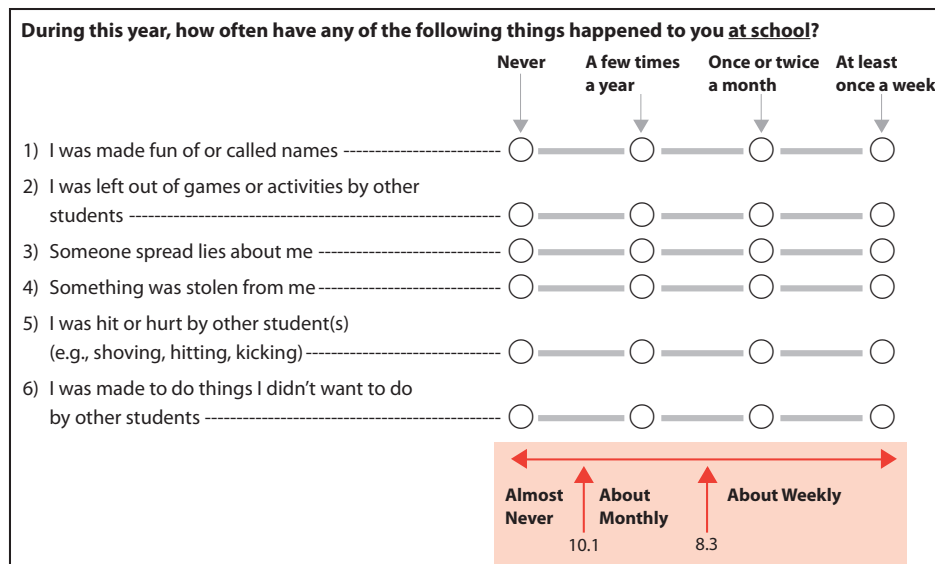
**Exhibit 6.7: Students Bullied at School (Continued)**

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Kuwait	39 (1.1)	459 (5.7)	32 (1.0)	432 (5.6)	28 (1.2)	375 (8.0)	9.6 (0.05)
Morocco	38 (1.5)	438 (4.9)	36 (1.1)	430 (4.7)	26 (1.5)	398 (5.5)	9.6 (0.06)
Honduras	38 (1.2)	461 (5.2)	32 (0.9)	457 (5.0)	30 (1.1)	431 (6.1)	9.5 (0.06)
Botswana	11 (0.7)	450 (8.3)	41 (0.9)	426 (4.8)	47 (1.1)	409 (4.1)	8.6 (0.03)
<b>Benchmarking Participants<sup>◊</sup></b>							
Florida, US	53 (1.5)	579 (3.2)	28 (1.0)	571 (3.6)	19 (1.2)	545 (3.9)	10.2 (0.07)
Andalusia, Spain	46 (1.2)	523 (2.8)	34 (1.0)	515 (2.8)	20 (0.8)	498 (3.2)	10.0 (0.05)
Alberta, Canada	44 (1.1)	560 (3.4)	35 (1.0)	547 (3.3)	21 (0.8)	527 (3.4)	9.8 (0.04)
Quebec, Canada	44 (1.3)	550 (2.3)	37 (1.1)	534 (3.0)	19 (1.1)	517 (3.2)	9.9 (0.05)
Maltese - Malta	41 (0.9)	476 (2.1)	36 (0.8)	456 (2.4)	22 (0.6)	426 (3.1)	9.7 (0.03)
Ontario, Canada	40 (1.2)	567 (2.8)	38 (1.1)	552 (3.5)	22 (1.0)	526 (4.7)	9.7 (0.05)
Dubai, UAE	37 (1.5)	501 (3.2)	35 (0.7)	483 (3.8)	28 (1.1)	445 (4.0)	9.6 (0.06)
Abu Dhabi, UAE	33 (1.4)	441 (6.0)	36 (0.9)	430 (5.5)	31 (1.4)	407 (5.2)	9.4 (0.07)
Eng/Afr (5) - RSA	19 (1.1)	500 (9.2)	33 (1.1)	445 (6.4)	48 (1.6)	386 (8.5)	8.5 (0.06)

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

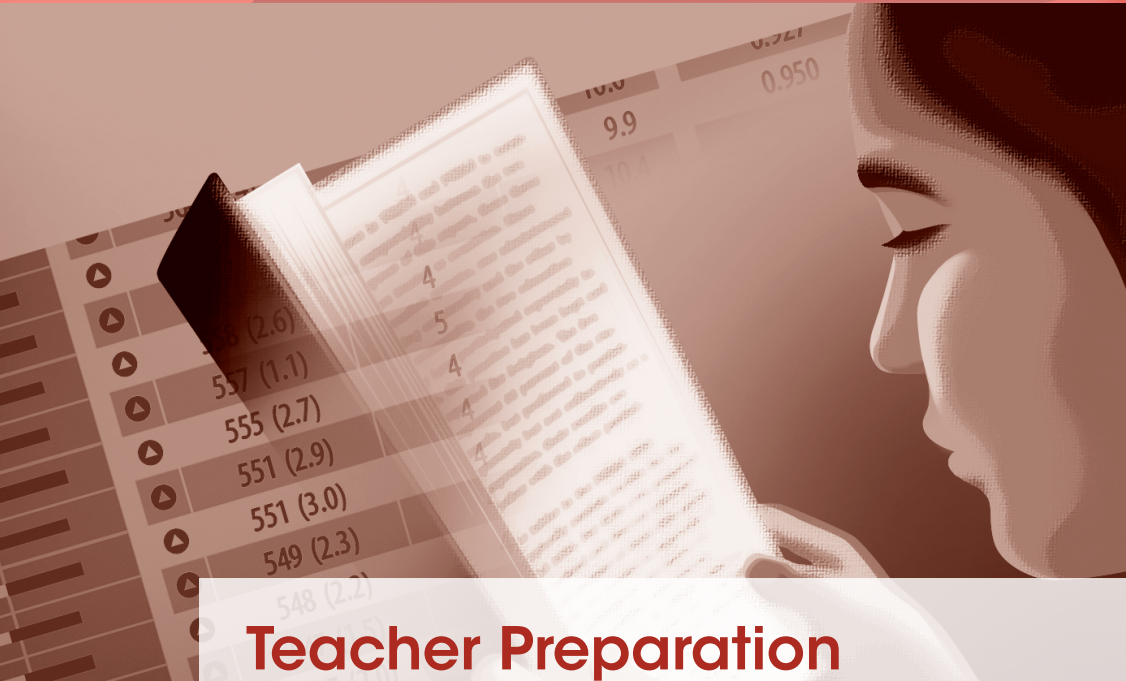
SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	36 (1.9)	587 (5.2)	30 (1.1)	588 (3.9)	34 (1.8)	562 (3.8)	9.4 (0.10)
South Africa	17 (1.1)	511 (6.6)	28 (0.6)	483 (4.3)	55 (1.3)	447 (3.3)	8.3 (0.06)
Botswana	10 (1.3)	497 (9.9)	36 (1.2)	473 (4.0)	54 (1.7)	454 (3.5)	8.4 (0.06)





# Chapter 7



## Teacher Preparation

Higher average reading achievement was associated with specialized education in language or reading. Achievement also was related to teachers' having more experience and being satisfied with their careers.

In view of the importance of a well prepared teaching force to an effective education system, PIRLS 2011 collected a range of information about teacher education. In the *PIRLS 2011 Encyclopedia*, each country chapter describes the educational route to teacher certification, including any additional requirements such as passing an examination or completing an induction year. Each chapter also addresses the requirements and practices for ongoing teacher professional development. Chapter 7 provides information about teachers' education, experience, professional development, and satisfaction with their teaching careers.

### *Reading Teachers' Formal Education*

There is growing evidence that teacher preparation is a powerful predictor of students' achievement, perhaps even overcoming socioeconomic and language background factors (Darling-Hammond, 2000).

Exhibit 7.1 presents teachers' reports about their highest level of formal education. On average, internationally, across the fourth grade countries, 26 percent of the students had reading teachers with a postgraduate university degree, 53 percent had teachers with a bachelor's degree, 15 percent had teachers who had completed post-secondary education (usually a 3-year teacher education program), and 6 percent had teachers with an upper secondary degree. However, it is clear from examining the country-by-country results across the fourth grade, sixth grade, benchmarking, and prePIRLS participants that different countries have different educational paths for becoming a primary level reading teacher.

### *Teachers' Educational Emphasis on Language and Reading Areas*

In addition to the importance of a college or university degree or advanced degree, the literature reports widespread agreement that teachers should have solid mastery of the content in the subject to be taught. Content knowledge may be obtained through a university major in the subject to be taught, although teacher education also needs to teach the skills of the craft (Tucker, 2011).

Exhibit 7.2 shows the percentages of students whose teachers had various areas of specialization in their formal education and training. Internationally, on average, across the fourth grade countries, 72 percent of the students had reading teachers with an emphasis on language, 62 percent had teachers with an emphasis on pedagogy/teaching reading, and 33 percent had teachers with

an emphasis on reading theory. In all three instances, although differences were small, higher average reading achievement was associated with teachers having specialized education. This pattern can be detected for the sixth grade and prePIRLS participants to some extent, but was less consistent for the benchmarking participants.

### *Teachers' Years of Experience*

It is difficult to examine the effects of teacher experience on student achievement, because sometimes more experienced teachers are assigned to students of higher ability and fewer discipline problems, and other times the more experienced teachers are assigned to the lower-achieving students in need of more help. However, some research has addressed this selection bias problem; and experience can have a large positive impact primarily in the first few years of teaching, although the benefits can continue beyond the first five years of teacher's career (Harris & Sass, 2011; Leigh, 2010).

Exhibit 7.3 presents teachers' reports about their years of experience. Internationally, on average, across countries, the fourth grade reading teachers had been teaching for an average of 17 years. Forty-one percent of the students, on average, had very experienced reading teachers with 20 years or more of experience, and another 31 percent had teachers with at least ten years of experience. Taken together, close to three-fourths of the students had very experienced teachers.

Average reading achievement was highest for students whose teachers had 20 or more years of experience and lowest for the 12 percent of students whose teachers had less than five years of experience. This achievement gap most likely is a reflection of more senior teachers receiving the preferred assignments, but also could reflect the fact that the newer teachers still are learning the most effective instructional approaches. There was variation in the results from country to country, including those at the sixth grade and in prePIRLS, as well as for the benchmarking participants.

Reported by Teachers

Country	Percent of Students by Teacher Educational Level			
	Completed Postgraduate University Degree**	Completed Bachelor's Degree or Equivalent but Not a Postgraduate Degree	Completed Post-secondary Education but Not a Bachelor's Degree	No Further than Upper-secondary Education
Australia	64 (3.3)	29 (3.1)	5 (1.8)	1 (1.1)
Austria	4 (1.3)	2 (0.9)	93 (1.6)	0 (0.3)
Azerbaijan	8 (1.9)	55 (3.9)	35 (3.7)	2 (0.8)
Belgium (French)	0 (0.0)	99 (0.5)	0 (0.0)	0 (0.0)
Bulgaria	67 (3.2)	24 (2.8)	9 (2.0)	0 (0.0)
Canada	15 (1.9)	84 (1.9)	1 (0.2)	0 (0.0)
Chinese Taipei	26 (3.7)	72 (3.7)	2 (1.1)	0 (0.0)
Colombia	35 (4.1)	59 (4.3)	6 (1.9)	1 (1.1)
Croatia	1 (0.6)	30 (3.3)	69 (3.2)	1 (0.4)
Czech Republic	93 (2.2)	1 (0.5)	3 (1.6)	3 (1.4)
Denmark	4 (1.2)	75 (2.9)	19 (2.7)	1 (0.8)
England	28 (4.3)	71 (4.3)	1 (0.5)	0 (0.0)
Finland	82 (2.5)	17 (2.3)	0 (0.0)	2 (0.9)
France	75 (3.0)	14 (2.6)	3 (1.1)	8 (1.9)
Georgia	75 (3.4)	21 (3.1)	4 (1.5)	0 (0.0)
Germany	1 (0.7)	83 (2.1)	9 (1.7)	7 (1.7)
Hong Kong SAR	33 (4.1)	59 (4.2)	7 (2.6)	0 (0.0)
Hungary	3 (1.0)	95 (1.5)	2 (1.1)	0 (0.0)
Indonesia	1 (0.6)	56 (4.6)	31 (4.3)	13 (2.9)
Iran, Islamic Rep. of	1 (0.8)	37 (3.4)	49 (3.4)	13 (2.2)
Ireland	18 (2.8)	79 (2.7)	3 (1.3)	0 (0.0)
Israel	13 (3.1)	78 (3.8)	9 (2.5)	0 (0.0)
Italy	4 (1.3)	17 (2.7)	3 (1.3)	76 (3.2)
Lithuania	15 (2.4)	76 (2.7)	8 (1.8)	0 (0.0)
Malta	10 (0.1)	69 (0.1)	11 (0.1)	10 (0.1)
Morocco	0 (0.2)	40 (3.9)	0 (0.0)	60 (4.0)
Netherlands	5 (1.3)	89 (2.2)	5 (1.6)	1 (0.0)
New Zealand	13 (2.0)	69 (2.9)	18 (2.1)	0 (0.0)
Northern Ireland	28 (4.1)	69 (4.3)	3 (1.5)	0 (0.0)
Norway	1 (0.5)	96 (1.3)	3 (1.3)	0 (0.0)
Oman	5 (0.9)	63 (3.0)	31 (3.0)	1 (0.6)
Poland	96 (1.4)	3 (1.2)	1 (0.7)	0 (0.0)
Portugal	3 (0.9)	91 (1.8)	6 (1.6)	0 (0.0)
Qatar	23 (4.5)	70 (4.8)	6 (2.0)	1 (0.5)
Romania	7 (2.1)	30 (3.5)	29 (4.0)	34 (3.5)
Russian Federation	79 (2.6)	0 (0.0)	21 (2.6)	0 (0.0)
Saudi Arabia	0 (0.0)	69 (3.7)	30 (3.7)	1 (0.8)
Singapore	12 (2.1)	56 (2.8)	29 (2.4)	2 (0.8)
Slovak Republic	99 (0.6)	0 (0.2)	1 (0.5)	0 (0.0)
Slovenia	1 (0.5)	57 (3.9)	42 (3.9)	0 (0.0)
Spain	2 (0.8)	98 (0.8)	0 (0.0)	0 (0.1)
Sweden	--	--	--	--
Trinidad and Tobago	4 (1.6)	39 (4.1)	46 (4.3)	10 (2.7)
United Arab Emirates	24 (2.2)	67 (2.2)	9 (1.2)	0 (0.0)
United States	65 (2.8)	35 (2.8)	0 (0.0)	0 (0.0)
<b>International Avg.</b>	<b>26 (0.3)</b>	<b>53 (0.4)</b>	<b>15 (0.3)</b>	<b>6 (0.2)</b>

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

\* Based on countries' categorizations according to UNESCO's International Standard Classification of Education (Operational Manual for ISCED-1997).

\*\* For example, doctorate, master's, or other postgraduate degree or diploma.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (–) indicates comparable data not available.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 7.1: Reading Teachers' Formal Education\* (Continued)**

Country	Percent of Students by Teacher Educational Level			
	Completed Postgraduate University Degree**	Completed Bachelor's Degree or Equivalent but Not a Postgraduate Degree	Completed Post-secondary Education but Not a Bachelor's Degree	No Further than Upper-secondary Education
<b>Sixth Grade Participants</b>				
Botswana	1 (0.0)	16 (3.6)	81 (3.7)	1 (1.0)
Honduras	0 (0.0)	45 (3.7)	21 (3.7)	34 (4.1)
Kuwait	5 (2.5)	92 (3.2)	1 (0.1)	2 (1.6)
Morocco	0 (0.0)	27 (4.1)	0 (0.0)	73 (4.1)
<b>Benchmarking Participants<sup>◊</sup></b>				
Alberta, Canada	5 (1.7)	94 (2.0)	1 (0.9)	0 (0.0)
Ontario, Canada	13 (3.1)	87 (3.1)	0 (0.0)	0 (0.0)
Quebec, Canada	14 (3.3)	86 (3.4)	0 (0.1)	0 (0.0)
Maltese – Malta	12 (0.1)	70 (0.1)	9 (0.1)	10 (0.1)
Eng/Afr (5) – RSA	15 (4.4)	39 (5.8)	37 (4.3)	9 (3.8)
Andalusia, Spain	1 (0.8)	98 (1.0)	0 (0.0)	1 (0.0)
Abu Dhabi, UAE	23 (3.9)	68 (4.0)	9 (2.0)	0 (0.0)
Dubai, UAE	33 (2.0)	58 (2.4)	8 (1.6)	0 (0.0)
Florida, US	45 (5.4)	55 (5.4)	0 (0.0)	0 (0.0)

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Percent of Students by Teacher Educational Level			
	Completed Postgraduate University Degree**	Completed Bachelor's Degree or Equivalent but Not a Postgraduate Degree	Completed Post-secondary Education but Not a Bachelor's Degree	No Further than Upper-secondary Education
Botswana	2 (1.2)	18 (3.2)	80 (3.5)	1 (0.0)
Colombia	35 (4.1)	59 (4.3)	6 (1.9)	1 (1.1)
South Africa	12 (2.0)	32 (3.4)	41 (3.7)	15 (3.1)

**Exhibit 7.2: Teachers Emphasized Language and Reading Areas in Their Formal Education and Training**

Reported by Teachers

Country	Language			Pedagogy / Teaching Reading			Reading Theory		
	Percent of Students	Average Achievement		Percent of Students	Average Achievement		Percent of Students	Average Achievement	
	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized
Australia	r 75 (3.4)	537 (3.7)	515 (4.4)	r 62 (4.1)	534 (4.5)	527 (4.8)	r 28 (4.2)	539 (5.6)	528 (3.6)
Austria	63 (3.3)	530 (2.4)	527 (3.3)	47 (3.3)	530 (2.8)	528 (2.6)	37 (3.2)	531 (3.1)	527 (2.4)
Azerbaijan	72 (3.7)	467 (3.9)	461 (7.6)	66 (3.7)	464 (4.1)	467 (6.5)	58 (4.0)	465 (4.0)	466 (5.5)
Belgium (French)	66 (3.1)	507 (3.5)	507 (4.6)	33 (3.7)	510 (4.5)	506 (3.6)	12 (3.1)	510 (7.5)	507 (3.3)
Bulgaria	97 (1.4)	534 (4.0)	482 (32.4)	97 (1.3)	533 (4.2)	488 (18.0)	50 (3.8)	536 (5.8)	529 (5.9)
Canada	53 (2.6)	545 (2.0)	552 (2.8)	45 (2.9)	548 (3.3)	549 (2.0)	24 (2.5)	551 (4.7)	547 (1.9)
Chinese Taipei	22 (3.3)	547 (3.7)	555 (2.2)	31 (4.2)	555 (3.5)	552 (2.4)	9 (2.4)	552 (6.2)	553 (2.0)
Colombia	55 (4.2)	457 (6.1)	439 (6.1)	42 (4.5)	457 (6.4)	442 (6.3)	29 (3.8)	449 (7.5)	447 (5.2)
Croatia	90 (2.3)	554 (1.9)	548 (4.7)	87 (2.2)	553 (2.1)	555 (4.2)	34 (3.6)	551 (3.1)	555 (2.4)
Czech Republic	87 (2.4)	547 (2.2)	535 (9.9)	67 (3.9)	547 (2.5)	543 (4.6)	31 (3.8)	546 (3.1)	545 (3.0)
Denmark	65 (3.3)	555 (2.3)	553 (2.5)	49 (3.1)	558 (2.2)	551 (2.3)	43 (3.5)	556 (2.6)	554 (2.2)
England	74 (3.5)	553 (3.3)	545 (6.4)	48 (4.4)	552 (4.8)	549 (3.7)	17 (3.1)	551 (7.6)	551 (3.0)
Finland	24 (3.0)	568 (3.9)	568 (2.1)	28 (3.1)	568 (3.3)	568 (2.1)	8 (1.7)	566 (7.5)	568 (1.9)
France	65 (3.3)	521 (3.3)	519 (4.1)	38 (3.3)	521 (4.3)	518 (3.4)	19 (2.4)	520 (7.0)	520 (2.8)
Georgia	92 (2.3)	488 (3.2)	491 (7.1)	88 (2.2)	485 (3.3)	511 (8.3)	53 (3.6)	482 (4.4)	496 (3.9)
Germany	56 (3.2)	541 (3.2)	541 (4.0)	39 (3.3)	537 (3.7)	544 (3.1)	18 (2.9)	545 (5.9)	540 (2.5)
Hong Kong SAR	83 (4.1)	570 (2.7)	574 (7.6)	71 (4.4)	568 (2.8)	576 (4.7)	22 (4.0)	572 (6.0)	570 (2.8)
Hungary	88 (2.1)	538 (3.5)	543 (8.3)	88 (1.9)	537 (3.3)	549 (6.0)	33 (3.4)	533 (6.4)	541 (3.1)
Indonesia	55 (5.3)	429 (4.5)	430 (7.4)	62 (4.8)	437 (4.0)	416 (8.1)	57 (4.9)	431 (4.6)	427 (8.2)
Iran, Islamic Rep. of	55 (3.3)	455 (5.0)	461 (3.7)	62 (3.8)	457 (4.0)	458 (4.8)	19 (2.7)	451 (8.4)	459 (3.2)
Ireland	85 (2.6)	550 (2.5)	565 (5.3)	76 (3.2)	553 (2.8)	548 (4.2)	36 (3.7)	555 (3.7)	550 (3.0)
Israel	85 (2.9)	543 (3.2)	543 (10.5)	66 (3.9)	542 (4.4)	547 (6.4)	48 (4.2)	535 (5.1)	550 (4.5)
Italy	87 (2.1)	542 (2.4)	538 (6.4)	44 (3.6)	541 (3.9)	542 (2.9)	21 (3.2)	536 (5.6)	544 (2.6)
Lithuania	81 (2.8)	530 (2.7)	520 (4.8)	71 (3.2)	528 (2.8)	529 (3.8)	49 (3.1)	529 (3.0)	529 (3.2)
Malta	65 (0.1)	470 (1.6)	487 (2.5)	62 (0.1)	474 (1.9)	478 (2.4)	16 (0.1)	492 (3.4)	473 (1.7)
Morocco	81 (3.9)	314 (4.6)	298 (10.8)	66 (4.3)	315 (5.4)	301 (6.9)	40 (4.6)	308 (7.3)	313 (5.3)
Netherlands	46 (3.9)	544 (3.1)	549 (2.6)	45 (3.7)	541 (2.8)	550 (2.7)	25 (3.5)	544 (4.2)	547 (2.3)
New Zealand	70 (3.2)	538 (2.7)	522 (5.2)	66 (3.0)	534 (3.5)	532 (4.2)	30 (2.5)	528 (5.2)	536 (2.9)
Northern Ireland	r 62 (4.5)	560 (4.2)	561 (3.4)	r 44 (4.9)	563 (4.2)	557 (4.0)	r 20 (3.6)	563 (8.0)	559 (3.2)
Norway	48 (4.5)	509 (2.7)	504 (3.0)	48 (4.7)	506 (3.2)	507 (2.8)	15 (3.1)	506 (4.7)	506 (2.3)
Oman	64 (3.1)	394 (3.4)	389 (5.1)	66 (2.7)	394 (3.2)	388 (5.3)	22 (2.2)	400 (5.1)	390 (3.4)
Poland	61 (3.9)	527 (2.6)	525 (3.7)	70 (3.5)	524 (2.5)	529 (4.4)	38 (3.2)	528 (3.2)	524 (3.0)
Portugal	72 (4.5)	541 (3.0)	541 (5.8)	61 (4.3)	544 (3.4)	535 (4.3)	29 (3.6)	546 (5.0)	538 (3.3)
Qatar	87 (2.9)	424 (4.5)	430 (16.9)	77 (3.9)	429 (5.2)	414 (10.3)	48 (4.2)	433 (7.3)	419 (6.5)
Romania	90 (2.6)	500 (4.8)	505 (12.0)	83 (2.7)	502 (4.4)	492 (11.5)	42 (4.3)	503 (7.4)	499 (5.5)
Russian Federation	95 (1.7)	569 (2.7)	552 (21.0)	95 (1.3)	569 (2.6)	559 (20.5)	76 (3.4)	567 (3.0)	574 (6.7)
Saudi Arabia	87 (3.6)	430 (4.7)	432 (13.2)	71 (4.5)	431 (5.7)	426 (8.8)	39 (4.0)	447 (7.4)	416 (6.3)
Singapore	77 (2.4)	567 (4.0)	565 (6.5)	73 (2.6)	569 (4.0)	562 (6.5)	25 (2.6)	574 (7.0)	564 (3.9)
Slovak Republic	93 (1.6)	534 (2.8)	542 (8.3)	84 (2.6)	533 (2.7)	543 (6.2)	47 (3.4)	535 (3.4)	534 (3.7)
Slovenia	83 (3.0)	530 (2.0)	530 (5.5)	50 (3.8)	532 (2.4)	529 (3.1)	27 (3.4)	534 (3.6)	529 (2.4)
Spain	88 (2.1)	517 (2.5)	493 (8.0)	53 (3.7)	519 (3.1)	507 (3.7)	21 (3.1)	516 (5.7)	513 (3.0)
Sweden	r 81 (3.4)	543 (2.5)	542 (5.4)	r 58 (4.2)	546 (3.4)	539 (2.8)	r 36 (4.0)	544 (3.4)	543 (3.1)
Trinidad and Tobago	82 (3.1)	472 (4.4)	462 (9.2)	72 (3.9)	470 (5.1)	470 (8.5)	55 (4.4)	466 (6.2)	474 (6.0)
United Arab Emirates	90 (1.4)	436 (2.8)	457 (10.6)	r 63 (2.8)	434 (3.6)	446 (6.6)	r 34 (2.4)	432 (5.1)	441 (3.2)
United States	r 52 (2.6)	556 (3.0)	556 (2.6)	r 63 (2.5)	555 (2.3)	557 (3.5)	r 36 (2.1)	552 (2.8)	558 (2.6)
<b>International Avg.</b>	<b>72 (0.5)</b>	<b>513 (0.5)</b>	<b>510 (1.3)</b>	<b>62 (0.5)</b>	<b>513 (0.6)</b>	<b>511 (1.0)</b>	<b>33 (0.5)</b>	<b>514 (0.8)</b>	<b>512 (0.6)</b>

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent. An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011



**Exhibit 7.2: Teachers Emphasized Language and Reading Areas in Their Formal Education and Training (Continued)**

Country	Language			Pedagogy / Teaching Reading			Reading Theory			
	Percent of Students	Average Achievement		Percent of Students	Average Achievement		Percent of Students	Average Achievement		
	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized	
<b>Sixth Grade Participants</b>										
Botswana	53 (4.4)	434 (7.0)	407 (5.1)	r	45 (5.2)	439 (8.3)	405 (5.1)	32 (4.5)	445 (10.3)	409 (4.4)
Honduras	49 (5.1)	443 (9.1)	453 (6.9)	r	37 (4.8)	447 (9.1)	446 (7.5)	r	26 (3.7)	450 (9.7)
Kuwait	s	94 (2.8)	417 (7.5)	428 (46.1)	s	69 (4.5)	417 (8.6)	418 (14.8)	s	25 (4.7)
Morocco	r	85 (3.5)	420 (5.3)	427 (7.4)	r	70 (4.4)	421 (5.1)	420 (9.8)	r	37 (4.6)
<b>Benchmarking Participants<sup>o</sup></b>										
Alberta, Canada	55 (3.4)	545 (4.5)	552 (3.9)		43 (3.7)	551 (4.5)	545 (3.7)	23 (3.1)	550 (5.0)	547 (3.3)
Ontario, Canada	47 (4.4)	547 (4.5)	555 (3.5)		52 (3.9)	545 (3.4)	558 (3.8)	28 (3.8)	549 (5.3)	552 (3.0)
Quebec, Canada	56 (4.3)	536 (3.3)	538 (3.0)		34 (4.0)	536 (3.1)	538 (2.7)	17 (3.8)	536 (4.1)	537 (2.4)
Maltese - Malta	s	67 (0.2)	456 (2.0)	465 (2.9)	s	61 (0.2)	460 (2.2)	457 (3.0)	s	15 (0.1)
Eng/Afr (5) - RSA	r	75 (5.2)	430 (8.3)	430 (17.4)	r	52 (6.9)	423 (13.5)	447 (15.0)	r	35 (5.9)
Andalusia, Spain		88 (2.7)	517 (2.7)	505 (6.0)		62 (3.8)	516 (3.0)	511 (3.7)		20 (3.0)
Abu Dhabi, UAE		90 (2.6)	422 (5.2)	449 (22.5)	r	64 (4.7)	416 (5.7)	436 (11.8)	r	43 (4.6)
Dubai, UAE	r	88 (2.3)	477 (2.8)	476 (10.7)	r	57 (4.6)	479 (6.1)	477 (7.8)	r	28 (3.3)
Florida, US	r	55 (4.2)	563 (5.5)	578 (5.1)	r	76 (4.0)	567 (4.3)	576 (8.6)	r	49 (4.8)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Language			Pedagogy / Teaching Reading			Reading Theory			
	Percent of Students	Average Achievement		Percent of Students	Average Achievement		Percent of Students	Average Achievement		
	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized	
Botswana	54 (4.3)	470 (6.5)	455 (4.2)		44 (4.5)	474 (8.2)	455 (4.0)	33 (3.9)	482 (9.7)	454 (3.3)
Colombia	55 (4.2)	584 (5.0)	570 (4.9)		42 (4.5)	584 (5.2)	572 (5.0)	29 (3.8)	578 (6.3)	577 (4.0)
South Africa	63 (3.3)	471 (5.8)	445 (8.5)	r	55 (3.9)	464 (6.5)	463 (7.5)	r	36 (3.6)	452 (7.1)

**Exhibit 7.3: Teachers' Years of Experience**

Reported by Teachers

Country	20 Years or More		At Least 10 but Less than 20 Years		At Least 5 but Less than 10 Years		Less than 5 Years		Average Years of Experience
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Australia	42 (4.0)	530 (5.1)	22 (3.5)	533 (5.7)	19 (2.9)	529 (6.3)	17 (3.2)	534 (7.2)	17 (1.0)
Austria	55 (2.8)	532 (2.4)	25 (2.7)	526 (4.0)	11 (1.9)	532 (3.9)	10 (1.9)	513 (6.8)	21 (0.6)
Azerbaijan	60 (4.5)	466 (3.8)	26 (3.1)	456 (8.6)	11 (2.7)	440 (10.4)	4 (2.0)	484 (33.4)	23 (1.1)
Belgium (French)	40 (3.9)	516 (3.9)	32 (3.8)	502 (4.9)	16 (3.4)	504 (6.7)	12 (2.5)	498 (12.5)	16 (0.7)
Bulgaria	72 (3.3)	533 (5.2)	24 (3.0)	532 (7.8)	2 (1.0)	~ ~	2 (1.2)	~ ~	24 (0.6)
Canada	30 (2.2)	546 (2.5)	33 (2.6)	552 (3.7)	25 (1.9)	547 (3.4)	12 (1.3)	545 (4.3)	14 (0.4)
Chinese Taipei	26 (3.3)	558 (3.9)	50 (3.8)	551 (2.5)	17 (3.3)	559 (5.1)	7 (2.0)	536 (6.1)	15 (0.6)
Colombia	43 (4.5)	447 (6.0)	35 (4.4)	442 (5.9)	16 (3.3)	451 (15.8)	7 (1.6)	496 (19.4)	18 (0.7)
Croatia	56 (3.4)	557 (2.5)	30 (2.9)	545 (3.2)	9 (2.0)	559 (6.1)	5 (1.4)	552 (6.5)	21 (0.7)
Czech Republic	48 (4.0)	543 (3.3)	27 (3.6)	544 (3.5)	12 (2.4)	551 (5.4)	13 (2.9)	554 (7.7)	18 (0.8)
Denmark	35 (3.7)	557 (2.4)	25 (3.1)	552 (3.6)	22 (2.6)	554 (2.5)	18 (2.8)	553 (4.5)	16 (0.9)
England	14 (3.1)	566 (8.0)	27 (3.7)	550 (6.3)	29 (3.7)	558 (5.0)	30 (4.1)	538 (5.7)	10 (0.7)
Finland	40 (3.1)	567 (3.1)	35 (3.1)	570 (2.5)	12 (2.0)	571 (4.4)	13 (2.0)	564 (4.2)	17 (0.6)
France	34 (3.4)	530 (3.7)	36 (3.0)	516 (3.8)	19 (2.5)	520 (3.5)	11 (2.1)	506 (8.0)	16 (0.7)
Georgia	59 (3.4)	486 (3.3)	29 (3.5)	489 (6.2)	8 (1.9)	497 (18.8)	4 (1.6)	471 (16.4)	22 (0.7)
Germany	44 (3.8)	539 (3.6)	25 (3.2)	542 (4.8)	14 (2.7)	546 (6.4)	16 (2.6)	540 (5.4)	19 (0.9)
Hong Kong SAR	21 (3.5)	564 (6.4)	53 (4.0)	569 (3.8)	15 (3.3)	573 (5.9)	12 (2.5)	582 (5.1)	14 (0.7)
Hungary	73 (3.0)	544 (3.1)	16 (2.8)	525 (12.8)	7 (1.7)	537 (11.7)	4 (1.4)	505 (10.9)	24 (0.6)
Indonesia	52 (4.9)	438 (5.4)	16 (3.7)	432 (10.3)	19 (3.8)	429 (10.6)	12 (3.1)	395 (15.3)	18 (1.0)
Iran, Islamic Rep. of	41 (3.6)	476 (5.3)	41 (3.5)	449 (5.0)	10 (1.9)	447 (13.3)	9 (1.8)	421 (10.8)	17 (0.6)
Ireland	24 (3.0)	551 (4.5)	21 (3.1)	555 (5.7)	27 (3.3)	550 (4.0)	27 (2.9)	553 (4.6)	12 (0.7)
Israel	30 (3.8)	545 (5.7)	36 (3.9)	546 (7.0)	16 (2.7)	537 (9.6)	18 (3.0)	531 (11.3)	15 (0.8)
Italy	69 (3.6)	543 (2.8)	24 (3.4)	539 (3.4)	6 (1.7)	539 (7.4)	1 (0.8)	~ ~	24 (0.7)
Lithuania	71 (2.5)	527 (2.6)	26 (2.3)	534 (3.6)	2 (1.0)	~ ~	1 (0.5)	~ ~	24 (0.6)
Malta	18 (0.1)	491 (2.8)	38 (0.1)	475 (2.5)	29 (0.1)	472 (2.4)	15 (0.1)	477 (4.1)	12 (0.0)
Morocco	56 (4.2)	309 (5.3)	31 (4.4)	294 (8.9)	8 (1.6)	336 (17.4)	5 (1.4)	394 (16.4)	21 (0.6)
Netherlands	28 (3.1)	549 (3.0)	29 (3.4)	542 (3.2)	24 (3.2)	549 (3.4)	19 (3.0)	545 (5.3)	14 (0.8)
New Zealand	20 (2.5)	542 (5.3)	26 (2.6)	533 (5.1)	28 (2.5)	540 (4.6)	27 (2.5)	521 (5.4)	11 (0.6)
Northern Ireland	34 (4.7)	556 (3.8)	36 (4.0)	563 (4.8)	24 (4.2)	561 (6.2)	7 (2.3)	564 (20.2)	16 (1.0)
Norway	31 (4.4)	506 (4.1)	40 (4.6)	510 (2.7)	15 (3.3)	507 (4.9)	15 (2.4)	509 (5.9)	16 (1.0)
Oman	12 (1.9)	409 (6.7)	36 (2.8)	396 (4.6)	31 (2.9)	385 (5.2)	21 (2.1)	385 (6.4)	11 (0.4)
Poland	83 (2.2)	526 (2.4)	11 (2.1)	529 (7.4)	4 (1.5)	518 (10.7)	2 (0.9)	~ ~	23 (0.4)
Portugal	36 (3.2)	549 (3.4)	46 (3.6)	532 (4.2)	14 (2.5)	535 (6.5)	4 (1.6)	566 (11.9)	17 (0.6)
Qatar	20 (4.3)	450 (14.6)	25 (4.3)	447 (9.1)	30 (4.1)	422 (8.6)	25 (3.5)	388 (9.0)	11 (0.7)
Romania	57 (3.7)	511 (4.8)	31 (3.5)	487 (8.2)	9 (2.3)	478 (13.4)	2 (1.0)	~ ~	23 (0.8)
Russian Federation	73 (3.0)	571 (3.0)	22 (2.7)	567 (6.3)	3 (1.1)	526 (16.2)	3 (1.5)	559 (12.0)	24 (0.7)
Saudi Arabia	16 (3.1)	422 (14.5)	50 (4.5)	439 (5.3)	18 (3.0)	428 (15.2)	17 (3.5)	412 (12.9)	13 (0.7)
Singapore	17 (1.8)	570 (7.4)	27 (2.6)	563 (6.9)	24 (2.5)	575 (5.5)	32 (2.1)	564 (5.7)	11 (0.5)
Slovak Republic	55 (3.0)	536 (4.4)	28 (2.9)	531 (3.4)	10 (2.1)	546 (5.9)	7 (1.8)	530 (8.4)	20 (0.5)
Slovenia	57 (3.8)	532 (2.3)	27 (3.1)	532 (3.9)	10 (2.2)	517 (6.4)	6 (1.5)	523 (8.0)	21 (0.7)
Spain	59 (4.1)	519 (3.0)	19 (3.4)	502 (7.1)	8 (1.3)	510 (7.3)	14 (2.6)	502 (6.9)	21 (0.8)
Sweden	29 (4.2)	546 (3.8)	45 (4.0)	543 (3.8)	18 (2.7)	529 (4.3)	8 (1.9)	551 (6.3)	16 (0.9)
Trinidad and Tobago	43 (4.0)	487 (6.5)	35 (4.0)	459 (7.1)	9 (2.4)	459 (15.4)	12 (2.5)	452 (13.8)	18 (1.0)
United Arab Emirates	12 (1.6)	434 (9.1)	30 (2.3)	441 (7.3)	33 (2.3)	439 (6.2)	25 (2.0)	436 (6.0)	10 (0.3)
United States	28 (2.2)	569 (3.8)	38 (2.1)	553 (3.1)	19 (2.0)	550 (4.3)	15 (1.9)	552 (5.2)	14 (0.5)
International Avg.	41 (0.5)	517 (0.8)	31 (0.5)	511 (0.9)	16 (0.4)	510 (1.4)	12 (0.3)	507 (1.7)	17 (0.1)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 7.3: Teachers' Years of Experience (Continued)**

Country	20 Years or More		At Least 10 but Less than 20 Years		At Least 5 but Less than 10 Years		Less than 5 Years		Average Years of Experience
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>									
Botswana	29 (4.0)	434 (9.2)	32 (4.1)	421 (10.4)	23 (3.7)	401 (8.4)	16 (3.0)	420 (9.8)	14 (0.8)
Honduras	29 (4.2)	465 (6.4)	37 (4.6)	436 (7.9)	17 (3.7)	458 (7.2)	17 (4.0)	459 (20.6)	14 (0.9)
Kuwait	9 (2.9)	419 (7.2)	23 (4.5)	412 (16.5)	16 (3.8)	429 (21.7)	52 (4.9)	419 (12.8)	7 (0.7)
Morocco	53 (4.4)	422 (7.4)	38 (4.3)	407 (9.3)	7 (2.0)	468 (14.8)	2 (0.9)	~ ~	21 (0.7)
<b>Benchmarking Participants<sup>◇</sup></b>									
Alberta, Canada	33 (3.8)	544 (4.2)	23 (3.2)	560 (5.8)	23 (3.6)	554 (6.2)	21 (3.1)	533 (5.5)	14 (0.8)
Ontario, Canada	20 (2.9)	549 (6.3)	31 (4.0)	550 (5.1)	33 (3.5)	553 (4.9)	17 (2.7)	551 (7.3)	12 (0.5)
Quebec, Canada	33 (4.2)	538 (3.7)	40 (4.6)	539 (3.2)	20 (3.6)	533 (6.7)	7 (1.9)	537 (6.4)	16 (0.7)
Maltese - Malta	17 (0.1)	467 (3.7)	35 (0.1)	456 (2.3)	34 (0.1)	454 (2.6)	14 (0.1)	460 (3.7)	12 (0.0)
Eng/Afr (5) - RSA	43 (5.0)	415 (15.3)	24 (4.6)	420 (14.8)	15 (3.5)	450 (25.3)	17 (4.7)	455 (22.5)	17 (1.1)
Andalusia, Spain	58 (3.9)	521 (3.2)	16 (3.1)	520 (5.7)	11 (2.6)	501 (8.7)	15 (2.8)	498 (7.2)	21 (1.0)
Abu Dhabi, UAE	15 (3.2)	397 (12.8)	31 (4.4)	428 (13.5)	28 (4.1)	419 (10.4)	26 (3.7)	438 (9.7)	10 (0.6)
Dubai, UAE	13 (2.6)	492 (10.3)	28 (3.6)	477 (9.7)	38 (4.3)	482 (8.8)	21 (2.6)	470 (8.5)	11 (0.6)
Florida, US	26 (4.3)	572 (8.6)	33 (4.3)	576 (6.1)	30 (3.9)	566 (6.6)	11 (3.5)	563 (8.0)	15 (0.9)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	20 Years or More		At Least 10 but Less than 20 Years		At Least 5 but Less than 10 Years		Less than 5 Years		Average Years of Experience
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Botswana	26 (4.0)	473 (10.9)	33 (4.3)	474 (7.8)	11 (3.0)	444 (8.1)	30 (4.3)	451 (6.4)	14 (0.9)
Colombia	43 (4.5)	576 (5.5)	35 (4.4)	570 (5.4)	16 (3.3)	580 (11.8)	7 (1.6)	617 (10.0)	18 (0.7)
South Africa	40 (3.6)	471 (8.8)	31 (2.9)	463 (8.4)	13 (2.1)	440 (10.5)	16 (2.7)	455 (11.6)	17 (0.8)

### *Teachers' Professional Development*

Although a number of studies have been unable to detect an effect on student achievement associated with professional development, recent research shows a positive relationship between teacher professional development and student literacy achievement (Biancarosa, Bryk, & Dexter, 2010). A meta-analysis of nine studies indicated that the amount of professional development (more than 14 hours) was an important factor (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Exhibit 7.4 presents teachers' reports about the time spent on professional development related to reading. In general, the teachers were not spending large amounts of time on reading professional development. On average, across the fourth grade countries, 24 percent of the students had teachers that had spent 16 hours or more in professional development in the past two years, 50 percent had teachers that had spent some time but less than 16 hours, and 25 percent had teachers that had not spent any time in professional development for reading. Consistent with considerable research showing little impact from small amounts of time spent on professional development, students had essentially the same average reading achievement for the different amounts of professional development from 0 to 16 hours or more. However, it should be emphasized that there was considerable variation across the countries including the fourth grade, sixth grade, benchmarking, and prePIRLS participants.

### *Teachers' Career Satisfaction*

Teachers who are satisfied with their profession and the working conditions at their school are more motivated to teach and prepare their instruction. Further, having teachers that can provide leadership is a dimension of teacher quality. However, developing master teachers requires retention in the profession. Teachers need to be committed to the profession and like it enough to continue teaching. It may be that some subject areas and locales would benefit from policies to reduce teacher attrition in order to improve student achievement (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009).

Exhibit 7.5 shows the results for the PIRLS 2011 Teacher Career Satisfaction scale, based on how much teachers agreed with each of the following six statements:

- ◆ I am content with my profession as a teacher;
- ◆ I am satisfied with being a teacher at this school;
- ◆ I had more enthusiasm when I began teaching than I have now (reverse coded);
- ◆ I do important work as a teacher;
- ◆ I plan to continue as a teacher for as long as I can; and
- ◆ I am frustrated as a teacher (reverse coded).

Students were scored according to their teachers responses, with **Satisfied** teachers “agreeing a lot” with three of the six statements and “agreeing a little” with the other three, on average. Internationally, on average, the majority of the fourth grade students had teachers **Satisfied** with their careers. Another 40 percent of the students, on average, had teachers that reported being **Somewhat Satisfied** (mostly agreed “a little” instead of “a lot”). Despite the fact that satisfaction could be relative, and dependent on the teaching situation, very few fourth grade students had reading teachers that expressed any dissatisfaction except in a small number of countries.

The Teacher Career Satisfaction scale was positively related to average reading achievement. On average, reading achievement was higher for the fourth grade students of **Satisfied** teachers than for students of somewhat or less than satisfied teachers. However, looking across the countries at the fourth grade, sixth grade, benchmarking, and prePIRLS participants, it is clear that there are differences from country to country. That is, the across-county patterns are less consistent than the within-country patterns, with some high-performing and low-performing countries having large percentages of students taught by **Satisfied** teachers as well as some high-performing and low-performing countries having large percentages of students taught by teachers reporting to be only **Somewhat Satisfied**.

**Exhibit 7.4: Teacher Time Spent on Professional Development Related to Reading in the Past Two Years**

Reported by Teachers

Country	16 Hours or More		Some Time but Less than 16 Hours		No Time		Percent of Students Whose Teachers Read Children's Books At Least Once a Month for Professional Development
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Australia	r 30 (4.0)	525 (5.1)	57 (3.8)	532 (4.7)	13 (3.2)	546 (10.9)	r 72 (3.7)
Austria	17 (2.4)	530 (4.2)	76 (3.0)	529 (2.2)	7 (1.7)	525 (6.9)	63 (2.8)
Azerbaijan	40 (3.9)	461 (5.1)	44 (3.7)	464 (5.1)	16 (2.8)	473 (5.8)	99 (0.4)
Belgium (French)	9 (2.2)	506 (7.9)	51 (4.1)	504 (4.1)	41 (4.0)	512 (4.6)	64 (4.7)
Bulgaria	8 (2.1)	544 (10.2)	38 (3.4)	537 (6.7)	54 (3.4)	527 (5.2)	87 (2.4)
Canada	30 (2.2)	550 (2.6)	62 (2.3)	548 (2.3)	7 (1.1)	548 (4.2)	83 (1.8)
Chinese Taipei	25 (3.5)	556 (2.6)	64 (3.9)	552 (2.5)	11 (1.9)	554 (5.2)	85 (2.8)
Colombia	34 (3.8)	453 (7.2)	38 (3.8)	454 (7.4)	28 (4.4)	433 (7.1)	96 (1.3)
Croatia	11 (2.6)	548 (5.9)	75 (3.5)	552 (2.0)	14 (2.9)	562 (6.0)	92 (2.2)
Czech Republic	9 (2.2)	530 (12.5)	52 (4.1)	543 (2.7)	40 (4.0)	551 (3.2)	45 (3.8)
Denmark	25 (2.6)	562 (2.7)	49 (2.8)	550 (2.5)	26 (2.6)	554 (3.7)	69 (3.3)
England	7 (2.3)	539 (11.2)	66 (3.9)	550 (3.5)	27 (3.7)	556 (6.6)	72 (3.8)
Finland	4 (1.3)	578 (11.8)	28 (3.5)	570 (3.2)	68 (3.3)	567 (2.1)	43 (3.8)
France	2 (1.1)	~ ~	38 (2.9)	518 (4.6)	60 (2.9)	520 (3.0)	64 (3.8)
Georgia	42 (3.4)	488 (4.3)	32 (3.8)	493 (6.1)	25 (3.4)	480 (6.2)	93 (1.9)
Germany	4 (1.4)	540 (7.7)	71 (3.2)	543 (2.7)	25 (2.8)	534 (4.8)	50 (3.2)
Hong Kong SAR	29 (4.2)	568 (5.0)	63 (4.6)	572 (3.2)	8 (2.3)	570 (8.7)	65 (4.8)
Hungary	31 (3.2)	542 (4.6)	48 (3.7)	537 (4.5)	21 (2.9)	537 (8.2)	68 (3.5)
Indonesia	19 (4.8)	444 (8.8)	33 (4.2)	418 (8.3)	48 (4.4)	429 (5.5)	95 (2.3)
Iran, Islamic Rep. of	47 (3.2)	451 (4.7)	25 (2.7)	467 (7.1)	28 (3.4)	461 (7.3)	70 (3.1)
Ireland	11 (2.3)	540 (8.5)	52 (3.8)	550 (3.4)	37 (3.5)	558 (3.5)	44 (3.7)
Israel	72 (3.8)	545 (3.5)	14 (3.2)	532 (13.8)	14 (3.1)	540 (13.2)	79 (3.7)
Italy	21 (3.1)	537 (5.8)	48 (3.7)	544 (2.8)	30 (3.6)	542 (4.1)	73 (3.2)
Lithuania	14 (2.3)	538 (4.2)	68 (2.9)	526 (2.6)	18 (2.9)	528 (5.5)	78 (2.8)
Malta	19 (0.1)	478 (3.4)	58 (0.1)	471 (1.9)	23 (0.1)	493 (3.3)	73 (0.1)
Morocco	4 (1.2)	305 (17.9)	24 (2.4)	342 (8.1)	71 (2.3)	301 (4.9)	69 (3.9)
Netherlands	20 (2.9)	540 (4.6)	60 (3.8)	548 (2.3)	21 (3.2)	546 (4.8)	48 (3.5)
New Zealand	27 (3.0)	526 (5.1)	60 (3.3)	539 (3.1)	13 (2.2)	525 (8.7)	70 (3.0)
Northern Ireland	r 12 (2.4)	562 (12.6)	69 (4.1)	556 (2.8)	19 (3.6)	575 (7.1)	r 59 (4.6)
Norway	18 (3.3)	514 (4.5)	49 (4.6)	507 (2.8)	32 (4.7)	502 (3.5)	46 (4.9)
Oman	33 (2.9)	399 (3.5)	50 (2.9)	392 (4.0)	17 (2.6)	378 (6.5)	76 (2.6)
Poland	15 (2.8)	533 (5.7)	69 (3.7)	525 (2.5)	16 (2.9)	523 (6.3)	90 (2.4)
Portugal	45 (4.6)	545 (3.7)	36 (4.7)	537 (5.7)	19 (3.1)	536 (4.0)	93 (1.6)
Qatar	32 (4.0)	422 (8.8)	55 (4.2)	423 (6.6)	14 (2.6)	434 (21.5)	85 (3.3)
Romania	51 (4.1)	498 (5.9)	39 (4.0)	503 (6.9)	11 (2.4)	504 (15.5)	93 (1.7)
Russian Federation	39 (3.3)	565 (4.7)	43 (3.2)	571 (4.0)	18 (2.8)	569 (6.7)	95 (1.4)
Saudi Arabia	22 (3.6)	433 (8.1)	64 (4.5)	430 (7.1)	14 (3.6)	431 (11.1)	69 (3.7)
Singapore	31 (2.5)	571 (6.9)	51 (2.8)	567 (4.2)	18 (2.2)	556 (7.6)	72 (2.6)
Slovak Republic	13 (2.1)	532 (9.8)	38 (3.1)	539 (3.9)	49 (3.3)	533 (3.2)	63 (3.6)
Slovenia	16 (2.7)	530 (4.4)	66 (3.4)	529 (2.4)	18 (2.5)	534 (5.4)	83 (2.7)
Spain	33 (3.7)	518 (4.0)	29 (3.9)	518 (4.8)	38 (3.1)	505 (4.0)	62 (3.8)
Sweden	r 32 (3.7)	543 (4.1)	44 (4.3)	540 (3.2)	23 (3.8)	548 (3.7)	r 46 (4.5)
Trinidad and Tobago	33 (4.2)	467 (7.2)	46 (4.5)	473 (5.9)	21 (2.9)	474 (11.5)	92 (2.3)
United Arab Emirates	24 (2.2)	425 (5.7)	59 (2.6)	437 (3.4)	17 (2.0)	467 (6.8)	r 89 (1.8)
United States	41 (2.3)	551 (3.3)	55 (2.4)	559 (2.5)	4 (1.1)	567 (11.4)	r 78 (2.0)
<b>International Avg.</b>	<b>24 (0.5)</b>	<b>512 (1.1)</b>	<b>50 (0.5)</b>	<b>513 (0.7)</b>	<b>25 (0.5)</b>	<b>513 (1.1)</b>	<b>73 (0.5)</b>

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 7.4: Teacher Time Spent on Professional Development Related to Reading in the Past Two Years (Continued)**

Country	16 Hours or More		Some Time but Less than 16 Hours		No Time		Percent of Students Whose Teachers Read Children's Books At Least Once a Month for Professional Development
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Botswana	10 (2.4)	440 (15.8)	41 (4.1)	417 (5.4)	49 (4.1)	418 (7.3)	r 95 (2.0)
Honduras	37 (4.8)	445 (12.3)	46 (4.8)	455 (6.8)	17 (3.7)	442 (8.4)	r 86 (3.6)
Kuwait	s 22 (4.6)	423 (11.7)	63 (5.4)	420 (8.9)	14 (3.6)	398 (27.3)	s 83 (4.4)
Morocco	r 7 (1.5)	464 (10.5)	32 (4.6)	435 (13.0)	62 (4.5)	410 (5.7)	r 61 (5.2)
<b>Benchmarking Participants<sup>◇</sup></b>							
Alberta, Canada	37 (3.5)	548 (4.4)	54 (3.5)	545 (4.3)	9 (2.5)	569 (8.8)	r 84 (3.1)
Ontario, Canada	38 (3.7)	553 (4.8)	58 (3.6)	550 (3.5)	4 (1.8)	541 (8.2)	r 90 (2.3)
Quebec, Canada	14 (2.9)	532 (4.5)	70 (4.0)	538 (2.8)	15 (3.2)	539 (7.0)	r 73 (4.2)
Maltese - Malta	s 18 (0.1)	451 (4.7)	52 (0.2)	459 (2.3)	30 (0.2)	460 (3.4)	s 72 (0.1)
Eng/Afr (5) - RSA	16 (3.9)	389 (29.9)	53 (5.3)	433 (11.8)	31 (4.8)	441 (15.2)	r 77 (4.5)
Andalusia, Spain	40 (4.2)	511 (4.1)	27 (3.6)	518 (5.3)	33 (4.1)	517 (4.2)	r 65 (4.0)
Abu Dhabi, UAE	25 (3.6)	402 (10.5)	54 (4.7)	422 (7.8)	21 (4.1)	457 (7.8)	r 90 (2.9)
Dubai, UAE	r 22 (2.3)	466 (7.9)	64 (2.4)	473 (3.2)	14 (2.0)	521 (8.0)	r 87 (2.3)
Florida, US	r 57 (5.7)	565 (6.4)	43 (5.6)	575 (5.3)	1 (0.0)	~ ~	r 87 (3.0)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	16 Hours or More		Some Time but Less than 16 Hours		No Time		Percent of Students Whose Teachers Read Children's Books At Least Once a Month for Professional Development
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Botswana	11 (2.6)	463 (14.5)	41 (4.0)	466 (5.7)	49 (4.3)	461 (6.1)	r 97 (1.6)
Colombia	34 (3.8)	579 (6.0)	38 (3.8)	580 (5.8)	28 (4.4)	567 (6.6)	r 96 (1.3)
South Africa	21 (2.9)	471 (11.0)	52 (3.8)	457 (7.0)	27 (3.8)	464 (11.3)	r 87 (1.9)

## Exhibit 7.5: Teacher Career Satisfaction

Reported by Teachers

Students were scored according to their teachers' degree of agreement with six statements on the *Teacher Career Satisfaction* scale. Students with **Satisfied** teachers had a score on the scale of at least 10.0, which corresponds to their teachers "agreeing a lot" with three of the six statements and "agreeing a little" with the other three, on average. Students with **Less Than Satisfied** teachers had a score no higher than 6.5, which corresponds to their teachers "disagreeing a little" with three of the six statements and "agreeing a little" with the other three, on average. All other students had **Somewhat Satisfied** teachers.

Country	Satisfied		Somewhat Satisfied		Less Than Satisfied		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	90 (2.6)	449 (4.4)	10 (2.6)	440 (15.6)	0 (0.0)	~ ~	11.6 (0.14)
Indonesia	89 (2.5)	430 (4.4)	11 (2.5)	414 (11.2)	0 (0.0)	~ ~	11.3 (0.13)
Croatia	83 (2.7)	552 (2.1)	16 (2.5)	557 (4.1)	1 (0.9)	~ ~	11.1 (0.10)
Georgia	79 (3.2)	487 (3.7)	20 (3.1)	496 (6.6)	1 (0.7)	~ ~	11.1 (0.13)
Spain	69 (3.6)	519 (3.0)	27 (3.2)	502 (4.0)	4 (1.6)	487 (13.1)	10.8 (0.16)
Ireland	69 (2.9)	551 (2.5)	29 (2.9)	555 (4.7)	2 (0.8)	~ ~	10.8 (0.12)
Denmark	69 (3.2)	556 (2.2)	28 (3.1)	549 (3.3)	3 (1.2)	556 (12.7)	10.7 (0.13)
Israel	67 (4.2)	542 (4.6)	30 (3.9)	546 (7.0)	3 (1.6)	525 (23.3)	10.7 (0.19)
Iran, Islamic Rep. of	66 (3.3)	462 (3.9)	31 (3.5)	448 (5.9)	3 (1.1)	448 (22.1)	10.3 (0.11)
Malta	66 (0.1)	485 (1.8)	30 (0.1)	463 (2.6)	4 (0.0)	467 (9.2)	10.7 (0.01)
Poland	64 (3.0)	525 (2.6)	36 (3.0)	527 (3.8)	1 (0.5)	~ ~	10.5 (0.10)
United Arab Emirates	63 (2.0)	446 (3.7)	31 (2.0)	425 (4.4)	5 (1.1)	429 (10.7)	10.4 (0.08)
Azerbaijan	62 (3.5)	465 (4.2)	37 (3.4)	459 (5.4)	1 (0.5)	~ ~	10.2 (0.10)
Austria	60 (3.5)	530 (2.5)	35 (3.5)	527 (3.3)	5 (1.4)	521 (12.1)	10.4 (0.13)
Russian Federation	60 (3.0)	570 (3.9)	36 (2.9)	566 (3.5)	4 (1.2)	565 (9.5)	10.2 (0.12)
Romania	57 (4.2)	507 (5.9)	42 (4.3)	492 (6.9)	1 (0.6)	~ ~	10.4 (0.14)
Lithuania	56 (3.8)	532 (2.7)	41 (3.7)	524 (3.5)	3 (1.0)	517 (17.2)	10.1 (0.13)
New Zealand	55 (3.3)	534 (3.5)	41 (3.0)	533 (4.0)	5 (1.2)	528 (7.7)	10.1 (0.14)
Northern Ireland	r 54 (4.3)	564 (4.0)	41 (4.5)	555 (4.2)	5 (1.9)	557 (12.6)	10.1 (0.18)
Qatar	54 (5.0)	425 (5.8)	40 (4.7)	428 (8.5)	6 (1.7)	391 (15.1)	10.0 (0.18)
Trinidad and Tobago	54 (4.3)	478 (5.7)	39 (4.2)	463 (6.6)	7 (1.7)	462 (12.0)	9.9 (0.17)
Hungary	53 (3.7)	549 (3.5)	44 (3.6)	528 (5.1)	3 (0.8)	511 (9.4)	10.0 (0.13)
Australia	r 53 (3.9)	536 (3.3)	41 (3.8)	528 (4.8)	6 (1.5)	512 (9.4)	9.9 (0.15)
Slovak Republic	53 (3.2)	532 (4.0)	41 (3.1)	535 (3.1)	6 (1.5)	559 (5.9)	9.7 (0.13)
Oman	53 (3.0)	400 (3.6)	42 (2.9)	384 (4.2)	5 (1.3)	359 (10.8)	9.9 (0.12)
England	52 (4.0)	550 (3.9)	42 (3.7)	550 (5.4)	6 (1.9)	557 (9.8)	9.9 (0.17)
Canada	52 (2.3)	550 (2.1)	43 (2.0)	547 (3.2)	5 (1.0)	540 (4.4)	9.9 (0.09)
Saudi Arabia	51 (3.6)	441 (5.4)	47 (3.7)	421 (7.6)	2 (1.0)	~ ~	10.0 (0.14)
Netherlands	51 (3.6)	546 (2.5)	42 (3.6)	546 (3.6)	7 (2.0)	549 (6.4)	9.9 (0.17)
Germany	50 (3.2)	544 (3.2)	45 (3.2)	538 (3.0)	5 (1.6)	540 (10.1)	9.9 (0.13)
Norway	49 (3.4)	509 (2.1)	43 (3.6)	505 (3.3)	7 (2.7)	508 (6.7)	9.7 (0.17)
Bulgaria	49 (4.3)	535 (5.4)	47 (4.0)	529 (5.8)	4 (1.2)	518 (13.5)	9.8 (0.17)
Czech Republic	48 (3.4)	552 (3.2)	45 (3.9)	539 (3.4)	7 (2.2)	538 (6.6)	9.6 (0.14)
United States	47 (2.6)	559 (2.5)	47 (2.5)	554 (2.8)	6 (0.9)	554 (5.0)	9.6 (0.10)
Slovenia	44 (3.0)	531 (2.6)	53 (3.2)	529 (3.0)	3 (0.9)	535 (11.1)	9.6 (0.08)
Belgium (French)	43 (3.8)	509 (5.3)	46 (3.9)	507 (3.5)	11 (2.5)	507 (6.6)	9.5 (0.20)
Finland	42 (3.1)	570 (2.7)	50 (3.5)	567 (2.5)	8 (2.2)	564 (4.7)	9.4 (0.13)
Italy	39 (3.4)	545 (2.9)	56 (4.0)	541 (3.2)	5 (1.5)	531 (11.8)	9.5 (0.13)
Hong Kong SAR	38 (3.9)	567 (4.0)	50 (3.3)	576 (3.5)	12 (3.4)	560 (9.4)	9.1 (0.17)
Portugal	36 (3.8)	547 (4.2)	59 (4.2)	539 (3.2)	5 (1.8)	527 (8.5)	9.4 (0.18)
Morocco	35 (4.1)	328 (7.4)	51 (4.3)	304 (5.9)	14 (3.0)	291 (12.3)	8.8 (0.20)
Singapore	35 (2.9)	572 (6.0)	54 (2.8)	561 (5.0)	11 (1.8)	578 (9.0)	8.9 (0.11)
Chinese Taipei	31 (3.9)	557 (2.8)	64 (4.0)	551 (2.5)	5 (0.9)	552 (10.3)	8.9 (0.11)
Sweden	29 (3.6)	538 (3.8)	59 (3.8)	543 (2.9)	12 (2.8)	546 (8.2)	9.0 (0.16)
France	25 (3.2)	520 (4.9)	59 (3.7)	521 (3.3)	17 (2.9)	518 (4.5)	8.6 (0.14)
International Avg.	54 (0.5)	516 (0.6)	40 (0.5)	509 (0.8)	5 (0.2)	511 (1.9)	

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students



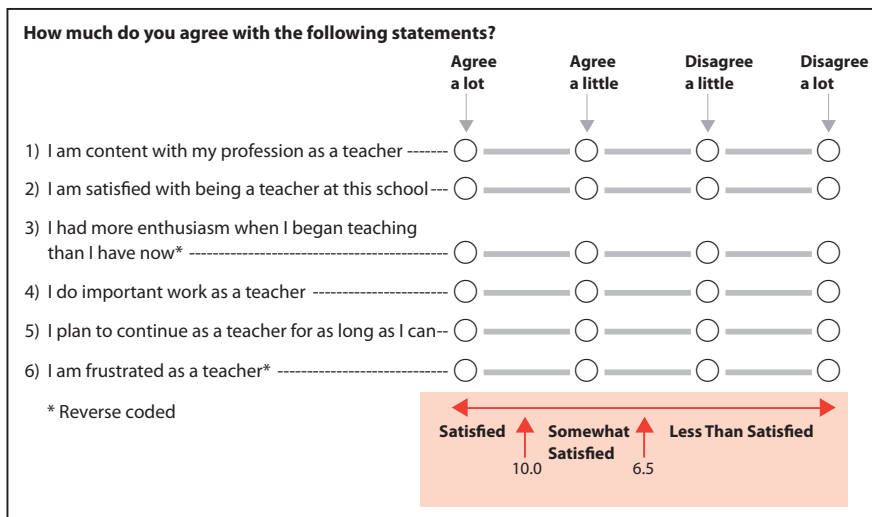
**Exhibit 7.5: Teacher Career Satisfaction (Continued)**

Country	Satisfied		Somewhat Satisfied		Less Than Satisfied		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	95 (1.8)	450 (5.3)	5 (1.8)	441 (21.7)	0 (0.0)	~ ~	12.1 (0.12)
Kuwait	66 (5.0)	425 (9.1)	27 (5.0)	396 (14.5)	6 (1.6)	435 (19.1)	10.3 (0.19)
Morocco	39 (4.5)	428 (8.9)	48 (4.5)	419 (7.8)	13 (2.5)	412 (7.8)	9.0 (0.14)
Botswana	24 (3.3)	425 (9.4)	64 (3.9)	419 (5.7)	12 (2.9)	419 (9.5)	8.6 (0.13)
<b>Benchmarking Participants<sup>◇</sup></b>							
Andalusia, Spain	74 (3.6)	514 (2.8)	23 (3.5)	523 (5.9)	3 (1.5)	493 (11.8)	11.1 (0.17)
Abu Dhabi, UAE	70 (3.8)	429 (6.2)	26 (3.4)	411 (8.7)	4 (1.7)	423 (8.4)	10.7 (0.17)
Maltese - Malta	69 (0.1)	462 (1.7)	29 (0.1)	451 (3.2)	2 (0.0)	~ ~	10.8 (0.01)
Dubai, UAE	64 (2.7)	487 (4.4)	31 (2.9)	459 (6.6)	4 (1.5)	473 (15.6)	10.5 (0.12)
Ontario, Canada	60 (4.1)	549 (3.4)	36 (4.1)	553 (4.2)	4 (1.6)	553 (9.2)	10.2 (0.15)
Florida, US	57 (5.5)	573 (5.9)	36 (5.5)	569 (7.0)	8 (2.5)	554 (10.3)	9.8 (0.20)
Alberta, Canada	52 (3.6)	550 (4.2)	43 (3.5)	547 (4.2)	5 (1.7)	545 (12.1)	10.0 (0.15)
Eng/Afr (5) - RSA	51 (5.0)	436 (13.8)	42 (5.3)	410 (10.7)	7 (2.2)	432 (14.0)	9.7 (0.16)
Quebec, Canada	40 (3.6)	542 (3.7)	50 (4.1)	534 (3.2)	10 (2.8)	536 (4.7)	9.4 (0.15)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

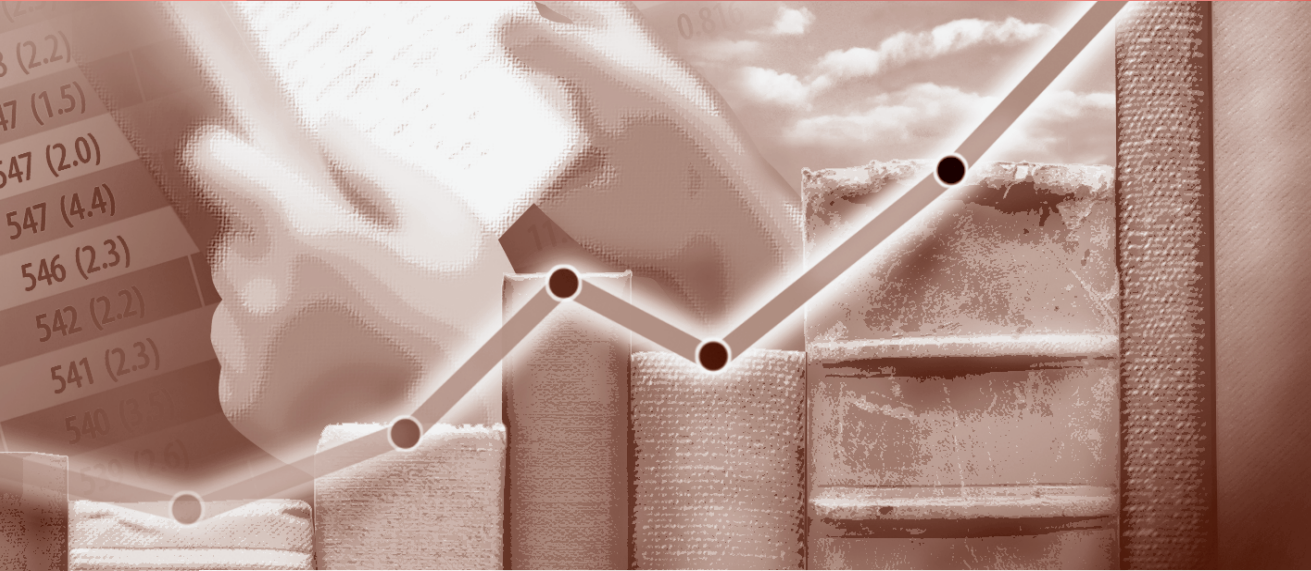
SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Satisfied		Somewhat Satisfied		Less Than Satisfied		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	90 (2.6)	577 (3.4)	10 (2.6)	564 (15.6)	0 (0.0)	~ ~	11.6 (0.14)
South Africa	51 (3.4)	453 (6.1)	44 (3.5)	461 (7.6)	6 (1.6)	523 (21.9)	9.7 (0.11)
Botswana	34 (4.2)	473 (8.9)	55 (4.5)	458 (4.4)	10 (2.8)	458 (10.6)	9.0 (0.16)





# Chapter 8



## Classroom Instruction

Overall, students with positive attitudes toward reading have higher achievement. Internationally, three-fourths are motivated to read, but the majority of students (57%) like reading only to some degree and just one-third were confident readers.

Engaging instruction as well as good nutrition and enough sleep were related to higher achievement. Most fourth grade students (71%) had teachers that used engaging instructional strategies, and nearly all the students reported being engaged (42%) or somewhat engaged (50%) in their reading lessons. Unfortunately, internationally, teachers reported limiting instruction because about one-quarter of the students were suffering from lack of basic nutrition and nearly half from not enough sleep.

This chapter considers the learning environment of the classroom itself, because classroom instruction is at the core of student learning. Previous chapters of this report have described how teaching effectiveness can be greatly influenced by students' home and school environments as well as by the teacher's preparation. However, even though the curricular policies and school resources often set the tone for accomplishment, fourth grade students' day-to-day classroom activities are likely to have a considerable direct impact on their reading development. As described in the *PIRLS 2011 Assessment Framework*, the instructional approaches and materials used in the classroom are clearly important to establishing teaching and learning patterns, including the content to be covered, the strategies employed to teach it, and the availability of books, technology, and other resources. Finally, the behaviors, attitudes, and literacy level of students in the classroom may influence or limit teachers' instruction choices, thereby affecting students' reading development (Nichols et al., 2005).

PIRLS routinely presents very powerful evidence showing that, within countries, fourth grade students with more positive attitudes toward reading have substantially higher reading achievement, and PIRLS 2011 is consistent with previous assessments. In addition to being motivated to learn, students need the opportunity to learn. Thus, this chapter also provides information about the instructional time devoted to reading and the approaches teachers use to engage students in learning. It is difficult to engage students in learning, for example, if they do not have the prerequisite skills or are too sleep deprived or disruptive to pay attention to the teacher. Finally, an effective classroom learning environment for reading includes sufficient materials and equipment, such as access to many books and availability of computers, so children can read a wide variety of material and information.

### Students' Attitudes Toward Reading

Each successive PIRLS assessment has shown a strong positive relationship within countries between student attitudes toward reading and their reading achievement. Additionally, the research literature abounds with evidence about the importance of children spending time reading, enjoying reading, and valuing reading. For example, a recent meta-analysis of 32 studies indicated the relationship between attitudes toward reading and reading achievement was especially strong for elementary school students (Petscher, 2010).

### *Students Like Reading*

Research indicates that positive attitudes and high achievement in reading go hand in hand. That is, students who like reading have higher achievement, but the relationship is bidirectional, with attitudes and achievement mutually influencing each other. Better readers also enjoy reading more than poorer readers.

Independent reading and discussing reading can be an integral part of ongoing activities in the home. For example, the US National Reading Panel (2000) encouraged parents to help their children strike a balance between literacy-related activities and perhaps less enriching pastimes such as playing video games or watching excessive amounts of television. As children are developing reading skills, the time they devote to reading becomes significant. They are practicing their skills and developing habits of lifelong learning—reading for fun and to investigate topics of interest.

Exhibit 8.1 presents the results for the PIRLS 2011 Students Like Reading scale. Students were scored according to the degree of their agreement with six statements such as “I read only if I have to” (reverse coded), “I like talking about what I read with other people,” and “I would like to have more time for reading,” together with how often they read for pleasure out of school (see second page of the exhibit for details). To be in the **Like Reading** category, students “agreed a lot” with three of the six statements, “agreed a little” with the other three, and did out-of-school reading of their own choosing or for fun on a daily basis, on average. In contrast, students who **Do Not Like Reading** “disagreed a little” with three of the statements and “agreed a little” with the other three, on average, and did out-of-school pleasure reading only “once or twice a month.”

For each PIRLS 2011 participant, the percentage of students in each category is shown together with the students’ average reading achievement. The first page of the exhibit presents the results for countries participating at the fourth grade, and the average results across those countries. The second page of the exhibit presents the results for the sixth grade, benchmarking, and prePIRLS participants.

On average, a greater percentage of fourth grade students internationally fell into the **Like Reading** category than into the **Do Not Like Reading** category (28% vs. 15%). However, the majority of fourth grade students were in the category of **Somewhat Like Reading** (57%). On average, internationally, and for nearly every PIRLS 2011 participant, including the sixth grade, benchmarking, and prePIRLS, students who liked reading had higher average reading

## Exhibit 8.1: Students Like Reading

Reported by Students

Students were scored on the *Students Like Reading* scale according to their degree of agreement with six statements and how often they did two reading activities outside of school. Students who **Like Reading** had a score on the scale of at least 11.0, which corresponds to their “agreeing a lot” with three of the six statements and “agreeing a little” with the other three, as well as doing both reading activities outside of school “every day or almost every day,” on average. Students who **Do Not Like Reading** had a score no higher than 8.2, which corresponds to their “disagreeing a little” with three of the six statements and “agreeing a little” with the other three, as well as doing both reading activities only “once or twice a month,” on average. All other students **Somewhat Like Reading**.

Country	Like Reading		Somewhat Like Reading		Do Not Like Reading		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Portugal	46 (1.5)	555 (2.9)	51 (1.4)	529 (3.1)	3 (0.4)	520 (8.1)	10.9 (0.06)
Georgia	42 (1.2)	511 (2.9)	52 (1.2)	475 (3.6)	5 (0.4)	457 (7.0)	10.8 (0.05)
Ireland	37 (1.2)	580 (2.5)	49 (0.9)	543 (3.0)	14 (0.9)	514 (4.9)	10.4 (0.07)
Canada	35 (0.6)	574 (2.1)	51 (0.6)	539 (1.9)	14 (0.5)	520 (2.7)	10.3 (0.03)
Romania	35 (1.3)	536 (4.2)	54 (1.0)	489 (4.8)	12 (1.1)	469 (9.8)	10.4 (0.07)
Iran, Islamic Rep. of	34 (1.3)	487 (3.2)	61 (1.1)	444 (3.2)	4 (0.5)	413 (9.0)	10.5 (0.05)
Malta	34 (0.8)	506 (2.5)	50 (0.8)	466 (2.4)	16 (0.6)	452 (3.9)	10.2 (0.03)
Germany	34 (1.0)	570 (2.9)	50 (1.0)	535 (2.3)	16 (0.7)	514 (3.6)	10.2 (0.04)
Azerbaijan	33 (1.4)	479 (4.1)	61 (1.3)	463 (3.0)	6 (0.6)	436 (8.6)	10.4 (0.05)
Israel	32 (1.3)	565 (3.1)	49 (1.1)	528 (3.4)	18 (1.0)	537 (4.9)	10.1 (0.07)
Indonesia	32 (1.5)	453 (3.9)	66 (1.4)	421 (4.2)	2 (0.3)	~ ~	10.5 (0.05)
France	32 (1.1)	550 (3.0)	56 (1.0)	510 (2.6)	12 (1.0)	488 (3.5)	10.2 (0.06)
New Zealand	32 (0.9)	574 (2.7)	53 (0.8)	515 (2.4)	14 (0.6)	497 (3.6)	10.2 (0.05)
Bulgaria	32 (1.4)	558 (4.1)	52 (1.2)	527 (4.6)	16 (1.0)	504 (6.4)	10.2 (0.07)
Spain	31 (0.9)	537 (3.0)	55 (0.8)	505 (2.5)	14 (0.8)	495 (3.6)	10.2 (0.05)
Austria	31 (0.9)	548 (2.5)	51 (0.9)	525 (2.3)	18 (0.9)	508 (3.2)	10.0 (0.05)
Colombia	31 (1.3)	474 (3.9)	62 (1.3)	438 (4.7)	8 (0.7)	438 (9.0)	10.3 (0.06)
Czech Republic	30 (1.0)	564 (3.2)	53 (1.0)	542 (2.2)	17 (0.9)	524 (3.9)	10.0 (0.05)
Belgium (French)	30 (1.1)	532 (3.2)	56 (1.1)	499 (3.3)	14 (0.8)	482 (4.1)	10.1 (0.05)
Australia	30 (0.9)	565 (2.7)	52 (0.8)	518 (2.8)	19 (0.7)	494 (4.0)	9.9 (0.05)
Northern Ireland	29 (1.3)	590 (3.3)	51 (1.0)	554 (2.7)	20 (0.9)	527 (3.5)	9.9 (0.07)
Trinidad and Tobago	28 (1.2)	508 (4.4)	58 (1.1)	461 (4.3)	14 (0.9)	444 (6.6)	10.1 (0.06)
Slovenia	28 (1.1)	559 (2.4)	55 (1.0)	526 (1.9)	16 (0.9)	498 (5.1)	10.0 (0.06)
Lithuania	27 (1.1)	552 (2.8)	59 (0.9)	522 (2.3)	14 (0.7)	513 (3.5)	10.0 (0.04)
United States	27 (0.6)	586 (2.1)	51 (0.7)	551 (1.7)	22 (0.6)	536 (2.4)	9.7 (0.03)
England	26 (1.1)	589 (3.9)	53 (0.9)	545 (2.9)	20 (1.0)	519 (4.0)	9.8 (0.06)
Saudi Arabia	26 (1.3)	464 (3.6)	65 (1.4)	421 (5.0)	9 (0.8)	400 (10.7)	10.1 (0.05)
Russian Federation	26 (1.0)	587 (3.2)	61 (0.8)	564 (3.0)	13 (0.7)	554 (3.3)	10.0 (0.05)
Hungary	26 (0.9)	574 (3.3)	52 (0.9)	534 (3.0)	22 (1.1)	513 (5.2)	9.8 (0.06)
Finland	26 (1.0)	596 (2.6)	54 (0.9)	568 (2.3)	21 (0.9)	534 (2.2)	9.7 (0.06)
United Arab Emirates	25 (0.6)	493 (3.3)	65 (0.6)	424 (2.2)	10 (0.5)	407 (4.9)	10.0 (0.03)
Slovak Republic	24 (0.9)	560 (3.7)	54 (0.9)	532 (2.7)	21 (0.9)	515 (3.7)	9.7 (0.05)
Poland	24 (0.7)	549 (3.3)	56 (0.8)	526 (2.4)	20 (0.7)	499 (3.1)	9.8 (0.04)
Chinese Taipei	23 (1.0)	585 (2.7)	57 (0.8)	550 (1.9)	20 (1.0)	523 (3.2)	9.7 (0.05)
Italy	23 (1.0)	564 (3.1)	60 (1.0)	538 (2.6)	18 (0.9)	526 (2.8)	9.7 (0.05)
Oman	23 (1.0)	431 (3.4)	69 (0.9)	386 (2.8)	9 (0.4)	334 (7.3)	10.0 (0.05)
Norway	22 (1.0)	533 (3.5)	59 (1.2)	506 (2.3)	19 (1.4)	483 (2.7)	9.7 (0.07)
Singapore	22 (0.8)	610 (3.5)	63 (0.8)	560 (3.4)	15 (0.6)	538 (4.2)	9.8 (0.04)
Hong Kong SAR	21 (1.0)	596 (2.6)	62 (0.8)	568 (2.5)	16 (0.8)	550 (3.2)	9.7 (0.05)
Sweden	21 (0.9)	571 (3.6)	58 (1.3)	541 (2.5)	21 (1.1)	516 (2.5)	9.6 (0.05)
Morocco	21 (1.2)	361 (4.4)	67 (1.5)	304 (4.2)	12 (1.1)	269 (8.9)	9.9 (0.06)
Netherlands	20 (0.7)	569 (2.8)	53 (0.8)	548 (2.0)	27 (0.8)	526 (2.6)	9.4 (0.04)
Denmark	19 (0.8)	583 (2.6)	60 (0.9)	552 (1.9)	21 (0.8)	536 (2.3)	9.5 (0.04)
Croatia	17 (0.8)	572 (3.1)	53 (0.9)	552 (2.1)	29 (1.0)	544 (2.1)	9.3 (0.05)
Qatar	17 (0.7)	487 (5.6)	71 (0.8)	417 (3.6)	12 (0.6)	396 (6.7)	9.7 (0.03)
International Avg.	28 (0.2)	542 (0.5)	57 (0.1)	506 (0.5)	15 (0.1)	488 (0.8)	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

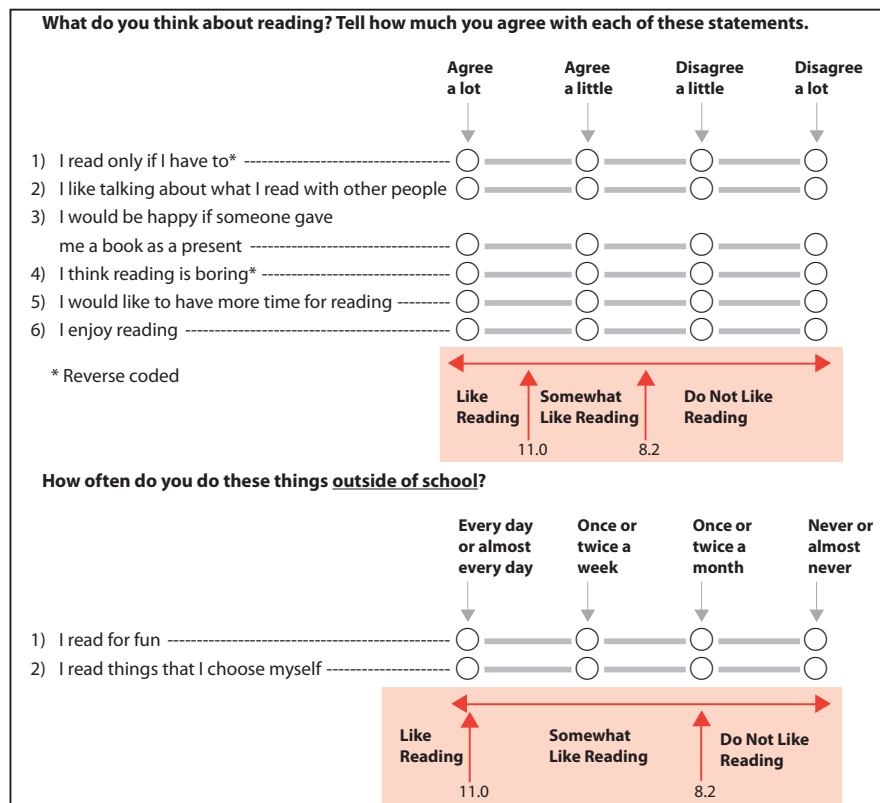
**Exhibit 8.1: Students Like Reading (Continued)**

Country	Like Reading		Somewhat Like Reading		Do Not Like Reading		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Morocco	30 (1.3)	458 (4.8)	62 (1.3)	411 (4.4)	8 (0.6)	396 (8.9)	10.3 (0.06)
Honduras	24 (1.3)	463 (5.2)	67 (1.2)	443 (5.4)	10 (0.9)	469 (9.6)	10.0 (0.06)
Botswana	23 (1.0)	470 (4.8)	70 (0.9)	409 (4.0)	8 (0.6)	365 (9.6)	10.0 (0.04)
Kuwait	21 (1.3)	470 (6.8)	65 (1.2)	413 (5.8)	13 (0.9)	414 (7.7)	9.8 (0.06)
<b>Benchmarking Participants<sup>o</sup></b>							
Ontario, Canada	36 (1.1)	577 (3.8)	49 (1.1)	543 (2.7)	15 (1.0)	523 (4.7)	10.3 (0.06)
Alberta, Canada	35 (1.0)	574 (3.0)	51 (1.0)	539 (3.4)	14 (0.7)	520 (3.7)	10.3 (0.05)
Maltese - Malta	34 (0.8)	483 (2.5)	50 (0.9)	448 (2.1)	16 (0.7)	433 (4.4)	10.2 (0.04)
Quebec, Canada	33 (1.1)	560 (2.9)	54 (1.0)	531 (2.6)	13 (0.8)	511 (2.7)	10.3 (0.05)
Andalusia, Spain	32 (1.4)	537 (2.7)	54 (1.1)	507 (3.0)	14 (1.2)	499 (3.3)	10.2 (0.08)
Dubai, UAE	30 (0.9)	530 (3.3)	60 (0.9)	460 (2.5)	10 (0.5)	431 (5.0)	10.2 (0.04)
Florida, US	27 (1.4)	599 (4.1)	52 (1.2)	564 (3.2)	20 (1.2)	545 (3.4)	9.8 (0.07)
Abu Dhabi, UAE	24 (1.3)	478 (6.3)	64 (1.2)	410 (4.1)	12 (0.9)	397 (8.9)	9.9 (0.05)
Eng/Afr (5) - RSA	22 (1.0)	481 (9.1)	67 (1.1)	405 (7.4)	11 (0.9)	421 (10.6)	9.9 (0.05)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Like Reading		Somewhat Like Reading		Do Not Like Reading		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	31 (1.3)	596 (3.7)	62 (1.3)	569 (3.9)	8 (0.7)	567 (7.8)	10.3 (0.06)
South Africa	16 (0.7)	519 (5.6)	72 (0.8)	459 (3.6)	12 (0.6)	427 (5.1)	9.7 (0.03)
Botswana	10 (0.7)	529 (7.3)	73 (0.9)	463 (3.2)	17 (0.9)	431 (4.8)	9.3 (0.04)



**Exhibit 8.2: Students Motivated to Read**

Reported by Students

Students were scored according to their degree of agreement with six statements on the *Students Motivated to Read* scale. Students **Motivated** to read had a score on the scale of at least 8.7, which corresponds to their “agreeing a lot” with three of the six statements and “agreeing a little” with the other three, on average. Students who were **Not Motivated** had a score no higher than 6.8, which corresponds to their “disagreeing a little” with three of the six statements and “agreeing a little” with the other three, on average. All other students were **Somewhat Motivated** to read.

Country	Motivated		Somewhat Motivated		Not Motivated		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Georgia	92 (0.6)	497 (2.9)	7 (0.6)	442 (8.8)	2 (0.2)	~ ~	11.2 (0.04)
Indonesia	91 (0.8)	436 (3.5)	8 (0.6)	397 (7.5)	1 (0.3)	~ ~	11.0 (0.05)
Trinidad and Tobago	88 (0.9)	478 (3.6)	10 (0.7)	444 (8.0)	3 (0.4)	384 (12.3)	10.9 (0.06)
Colombia	87 (1.1)	457 (4.1)	10 (1.0)	417 (8.8)	3 (0.4)	397 (7.6)	10.9 (0.06)
Azerbaijan	87 (0.9)	474 (2.9)	11 (0.8)	445 (6.6)	2 (0.2)	~ ~	10.9 (0.07)
Iran, Islamic Rep. of	86 (0.6)	462 (2.9)	11 (0.5)	441 (5.3)	3 (0.3)	398 (10.3)	10.7 (0.04)
Bulgaria	85 (1.0)	541 (3.3)	12 (0.7)	512 (6.6)	4 (0.6)	457 (10.3)	10.6 (0.06)
Romania	83 (1.3)	512 (3.8)	13 (0.8)	482 (7.3)	4 (0.9)	401 (13.2)	10.4 (0.08)
Russian Federation	83 (0.7)	571 (2.7)	15 (0.7)	565 (3.8)	2 (0.2)	~ ~	10.3 (0.04)
Portugal	83 (1.1)	544 (2.7)	16 (1.0)	527 (4.3)	1 (0.2)	~ ~	10.5 (0.06)
Saudi Arabia	83 (1.1)	443 (3.7)	14 (0.8)	389 (9.0)	4 (0.6)	340 (15.8)	10.6 (0.07)
Oman	83 (0.6)	403 (2.7)	14 (0.5)	350 (4.6)	4 (0.3)	299 (7.7)	10.6 (0.05)
Malta	82 (0.6)	486 (1.7)	14 (0.5)	453 (4.6)	4 (0.3)	407 (9.2)	10.4 (0.03)
Norway	81 (1.0)	508 (2.3)	16 (0.9)	508 (3.9)	3 (0.4)	487 (14.0)	10.3 (0.05)
United Arab Emirates	80 (0.6)	448 (2.3)	16 (0.5)	416 (3.6)	5 (0.3)	381 (6.3)	10.4 (0.03)
Croatia	80 (0.9)	554 (1.9)	17 (0.8)	554 (3.2)	4 (0.3)	542 (5.4)	10.3 (0.04)
Lithuania	79 (0.8)	531 (2.1)	18 (0.8)	525 (3.9)	3 (0.3)	505 (9.6)	10.1 (0.04)
Spain	77 (0.8)	517 (2.5)	19 (0.8)	506 (3.0)	4 (0.3)	494 (7.6)	10.2 (0.05)
Morocco	77 (1.7)	328 (4.1)	16 (1.1)	268 (5.2)	7 (1.0)	261 (10.9)	10.3 (0.09)
Slovak Republic	76 (0.9)	540 (2.6)	20 (0.8)	528 (3.6)	4 (0.4)	502 (6.4)	9.8 (0.05)
Ireland	75 (1.0)	554 (2.6)	20 (0.9)	551 (4.1)	4 (0.4)	523 (5.6)	10.0 (0.05)
Israel	75 (1.2)	544 (2.5)	19 (0.9)	536 (5.8)	7 (0.6)	540 (7.2)	10.1 (0.06)
Denmark	74 (0.9)	553 (1.9)	23 (0.9)	560 (2.5)	2 (0.2)	~ ~	9.8 (0.04)
Qatar	73 (1.0)	444 (3.7)	21 (0.7)	397 (6.1)	6 (0.4)	361 (9.5)	10.1 (0.05)
New Zealand	72 (0.9)	536 (2.1)	23 (0.9)	533 (3.7)	5 (0.4)	483 (6.6)	9.8 (0.04)
Austria	72 (0.9)	531 (2.1)	23 (0.7)	530 (2.8)	5 (0.4)	508 (5.3)	9.8 (0.04)
Poland	72 (0.8)	530 (2.3)	23 (0.7)	526 (3.2)	6 (0.3)	483 (5.6)	9.9 (0.04)
Canada	72 (0.6)	551 (1.7)	24 (0.6)	549 (2.2)	4 (0.2)	530 (5.2)	9.8 (0.03)
Australia	71 (1.0)	532 (2.7)	23 (0.9)	527 (3.2)	7 (0.5)	493 (5.7)	9.7 (0.05)
United States	71 (0.6)	560 (1.5)	23 (0.5)	557 (2.3)	6 (0.3)	530 (4.5)	9.7 (0.03)
Belgium (French)	70 (1.5)	508 (3.0)	25 (1.2)	506 (3.8)	5 (0.5)	477 (6.2)	9.8 (0.06)
Hungary	69 (1.0)	549 (2.7)	25 (0.9)	529 (4.5)	6 (0.4)	491 (7.9)	9.7 (0.05)
Germany	68 (0.7)	545 (2.6)	28 (0.7)	547 (2.5)	4 (0.4)	517 (6.9)	9.5 (0.04)
France	68 (1.1)	522 (2.9)	27 (0.9)	520 (3.1)	5 (0.5)	498 (5.6)	9.6 (0.05)
Czech Republic	67 (1.3)	549 (2.3)	28 (1.1)	544 (3.2)	5 (0.5)	517 (6.5)	9.5 (0.05)
Slovenia	66 (1.1)	531 (2.1)	29 (1.0)	535 (2.9)	4 (0.4)	503 (7.6)	9.4 (0.04)
Sweden	66 (1.2)	540 (2.2)	30 (1.1)	547 (3.1)	4 (0.5)	529 (7.4)	9.4 (0.04)
Northern Ireland	65 (1.2)	561 (2.7)	29 (1.0)	561 (2.9)	7 (0.6)	533 (5.5)	9.4 (0.05)
Netherlands	65 (1.0)	550 (2.0)	29 (0.9)	545 (2.3)	6 (0.5)	521 (5.8)	9.4 (0.05)
England	65 (1.4)	551 (2.9)	28 (1.2)	559 (3.2)	7 (0.5)	531 (7.8)	9.4 (0.06)
Italy	62 (1.2)	545 (2.4)	33 (1.0)	541 (3.0)	4 (0.4)	515 (5.7)	9.4 (0.04)
Chinese Taipei	62 (1.3)	566 (2.0)	27 (0.9)	542 (2.6)	12 (0.7)	512 (4.0)	9.4 (0.06)
Singapore	60 (0.7)	576 (3.5)	31 (0.6)	562 (3.6)	8 (0.4)	533 (5.6)	9.3 (0.03)
Finland	59 (1.1)	570 (2.2)	34 (1.0)	571 (2.4)	7 (0.6)	543 (4.4)	9.2 (0.05)
Hong Kong SAR	52 (1.0)	577 (2.4)	34 (0.8)	570 (2.8)	15 (0.8)	551 (3.8)	8.9 (0.05)
<b>International Avg.</b>	<b>74 (0.1)</b>	<b>518 (0.4)</b>	<b>21 (0.1)</b>	<b>503 (0.7)</b>	<b>5 (0.1)</b>	<b>474 (1.3)</b>	

Centerpoint of scale set at 10.  
 ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.  
 A tilde (~) indicates insufficient data to report achievement.  
 An “r” indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011



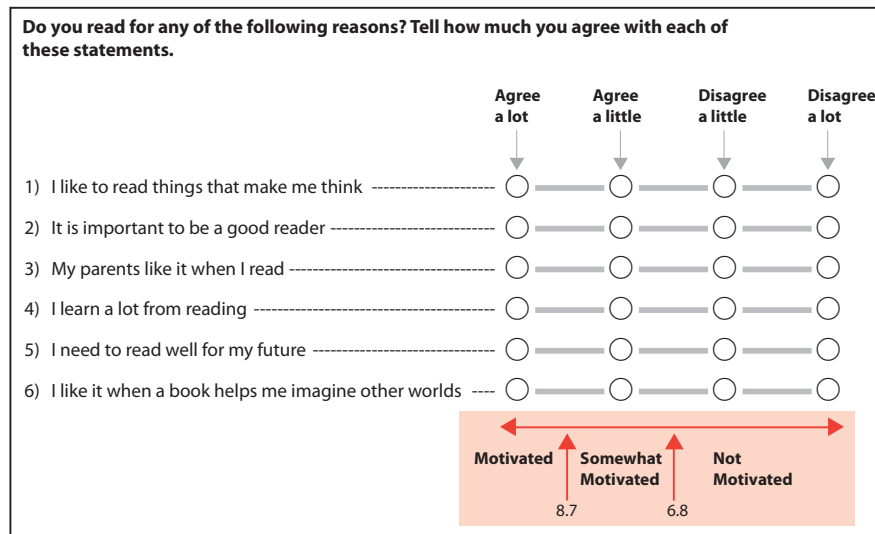
**Exhibit 8.2: Students Motivated to Read (Continued)**

Country	Motivated		Somewhat Motivated		Not Motivated		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	87 (1.0)	452 (4.8)	11 (0.9)	443 (10.1)	2 (0.3)	~ ~	10.9 (0.06)
Morocco	82 (1.2)	433 (4.2)	14 (0.9)	388 (6.5)	5 (0.6)	383 (11.3)	10.5 (0.06)
Kuwait	71 (1.2)	444 (4.6)	23 (1.1)	394 (7.1)	6 (0.5)	371 (14.1)	9.9 (0.06)
Botswana	71 (1.5)	448 (4.2)	21 (1.1)	363 (3.8)	8 (0.6)	327 (5.4)	9.9 (0.07)
<b>Benchmarking Participants<sup>o</sup></b>							
Maltese - Malta	82 (0.7)	466 (1.6)	14 (0.6)	431 (4.1)	4 (0.3)	395 (7.9)	10.4 (0.04)
Dubai, UAE	81 (0.6)	485 (2.1)	15 (0.5)	469 (3.8)	4 (0.3)	410 (8.2)	10.3 (0.04)
Abu Dhabi, UAE	79 (1.1)	435 (4.7)	16 (0.8)	398 (7.2)	5 (0.6)	374 (11.9)	10.3 (0.06)
Eng/Afr (5) - RSA	78 (1.2)	441 (6.8)	17 (1.0)	386 (12.2)	6 (0.6)	349 (15.6)	10.3 (0.07)
Andalusia, Spain	77 (1.0)	519 (2.4)	20 (0.9)	505 (3.8)	3 (0.3)	494 (5.7)	10.4 (0.05)
Alberta, Canada	75 (1.1)	550 (3.1)	21 (1.0)	551 (3.2)	4 (0.3)	519 (6.3)	10.0 (0.05)
Ontario, Canada	75 (1.3)	554 (2.7)	21 (0.9)	551 (3.8)	4 (0.6)	537 (8.8)	9.9 (0.05)
Florida, US	74 (1.1)	573 (2.9)	20 (1.0)	569 (3.7)	5 (0.5)	538 (7.0)	10.0 (0.06)
Quebec, Canada	61 (1.1)	537 (2.3)	34 (1.0)	542 (3.2)	5 (0.5)	526 (5.5)	9.2 (0.05)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Motivated		Somewhat Motivated		Not Motivated		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	87 (1.1)	584 (3.2)	10 (1.0)	551 (9.5)	3 (0.5)	532 (8.5)	10.9 (0.06)
South Africa	68 (1.4)	494 (3.9)	22 (0.9)	432 (4.2)	10 (0.7)	395 (4.3)	9.9 (0.07)
Botswana	48 (1.8)	506 (5.0)	32 (1.0)	432 (2.9)	21 (1.2)	422 (2.8)	8.9 (0.08)



### Exhibit 8.3: Students Confident in Reading

Reported by Students

Students were scored according to their degree of agreement with seven statements on the *Students Confident in Reading* scale. Students **Confident** in reading had a score on the scale of at least 10.6, which corresponds to their “agreeing a lot” with four of the seven statements and “agreeing a little” with the other three, on average. Students who were **Not Confident** had a score no higher than 7.9, which corresponds to their “disagreeing a little” with four of the seven statements and “agreeing a little” with the other three, on average. All other students were **Somewhat Confident** in reading.

Country	Confident		Somewhat Confident		Not Confident		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Israel	49 (1.2)	576 (2.4)	43 (0.9)	517 (3.8)	8 (0.5)	476 (6.7)	10.6 (0.05)
Austria	48 (0.9)	550 (2.3)	44 (1.1)	516 (2.1)	8 (0.5)	479 (3.7)	10.6 (0.04)
Croatia	48 (0.7)	574 (2.1)	43 (0.7)	540 (1.9)	9 (0.5)	506 (4.0)	10.4 (0.03)
Finland	48 (1.2)	590 (2.0)	47 (1.1)	552 (2.3)	5 (0.5)	507 (6.7)	10.5 (0.05)
Bulgaria	47 (1.4)	566 (3.1)	40 (1.1)	516 (4.3)	12 (1.0)	471 (7.6)	10.3 (0.07)
Sweden	47 (0.8)	565 (2.5)	48 (0.9)	527 (2.4)	5 (0.4)	471 (6.1)	10.5 (0.04)
Germany	46 (1.0)	568 (2.2)	45 (1.0)	531 (2.5)	9 (0.5)	489 (4.8)	10.5 (0.05)
Ireland	44 (1.1)	580 (2.1)	49 (1.1)	537 (2.9)	8 (0.6)	490 (5.0)	10.3 (0.05)
Romania	44 (1.2)	544 (3.7)	44 (1.2)	488 (4.2)	12 (1.2)	414 (10.1)	10.3 (0.06)
Poland	44 (0.8)	560 (2.3)	45 (0.8)	513 (2.4)	12 (0.6)	456 (3.9)	10.3 (0.04)
Slovenia	43 (1.0)	561 (2.1)	48 (1.0)	517 (2.4)	10 (0.5)	465 (4.6)	10.4 (0.04)
Canada	41 (0.7)	578 (1.7)	51 (0.6)	536 (1.7)	9 (0.4)	497 (3.1)	10.2 (0.04)
Hungary	41 (1.0)	581 (2.4)	45 (0.8)	524 (3.3)	14 (0.8)	480 (6.3)	10.2 (0.05)
Norway	40 (1.4)	531 (2.6)	53 (1.4)	498 (2.3)	6 (0.5)	447 (5.9)	10.3 (0.05)
United States	40 (0.9)	588 (1.6)	49 (0.7)	545 (1.5)	11 (0.4)	503 (2.4)	10.2 (0.04)
Iran, Islamic Rep. of	39 (1.0)	490 (2.9)	54 (0.9)	442 (3.1)	7 (0.4)	395 (6.5)	10.2 (0.04)
Azerbaijan	39 (1.6)	490 (3.3)	54 (1.6)	461 (3.3)	8 (0.6)	432 (7.6)	10.3 (0.07)
Malta	39 (0.8)	525 (2.2)	48 (0.8)	463 (2.3)	13 (0.6)	392 (4.6)	10.1 (0.04)
Saudi Arabia	39 (1.5)	478 (3.4)	53 (1.4)	406 (5.1)	8 (0.6)	371 (9.8)	10.2 (0.07)
Trinidad and Tobago	38 (1.2)	520 (3.5)	49 (1.0)	456 (4.0)	13 (0.7)	392 (4.6)	10.0 (0.05)
Denmark	38 (0.9)	584 (1.7)	54 (0.8)	543 (1.9)	8 (0.4)	490 (4.4)	10.1 (0.04)
Slovak Republic	37 (0.9)	567 (2.3)	49 (0.9)	525 (3.0)	13 (0.6)	488 (4.0)	10.0 (0.04)
Netherlands	37 (1.0)	565 (2.4)	48 (1.0)	541 (2.1)	15 (0.7)	519 (3.3)	10.0 (0.05)
Australia	37 (0.9)	568 (2.4)	53 (0.8)	515 (2.5)	10 (0.6)	451 (5.4)	10.1 (0.04)
England	37 (1.1)	589 (2.8)	53 (1.2)	539 (3.0)	10 (0.6)	483 (6.0)	10.0 (0.05)
Czech Republic	36 (1.0)	571 (2.9)	51 (1.1)	541 (2.2)	13 (0.6)	495 (3.8)	9.9 (0.04)
Spain	35 (1.0)	542 (2.4)	54 (1.0)	503 (2.7)	10 (0.5)	471 (5.0)	9.9 (0.03)
Northern Ireland	35 (1.0)	591 (3.1)	55 (1.1)	549 (2.8)	10 (0.6)	501 (4.7)	10.0 (0.04)
Indonesia	34 (1.5)	457 (3.2)	62 (1.3)	423 (4.2)	5 (0.5)	368 (10.0)	10.1 (0.06)
United Arab Emirates	33 (0.6)	493 (2.5)	57 (0.6)	422 (2.5)	10 (0.3)	365 (4.7)	9.9 (0.03)
Lithuania	33 (0.9)	563 (2.1)	54 (1.1)	521 (2.1)	13 (0.6)	479 (3.9)	9.8 (0.04)
Portugal	32 (1.4)	572 (2.7)	60 (1.2)	532 (2.7)	8 (0.5)	479 (4.9)	9.9 (0.06)
Qatar	30 (1.1)	495 (4.0)	59 (0.9)	410 (3.6)	11 (0.5)	348 (5.3)	9.7 (0.04)
Belgium (French)	29 (1.0)	536 (3.5)	58 (0.9)	503 (2.6)	12 (0.8)	452 (5.0)	9.7 (0.04)
Oman	29 (1.1)	444 (3.4)	58 (1.0)	382 (3.1)	13 (0.6)	322 (4.4)	9.7 (0.06)
Georgia	28 (0.9)	526 (2.9)	56 (1.0)	483 (3.5)	16 (0.8)	457 (5.1)	9.6 (0.04)
Italy	28 (0.8)	568 (2.8)	63 (0.8)	537 (2.3)	10 (0.6)	505 (3.8)	9.7 (0.03)
Russian Federation	28 (0.8)	601 (3.0)	59 (0.8)	564 (2.8)	14 (0.6)	526 (4.0)	9.6 (0.04)
New Zealand	27 (0.8)	585 (2.9)	61 (0.8)	523 (2.2)	13 (0.6)	471 (4.2)	9.6 (0.04)
France	26 (0.7)	554 (3.0)	60 (0.8)	518 (2.7)	14 (0.7)	469 (3.6)	9.6 (0.04)
Singapore	26 (0.7)	607 (3.3)	61 (0.6)	565 (3.0)	13 (0.6)	504 (5.2)	9.5 (0.03)
Colombia	24 (1.0)	488 (5.1)	65 (1.1)	444 (4.7)	11 (0.8)	415 (5.3)	9.5 (0.05)
Chinese Taipei	21 (0.8)	585 (2.7)	57 (0.8)	554 (1.9)	22 (0.9)	520 (2.8)	9.2 (0.04)
Hong Kong SAR	20 (0.9)	601 (2.4)	62 (0.8)	571 (2.6)	18 (0.9)	538 (3.3)	9.2 (0.05)
Morocco	17 (0.9)	367 (5.0)	64 (1.0)	310 (3.9)	19 (1.2)	273 (7.0)	9.1 (0.05)
International Avg.	36 (0.2)	547 (0.4)	53 (0.1)	502 (0.4)	11 (0.1)	456 (0.8)	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

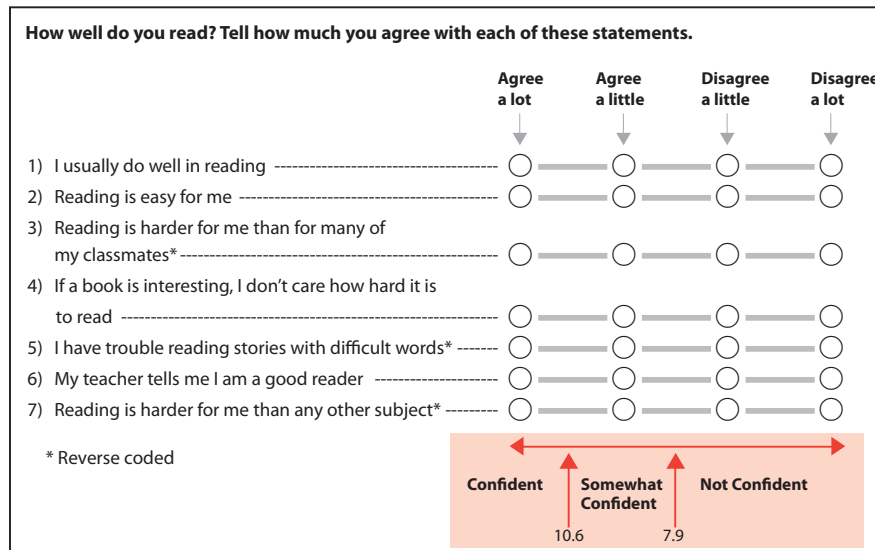
**Exhibit 8.3: Students Confident in Reading (Continued)**

Country	Confident		Somewhat Confident		Not Confident		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Kuwait	35 (1.2)	479 (5.1)	55 (1.2)	407 (5.6)	10 (0.6)	366 (9.2)	10.0 (0.05)
Botswana	21 (1.0)	490 (5.4)	60 (0.9)	414 (3.7)	19 (0.8)	361 (4.7)	9.3 (0.05)
Honduras	18 (1.0)	494 (5.1)	71 (1.0)	444 (5.4)	11 (0.6)	422 (5.3)	9.3 (0.04)
Morocco	18 (0.9)	472 (6.3)	67 (1.0)	420 (3.8)	16 (1.4)	389 (8.5)	9.2 (0.05)
<b>Benchmarking Participants<sup>o</sup></b>							
Alberta, Canada	44 (1.2)	578 (2.7)	48 (0.9)	532 (3.1)	8 (0.6)	490 (6.1)	10.4 (0.05)
Florida, US	43 (1.2)	601 (3.1)	47 (1.2)	554 (3.2)	11 (0.7)	520 (3.8)	10.3 (0.05)
Ontario, Canada	40 (1.4)	583 (3.0)	52 (1.4)	539 (2.7)	8 (0.6)	493 (5.7)	10.2 (0.06)
Dubai, UAE	39 (0.9)	523 (2.3)	53 (0.8)	460 (2.0)	8 (0.5)	390 (6.4)	10.2 (0.04)
Andalusia, Spain	39 (1.1)	539 (2.4)	52 (1.0)	506 (2.5)	9 (0.5)	467 (5.3)	10.1 (0.04)
Quebec, Canada	35 (1.2)	565 (2.5)	55 (1.1)	529 (2.7)	10 (0.6)	494 (4.9)	10.0 (0.04)
Maltese - Malta	32 (0.8)	496 (2.0)	50 (1.0)	451 (2.3)	18 (0.7)	409 (3.6)	9.7 (0.04)
Abu Dhabi, UAE	32 (1.3)	482 (5.0)	57 (1.2)	409 (4.8)	11 (0.7)	354 (7.5)	9.9 (0.06)
Eng/Afr (5) - RSA	26 (1.3)	502 (9.6)	58 (1.1)	412 (7.0)	16 (1.0)	365 (10.9)	9.5 (0.06)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Confident		Somewhat Confident		Not Confident		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	24 (1.0)	611 (3.7)	65 (1.1)	573 (4.0)	11 (0.7)	547 (4.3)	9.5 (0.05)
South Africa	18 (0.7)	548 (4.9)	64 (0.7)	462 (3.8)	18 (0.6)	419 (4.3)	9.1 (0.04)
Botswana	11 (0.8)	554 (7.3)	59 (1.0)	466 (3.2)	30 (1.2)	431 (2.9)	8.7 (0.05)



achievement than those who only somewhat liked reading; and in particular, those students who reported not liking to read had the lowest average reading achievement.

### *Students Motivated to Read*

Because spending time reading is so fundamental to developing reading skills, considerable research has been done on increasing students' motivation to read, in particular focusing on intrinsic and extrinsic motivation. Some students have the disposition to read simply because they like it, but it also is possible for parents and teachers to provide extrinsic motivation in the form of external recognition, rewards, or incentives.

Exhibit 8.2 presents the results for the PIRLS 2011 Students Motivated to Read scale. The scale itself addresses six different motivational facets of reading:

- ◆ I like to read things that make me think;
- ◆ It is important to be a good reader;
- ◆ My parents like it when I read;
- ◆ I learn a lot from reading;
- ◆ I need to read well for my future; and
- ◆ I like it when a book helps me imagine other worlds.

Students “agreeing a lot” with three of the statements and “agreeing a little” with the other three, on average, were considered to be **Motivated** readers. In comparison, students **Not Motivated** to read “disagreed a little” with three of the statements and “agreed a little” with the other three, on average.

Interestingly, on average, internationally, fourth grade students reported greater motivation to read than liking of reading. On average, three-fourths of the students reported being **Motivated** readers whereas only about one-fourth reported liking to read (Exhibit 8.1). Apparently, fourth grade students may understand the value of reading as way of learning, even though they do not choose to read as a leisure activity. There was some variation across countries, but very few fourth grade students, on average, reported a lack of motivation (5%). These students had substantially lower average reading achievement than their more highly motivated counterparts. The overall patterns observed at the fourth grade held for the sixth grade, the benchmarking, and prePIRLS participants.

### *Students Confident in Reading*

Research, including the results from PIRLS assessments, has shown that children with greater self-efficacy or high self-esteem about themselves as readers typically are better readers. Because motivation to learn to read includes feeling that you can succeed, it is important for students to have strong self-concept about their reading ability in order to continue building on current levels of learning to move to higher plateaus (McLaughlin et al., 2005). Because of the growing importance of students' reading self-concept, PIRLS 2011 expanded the scale to cover both intrinsic and extrinsic aspects of reading confidence.

Exhibit 8.3 presents the results for the PIRLS 2011 Students Confident in Reading scale, which includes such statements as “Reading is harder for me than for many of my classmates” (reverse coded) and “My teacher tells me I am a good reader” (see second page of exhibit for all seven statements). **Confident** students “agreed a lot” with four of the seven statements and “agreed a little” with the other three, on average. Students in the **Not Confident** category “disagreed a little” with four of the statements and “agreed a little” with the other three, on average.

Internationally, on average, 36 percent of the fourth grade students expressed confidence in their reading. Average reading achievement was highest for the **Confident** fourth grade students and lowest (by 91 points) for the students lacking confidence (11% across countries). It is clear that students have a sense of themselves as readers by the fourth grade, including knowing when they are struggling. For example, higher than average percentages of students expressed a lack of confidence in their reading in the prePIRLS countries of South Africa (18%) and Botswana (30%).

## *Instructional Time and Approaches*

### *Instructional Time Spent on Language and Reading*

It is difficult to examine the effect of instructional time on student achievement, because a wide variety of factors influence the productivity of instruction hours—most importantly, the quality of the curriculum and instructional approaches (and all of the variables influencing them). In addition, the relationship between instructional time and student achievement is highly dependent on the effectiveness of the educational system. If an education system essentially is ineffective, increasing the amount of instruction time will have diminishing returns. Also, most countries implement levels of instructional

time across their systems so that any variation is unintended and rarely related to achievement.

Despite the difficulties in studying its effects, instructional time remains a crucial resource in considering students' opportunity to learn. If everything else about schooling was equal and of high quality, more instructional time should result in increased student learning. For example, a recent study published by the London School of Economics used data from PISA 2006 and from 10- and 13-year-olds in Israel to compare achievement estimates for the same students across curriculum subjects, and found that instructional time has a positive and significant effect on achievement (Lavy, 2010).

Exhibit 8.4 presents principals' and teachers' reports about the instructional hours per year spent on language and reading instruction. Because reading is the focus, countries in the exhibit are organized according to the last column in the table—instructional hours per year on reading across the curriculum, including the time spent in language class.

The results for the time spent on reading instruction were based on a series of calculations. As explained on the second page of the exhibit, principals provided the number of school days per year and the number of instructional hours per day. This information was combined to show the yearly total number of instructional hours in each country shown in the first column of the exhibit. There was substantial variation across countries, but the fourth grade students in the PIRLS 2011 countries received about 900 hours per year of instruction, on average.

Teachers reported the weekly amount of instruction in language, reading as part of language instruction, and reading across the curriculum. This information was combined with the data provided by principals to estimate yearly amounts of instructional time for each PIRLS 2011 participant for the following:

- ◆ Language instruction;
- ◆ Time spent on reading as part of language instruction; and
- ◆ Time spent on reading, including direct instruction and reading across the curriculum.

It should be emphasized that there was considerable variation across countries including the fourth grade, sixth grade, benchmarking, and prePIRLS participants; countries spend different amounts of time on total schooling, and allocate different amounts of the total time to language and reading instruction.

As an example of the many factors influencing productivity, the United States reported spending 246 hours a year on reading instruction, on average, compared to the 65 hours reported by Chinese Taipei, and the two countries had similar average reading achievement. Finally, it should be understood that providing time for instruction is a necessary but not sufficient condition for student learning. The time allocated for instruction is a resource that needs to be used effectively, and efficiently.

### *Collaborate to Improve Teaching*

Part of creating a school learning environment focused on academic success involves a staff that collaborates on curricular activities. For example, a study including a comprehensive theoretical review and a meta-analysis of studies about professional communities indicated a small but positive effect of professional communities on student achievement (Lomos, Roelande, & Bosker, 2011). Because teacher collaboration with colleagues is important in building a professional community, PIRLS 2011 included the Collaborate to Improve Teaching scale. Although the idea of teacher collegiality and collaboration can involve a variety of theoretical perspectives and terms, the PIRLS 2011 scale was designed to focus on the idea of collaboration for the purpose of improving teaching.

Exhibit 8.5 shows the results for the PIRLS 2011 Collaborate to Improve Teaching scale, based on how often teachers interacted with other teachers regarding each of five areas:

- ◆ Discuss how to teach a particular topic;
- ◆ Collaborate in planning and preparing instructional materials;
- ◆ Share what I have learned about my teaching experiences;
- ◆ Visit another classroom to learn more about teaching; and
- ◆ Work together to try out new ideas.

Students were scored according to their teachers responses, with **Very Collaborative** teachers having interactions with other teachers at least “one to three times per week” in each of three of the five areas and “two or three times per month” in each of the other two, on average.

In general, most reading teachers of fourth grade students reported a high degree of collaboration with other teachers with the goal of improving teaching and learning. Internationally, on average, about one-third (35%) of the fourth grade students had **Very Collaborative** teachers. Another 54 percent

Reported by Principals and Teachers

Country	Instructional Hours per Year			
	Total	Language Instruction	Time Spent on Reading as Part of Language Instruction	Reading Across the Curriculum, Including Time Spent on Reading Instruction
United States	1077 (7.9)	r 275 (8.5)	s 131 (4.9)	r 246 (9.5)
Slovak Republic	780 (8.8)	260 (3.2)	85 (1.8)	239 (10.3)
Portugal	r 939 (13.3)	r 281 (5.4)	r 82 (2.6)	s 235 (17.2)
New Zealand	932 (4.9)	r 349 (8.3)	r 131 (3.9)	r 220 (6.7)
Hungary	760 (12.2)	293 (7.5)	103 (3.7)	206 (8.7)
Australia	1008 (6.9)	s 356 (10.4)	s 119 (5.1)	s 197 (11.0)
Trinidad and Tobago	r 1024 (17.5)	s 295 (18.8)	s 85 (6.6)	s 196 (16.6)
Bulgaria	673 (18.3)	186 (4.6)	56 (1.9)	189 (10.8)
Canada	957 (4.5)	r 284 (6.1)	r 101 (3.0)	r 186 (8.6)
Norway	817 (10.7)	244 (7.6)	r 77 (3.3)	r 178 (11.7)
Romania	796 (17.9)	212 (7.7)	65 (2.8)	161 (9.8)
Ireland	854 (0.0)	175 (3.4)	56 (1.5)	159 (9.3)
Sweden	s 849 (11.4)	s 223 (11.0)	s 75 (3.5)	s 156 (13.1)
Northern Ireland	r 970 (11.0)	s 274 (7.7)	s 80 (3.7)	s 155 (9.9)
Spain	r 888 (10.3)	r 197 (5.2)	r 60 (2.1)	r 152 (10.2)
Saudi Arabia	r 977 (19.4)	r 232 (12.4)	s 86 (6.1)	r 150 (9.4)
Lithuania	649 (9.0)	204 (3.8)	51 (1.5)	147 (8.4)
Czech Republic	782 (8.2)	283 (9.3)	72 (3.5)	146 (9.7)
Qatar	1068 (9.1)	r 199 (10.5)	s 62 (4.6)	r 146 (11.3)
Poland	r 764 (13.5)	r 208 (4.5)	r 61 (2.2)	r 145 (9.8)
Indonesia	r 1297 (39.2)	r 206 (8.1)	s 68 (3.6)	s 145 (8.5)
Iran, Islamic Rep. of	727 (11.2)	186 (6.0)	62 (2.3)	r 145 (15.6)
Oman	s 999 (17.4)	s 176 (4.9)	x x	s 144 (9.5)
Italy	1085 (12.6)	274 (7.2)	r 63 (2.2)	r 137 (6.6)
Russian Federation	r 660 (8.0)	200 (2.4)	58 (1.3)	130 (3.8)
Azerbaijan	804 (27.7)	194 (9.0)	r 62 (3.6)	r 128 (6.0)
Singapore	1012 (0.0)	242 (5.5)	56 (1.8)	127 (6.0)
Georgia	r 748 (18.7)	r 162 (5.5)	r 53 (2.1)	r 123 (8.5)
England	r 987 (7.7)	r 277 (7.6)	r 77 (4.0)	r 123 (9.5)
Belgium (French)	r 938 (8.7)	s 342 (9.7)	s 88 (4.0)	s 120 (7.8)
Slovenia	684 (0.0)	193 (6.2)	46 (1.7)	118 (7.1)
Colombia	r 1063 (18.3)	r 189 (7.9)	r 62 (3.1)	r 117 (7.4)
Croatia	776 (19.4)	172 (4.1)	46 (1.5)	116 (6.8)
Germany	r 863 (11.2)	r 245 (8.5)	r 60 (2.7)	s 111 (6.5)
United Arab Emirates	r 1025 (8.5)	s 194 (7.3)	s 55 (2.6)	s 111 (5.4)
Denmark	860 (8.1)	219 (3.7)	63 (1.8)	108 (5.2)
Malta	r 891 (0.2)	s 181 (0.3)	s 37 (0.1)	s 104 (0.3)
Israel	s 1075 (13.6)	s 234 (7.9)	s 67 (3.6)	s 103 (10.7)
Hong Kong SAR	r 1060 (11.4)	r 207 (5.6)	r 73 (3.1)	r 102 (6.6)
Finland	779 (9.8)	188 (5.3)	55 (2.4)	99 (5.5)
Morocco	r 1040 (25.3)	s 207 (12.3)	s 67 (4.9)	s 99 (7.4)
Austria	808 (6.9)	263 (4.9)	64 (1.8)	97 (4.7)
Chinese Taipei	r 989 (13.4)	192 (5.2)	41 (2.0)	65 (2.8)
France	x x	x x	x x	x x
Netherlands	s 1078 (5.0)	x x	x x	x x
International Avg.	905 (2.1)	232 (1.2)	70 (0.5)	146 (1.4)

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

An "x" indicates data are available for less than 50% of students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011



Country	Instructional Hours per Year			
	Total	Language Instruction	Time Spent on Reading as Part of Language Instruction	Reading Across the Curriculum, Including Time Spent on Reading Instruction
<b>Sixth Grade Participants</b>				
Honduras	r 1024 (16.9)	r 228 (8.3)	r 62 (3.1)	r 157 (11.6)
Botswana	s 1143 (23.2)	s 173 (8.6)	s 40 (2.3)	s 98 (10.2)
Kuwait	x x	x x	x x	x x
Morocco	r 1043 (24.7)	s 225 (12.6)	x x	x x
<b>Benchmarking Participants<sup>o</sup></b>				
Florida, US	r 1068 (19.6)	s 297 (20.7)	s 173 (14.2)	s 248 (17.4)
Ontario, Canada	r 979 (7.2)	r 281 (12.5)	r 103 (5.8)	r 215 (17.4)
Alberta, Canada	r 1011 (8.4)	r 280 (9.1)	r 98 (4.3)	r 193 (10.4)
Andalusia, Spain	r 842 (9.4)	r 220 (4.9)	r 78 (3.0)	r 168 (10.5)
Eng/Afr (5) - RSA	r 1129 (14.7)	s 169 (18.0)	x x	s 131 (16.5)
Quebec, Canada	r 916 (5.1)	r 301 (7.0)	r 99 (3.6)	r 127 (4.4)
Abu Dhabi, UAE	r 1033 (18.1)	s 196 (12.7)	s 55 (4.8)	s 115 (9.8)
Dubai, UAE	r 993 (0.7)	s 183 (6.7)	s 48 (2.3)	s 101 (4.8)
Maltese - Malta	r 891 (0.3)	x x	x x	x x

SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2011

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Instructional Hours per Year			
	Total	Language Instruction	Time Spent on Reading as Part of Language Instruction	Reading Across the Curriculum, Including Time Spent on Reading Instruction
South Africa	r 1184 (15.1)	s 181 (8.4)	x x	s 128 (10.7)
Botswana	s 1042 (20.6)	s 191 (9.0)	s 46 (3.1)	s 121 (8.7)
Colombia	r 1063 (18.2)	r 189 (7.9)	r 62 (3.1)	r 117 (7.4)

<b>Total Instructional Hours per Year</b>	=	Principal Reports of School Days per Year	X	Principal Reports of Instructional Hours per Day
<b>Language Instructional Hours per Year</b>	=	$\frac{\text{Teacher Reports of Weekly Language Instructional Hours}}{\text{Principal Reports of School Days per Week}}$	X	Principal Reports of School Days per Year

Time spent on reading as part of language instruction and hours spent on reading across the curriculum are also based on teacher reports of weekly instruction.

## Exhibit 8.5: Collaborate to Improve Teaching

Reported by Teachers

Students were scored according to their teachers' responses to how often they interacted with other teachers in each of five teaching areas on the *Collaborate to Improve Teaching* scale. Students with **Very Collaborative** teachers had a score on the scale of at least 11.0, which corresponds to their teachers having interactions with other teachers at least "one to three times per week" in each of three of the five areas and "two or three times per month" in each of the other two, on average. Students with **Somewhat Collaborative** teachers had a score no higher than 7.2, which corresponds to their teachers interacting with other teachers "never or almost never" in each of three of the five areas and "two or three times per month" in each of the other two, on average. All other students had **Collaborative** teachers.

Country	Very Collaborative		Collaborative		Somewhat Collaborative		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Slovenia	73 (3.5)	530 (2.4)	25 (3.4)	529 (4.0)	2 (0.8)	~ ~	11.8 (0.14)
Romania	68 (3.8)	498 (5.0)	31 (3.9)	505 (6.7)	1 (0.6)	~ ~	11.4 (0.12)
Israel	61 (3.8)	548 (4.0)	39 (3.8)	534 (5.7)	0 (0.0)	~ ~	11.3 (0.13)
Slovak Republic	50 (3.3)	535 (3.9)	47 (3.4)	537 (3.5)	2 (0.9)	~ ~	10.7 (0.10)
Qatar	50 (4.7)	424 (6.7)	40 (4.4)	427 (8.3)	10 (2.6)	415 (20.3)	10.4 (0.18)
Azerbaijan	48 (3.9)	462 (4.7)	47 (3.9)	467 (4.6)	5 (1.9)	434 (29.5)	10.6 (0.13)
United States	48 (2.9)	556 (2.4)	42 (2.7)	556 (2.9)	10 (1.5)	560 (5.5)	10.5 (0.11)
United Arab Emirates	48 (2.7)	451 (4.2)	48 (2.7)	427 (4.3)	4 (0.8)	434 (11.1)	10.7 (0.08)
England	48 (4.5)	554 (4.3)	44 (4.4)	548 (4.6)	8 (2.6)	548 (11.8)	10.6 (0.19)
Indonesia	47 (4.4)	428 (5.5)	52 (4.5)	428 (6.6)	1 (0.7)	~ ~	11.0 (0.13)
Oman	47 (3.1)	386 (4.3)	53 (3.1)	396 (3.5)	0 (0.2)	~ ~	10.8 (0.07)
Portugal	45 (4.7)	540 (4.3)	50 (4.8)	542 (3.8)	5 (1.4)	540 (6.2)	10.6 (0.17)
Australia	44 (3.7)	532 (4.5)	44 (3.9)	532 (4.6)	12 (2.6)	526 (7.4)	10.3 (0.15)
Hungary	43 (4.0)	538 (5.2)	55 (3.9)	540 (4.3)	2 (0.9)	~ ~	10.5 (0.12)
New Zealand	41 (3.0)	528 (3.7)	53 (3.2)	540 (3.6)	6 (1.5)	514 (16.7)	10.3 (0.10)
Croatia	41 (3.8)	558 (3.2)	57 (3.8)	551 (2.3)	2 (0.9)	~ ~	10.5 (0.11)
Colombia	40 (4.3)	449 (6.8)	50 (4.4)	445 (6.0)	10 (2.6)	457 (14.3)	10.1 (0.19)
Spain	39 (3.8)	518 (4.5)	52 (3.7)	511 (2.9)	9 (1.9)	506 (4.1)	10.0 (0.14)
Lithuania	38 (3.3)	530 (3.4)	57 (3.3)	527 (3.2)	5 (1.5)	528 (7.1)	10.4 (0.11)
Sweden	37 (4.6)	541 (3.7)	52 (4.4)	540 (3.1)	12 (2.9)	556 (6.1)	10.0 (0.22)
Norway	37 (3.8)	509 (3.2)	54 (4.4)	506 (2.5)	10 (2.8)	498 (8.9)	10.1 (0.15)
Georgia	35 (3.3)	489 (5.4)	61 (3.4)	489 (3.6)	3 (1.0)	456 (32.0)	10.3 (0.11)
Poland	32 (3.0)	521 (3.7)	66 (3.1)	529 (2.6)	2 (0.9)	~ ~	10.3 (0.08)
Russian Federation	31 (3.8)	566 (5.3)	67 (4.0)	569 (2.9)	1 (0.8)	~ ~	10.3 (0.08)
Iran, Islamic Rep. of	31 (3.0)	451 (6.2)	60 (2.9)	458 (3.8)	9 (2.0)	472 (11.1)	10.0 (0.14)
Bulgaria	30 (3.7)	543 (6.4)	63 (3.6)	528 (5.1)	8 (1.9)	517 (9.6)	10.0 (0.12)
Trinidad and Tobago	30 (3.8)	467 (8.3)	53 (4.2)	469 (5.3)	18 (3.0)	482 (9.9)	9.6 (0.17)
Singapore	29 (2.0)	569 (6.2)	64 (2.4)	567 (4.3)	8 (1.6)	563 (10.5)	9.9 (0.08)
Italy	29 (3.2)	538 (5.1)	57 (3.0)	544 (2.7)	14 (2.1)	541 (7.0)	9.6 (0.14)
Belgium (French)	29 (4.1)	504 (5.6)	55 (4.2)	506 (4.0)	17 (2.9)	519 (4.3)	9.6 (0.17)
Finland	27 (2.8)	571 (3.9)	58 (2.7)	567 (2.4)	15 (2.0)	566 (3.4)	9.6 (0.13)
Canada	24 (2.1)	546 (2.7)	58 (2.3)	549 (2.7)	17 (1.7)	550 (3.7)	9.5 (0.10)
Germany	24 (2.6)	539 (3.8)	59 (3.4)	540 (2.9)	17 (2.5)	547 (4.8)	9.5 (0.13)
Netherlands	24 (3.4)	542 (4.5)	65 (3.4)	548 (2.4)	11 (2.1)	543 (4.0)	9.6 (0.13)
Hong Kong SAR	23 (4.0)	566 (5.6)	66 (3.9)	570 (3.3)	11 (2.4)	579 (6.2)	9.5 (0.15)
Chinese Taipei	23 (3.5)	558 (3.8)	57 (3.9)	553 (2.4)	20 (3.6)	547 (4.6)	9.4 (0.18)
Austria	21 (3.2)	525 (4.1)	54 (3.8)	529 (2.2)	25 (3.0)	534 (3.6)	9.1 (0.15)
Northern Ireland	21 (4.0)	562 (6.6)	55 (4.9)	559 (3.6)	24 (3.7)	560 (6.5)	9.3 (0.22)
France	20 (3.0)	515 (5.6)	56 (3.4)	524 (3.3)	24 (2.8)	515 (4.7)	9.0 (0.15)
Denmark	18 (2.5)	557 (3.8)	66 (3.2)	554 (2.2)	16 (2.4)	551 (6.1)	9.2 (0.11)
Morocco	17 (2.5)	324 (12.2)	41 (3.9)	311 (6.2)	41 (3.9)	308 (6.5)	8.2 (0.21)
Saudi Arabia	17 (3.2)	440 (10.5)	72 (3.6)	429 (5.0)	11 (2.6)	427 (16.0)	9.4 (0.13)
Malta	16 (0.1)	485 (3.9)	51 (0.1)	481 (1.9)	34 (0.1)	469 (2.8)	8.5 (0.01)
Czech Republic	16 (2.7)	535 (4.0)	72 (3.6)	548 (2.6)	13 (3.1)	543 (4.9)	9.3 (0.15)
Ireland	16 (2.7)	556 (7.0)	60 (3.4)	547 (2.8)	25 (3.1)	562 (4.3)	8.8 (0.15)
International Avg.	35 (0.5)	513 (0.8)	54 (0.5)	512 (0.6)	11 (0.3)	510 (1.9)	

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

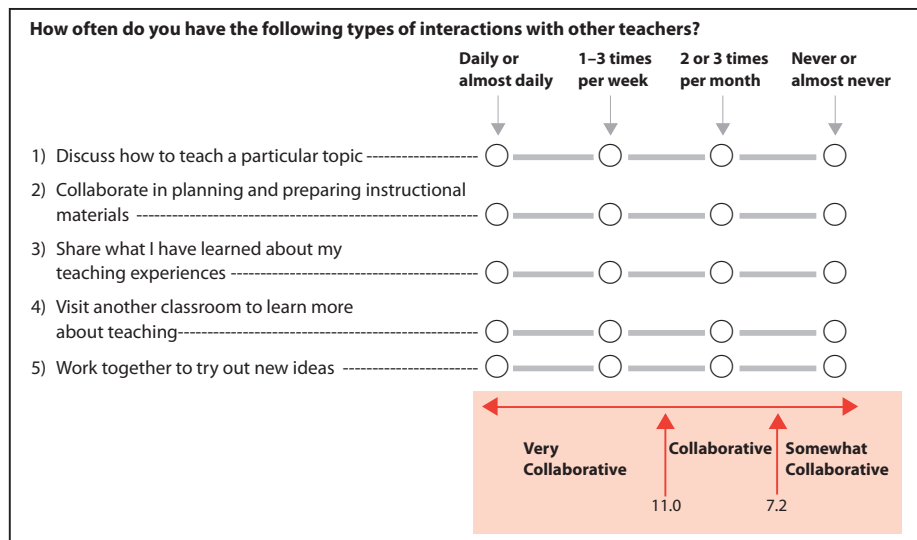
**Exhibit 8.5: Collaborate to Improve Teaching (Continued)**

Country	Very Collaborative		Collaborative		Somewhat Collaborative		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Kuwait	65 (4.6)	421 (7.3)	34 (4.5)	411 (15.1)	1 (0.0)	~ ~	11.4 (0.17)
Botswana	50 (4.0)	411 (4.9)	44 (4.2)	424 (6.9)	5 (1.8)	475 (36.8)	10.8 (0.18)
Honduras	35 (4.8)	441 (13.3)	51 (4.6)	453 (4.8)	14 (2.4)	458 (8.3)	9.8 (0.23)
Morocco	22 (3.9)	437 (15.0)	38 (3.4)	421 (8.0)	40 (4.7)	412 (8.5)	8.4 (0.32)
<b>Benchmarking Participants<sup>o</sup></b>							
Dubai, UAE	59 (4.5)	488 (5.6)	37 (4.4)	465 (9.3)	4 (0.8)	445 (10.9)	10.9 (0.11)
Florida, US	53 (4.2)	572 (5.7)	41 (4.4)	567 (4.7)	6 (2.4)	581 (10.1)	10.7 (0.18)
Abu Dhabi, UAE	47 (4.7)	429 (7.5)	49 (4.5)	420 (8.3)	4 (1.6)	433 (17.8)	10.7 (0.17)
Eng/Afr (5) - RSA	46 (6.2)	431 (15.0)	41 (6.5)	441 (14.1)	12 (4.1)	380 (18.7)	10.1 (0.28)
Andalusia, Spain	39 (3.7)	515 (4.5)	52 (4.2)	517 (3.8)	9 (2.3)	505 (4.7)	10.2 (0.15)
Alberta, Canada	36 (3.7)	548 (5.8)	51 (3.8)	549 (3.6)	12 (2.8)	544 (9.8)	10.0 (0.17)
Ontario, Canada	26 (3.8)	550 (4.8)	59 (4.5)	551 (3.8)	15 (3.0)	552 (6.6)	9.7 (0.18)
Quebec, Canada	21 (4.1)	534 (5.1)	62 (4.6)	537 (2.9)	17 (3.1)	542 (5.7)	9.3 (0.17)
Maltese - Malta	14 (0.1)	447 (2.8)	47 (0.2)	458 (2.6)	38 (0.2)	464 (2.3)	8.1 (0.01)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Very Collaborative		Collaborative		Somewhat Collaborative		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
South Africa	54 (3.7)	453 (6.8)	41 (4.1)	466 (7.5)	5 (1.4)	433 (16.9)	10.9 (0.12)
Botswana	50 (4.2)	469 (5.1)	40 (4.1)	455 (6.4)	10 (2.6)	469 (16.4)	10.9 (0.21)
Colombia	40 (4.3)	577 (6.2)	50 (4.4)	576 (4.5)	10 (2.6)	575 (11.9)	10.1 (0.19)



of students, on average, had teachers that reported being **Collaborative** (e.g., interacting two or three times a month for all areas). Few fourth grade students (11%, on average) had reading teachers that were only **Somewhat Collaborative** (e.g., never or almost never interacting in three of the five areas).

Looking across countries at the fourth grade, sixth grade, benchmarking, and prePIRLS participants, it is clear that there are differences from country to country, but primarily between the percentages of students with **Very Collaborative** and **Collaborative** teachers, although they had very similar achievement, on average (513 and 512, respectively). According to PIRLS 2011 reports from reading teachers, almost all students have the benefit of teachers who collaborate with other teachers to improve instruction.

### *Instruction to Engage Students in Learning*

Historically, educational studies, including PIRLS, have struggled to link student achievement to instructional activities. Typically, teachers are asked to report how frequently they use various instructional activities and strategies, and such information can be very useful. However, in light of the growing body of evidence about the complexities of teaching and learning, researchers are beginning to understand these lists of activities cannot be used as proxies for the characteristics of good teaching.

To help build a better bridge between curriculum and instruction, PIRLS 2011 collected information about the concept of student content engagement as described by McLaughlin et al. (2005). According to this work, supported by the US National Center for Educational Statistics, student content engagement focuses on the importance of the activity that brings the student and the subject matter content together. Engagement refers to the cognitive interaction between the student and instructional content, and may take the form of listening to the teacher, reading aloud, or providing an explanation of a character's motivation. It is the student's in-the-moment cognitive interaction with instructional content.

To measure aspects of student content engagement, PIRLS 2011 developed both a teacher scale, called the Engaging Students in Learning scale, and a student scale, called the Engaged in Reading Lessons scale.

Exhibit 8.6 presents the results for the Engaging Students in Learning scale. The scale contains six items related to teachers' instructional practices intended to interest students and reinforce learning:

- ◆ Summarizing the lesson's learning goals;
- ◆ Relating the lesson to students' daily lives;

- ◆ Questioning to elicit reasons and explanations;
- ◆ Encouraging students to show improvement;
- ◆ Praising students for good effort; and
- ◆ Bringing interesting things to class.

Students were categorized according to their teachers' responses, with **Most Lessons** corresponding to teachers who used three of the six practices in “every or almost every lesson” and the other three in “about half the lessons,” on average.

Many fourth grade students, 71 percent on average, internationally, had reading teachers that made efforts to engage them in instruction by using a variety of strategies in **Most Lessons**; essentially, the rest had teachers that used engaging instructional practices in **About Half the Lessons** (with exceptions in a few countries). Across the fourth grade, sixth grade, benchmarking, and prePIRLS participants, students often had slightly higher average reading achievement if their teachers used engaging instruction in **Most Lessons** rather than **About Half the Lessons**.

Exhibit 8.7 presents the results for the PIRLS 2011 Engaged in Reading Lessons scale that looks at engagement from the student perspective. This scale asks how much students agree with the following seven statements:

- ◆ I like what I read about in school;
- ◆ My teacher gives me interesting things to read;
- ◆ I know what my teacher expects me to do;
- ◆ I think of things not related to the lesson (reverse coded);
- ◆ My teacher is easy to understand;
- ◆ I am interested in what my teacher says; and
- ◆ My teacher gives me interesting things to do.

Students in the **Engaged** category “agreed a lot” with four of the statements and “agreed a little” with the other three, on average, whereas students in the **Not Engaged** category “agreed a little” with three statements and “disagreed a little” with the other four, on average. All other students were considered **Somewhat Engaged**.

Internationally, on average, 42 percent of the fourth grade students reported being **Engaged** during their reading lessons, another 50 percent

## Exhibit 8.6: Instruction to Engage Students in Learning

Reported by Teachers

Students were scored according to their teachers' responses to how often they used each of six instructional practices on the *Engaging Students in Learning* scale. Students with teachers who used engagement practices in **Most Lessons** had a score on the scale of at least 9.1, which corresponds to their teachers using three of the six practices "every or almost every lesson" and using the other three in "about half the lessons," on average. Students with teachers who used engagement practices in **Some Lessons** had a score no higher than 5.9, which corresponds to their teachers using three of the six practices in "some lessons" and using the other three in "about half the lessons," on average. All other students had teachers who used engagement practices in **About Half the Lessons**.

Country	Most Lessons		About Half the Lessons		Some Lessons		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Romania	94 (1.8)	501 (4.4)	6 (1.5)	496 (17.4)	1 (0.0)	~ ~	11.4 (0.15)
Lithuania	93 (1.6)	528 (2.1)	7 (1.6)	529 (8.7)	0 (0.0)	~ ~	11.1 (0.11)
England	91 (2.2)	551 (3.0)	9 (2.2)	548 (11.5)	0 (0.2)	~ ~	10.5 (0.14)
Bulgaria	90 (2.3)	533 (4.4)	10 (2.3)	523 (14.6)	0 (0.0)	~ ~	11.0 (0.14)
Hungary	90 (2.0)	538 (3.3)	10 (2.0)	546 (8.6)	0 (0.0)	~ ~	10.8 (0.12)
Portugal	89 (2.1)	541 (2.9)	10 (2.1)	539 (6.5)	0 (0.0)	~ ~	10.9 (0.13)
Trinidad and Tobago	89 (2.4)	474 (4.2)	10 (2.3)	445 (10.5)	1 (0.0)	~ ~	10.8 (0.14)
United States	88 (1.6)	556 (1.7)	11 (1.5)	560 (6.6)	0 (0.3)	~ ~	10.8 (0.08)
Croatia	87 (2.2)	554 (1.9)	12 (2.2)	548 (5.4)	0 (0.2)	~ ~	10.5 (0.10)
Israel	86 (3.2)	543 (3.7)	14 (3.2)	537 (10.1)	0 (0.0)	~ ~	10.9 (0.17)
Indonesia	85 (3.3)	432 (4.2)	15 (3.3)	411 (11.2)	0 (0.0)	~ ~	10.9 (0.19)
Qatar	84 (3.1)	423 (4.0)	16 (3.1)	428 (16.0)	0 (0.0)	~ ~	10.9 (0.15)
Slovenia	84 (2.8)	530 (2.0)	16 (2.8)	530 (6.1)	0 (0.0)	~ ~	10.5 (0.13)
Slovak Republic	83 (2.6)	535 (3.1)	16 (2.6)	534 (5.7)	0 (0.3)	~ ~	10.5 (0.12)
United Arab Emirates	83 (1.6)	440 (2.8)	16 (1.6)	430 (6.1)	1 (0.5)	~ ~	10.8 (0.08)
Russian Federation	82 (3.0)	569 (2.8)	17 (2.9)	565 (6.7)	1 (0.7)	~ ~	10.7 (0.16)
Malta	81 (0.1)	477 (1.5)	19 (0.1)	479 (3.8)	0 (0.0)	~ ~	10.3 (0.00)
Colombia	80 (3.3)	451 (4.2)	20 (3.3)	432 (11.3)	0 (0.0)	~ ~	10.6 (0.16)
Georgia	78 (2.5)	490 (2.9)	21 (2.5)	480 (9.3)	0 (0.0)	~ ~	10.6 (0.13)
Northern Ireland	r 78 (3.7)	559 (3.1)	21 (3.8)	565 (6.6)	1 (0.6)	~ ~	9.8 (0.13)
Australia	r 77 (3.3)	534 (3.0)	23 (3.3)	523 (4.7)	0 (0.2)	~ ~	10.0 (0.13)
Canada	76 (1.6)	549 (1.7)	23 (1.7)	546 (4.0)	1 (0.5)	~ ~	10.1 (0.09)
Iran, Islamic Rep. of	75 (2.7)	462 (3.8)	24 (2.8)	444 (6.9)	1 (0.4)	~ ~	10.3 (0.13)
Czech Republic	74 (3.6)	547 (2.3)	25 (3.6)	539 (5.7)	1 (0.8)	~ ~	9.8 (0.11)
Poland	74 (3.1)	524 (2.3)	25 (3.1)	531 (4.3)	1 (0.6)	~ ~	10.2 (0.13)
Oman	73 (2.6)	395 (3.2)	26 (2.6)	381 (5.7)	1 (0.4)	~ ~	10.0 (0.10)
Italy	73 (3.1)	539 (2.8)	26 (3.1)	549 (3.8)	1 (0.7)	~ ~	10.1 (0.14)
Singapore	71 (2.4)	569 (4.2)	27 (2.4)	560 (6.3)	2 (0.8)	~ ~	10.0 (0.12)
Azerbaijan	68 (3.4)	466 (3.5)	32 (3.4)	456 (6.8)	0 (0.0)	~ ~	10.0 (0.14)
Ireland	67 (3.2)	552 (2.8)	32 (3.2)	552 (4.6)	1 (0.5)	~ ~	9.8 (0.14)
Spain	66 (3.2)	514 (2.8)	33 (3.0)	513 (4.7)	1 (0.9)	~ ~	9.9 (0.14)
New Zealand	66 (3.0)	537 (2.6)	34 (3.0)	527 (5.0)	0 (0.2)	~ ~	9.6 (0.09)
Morocco	65 (3.6)	319 (4.6)	32 (3.5)	297 (7.9)	3 (1.4)	289 (44.3)	9.7 (0.17)
Saudi Arabia	65 (3.7)	436 (4.6)	34 (3.7)	420 (9.6)	1 (0.7)	~ ~	9.8 (0.13)
Hong Kong SAR	60 (4.6)	567 (3.4)	35 (4.7)	576 (4.5)	5 (1.9)	572 (15.1)	9.5 (0.19)
France	55 (3.6)	523 (2.9)	44 (3.6)	517 (3.5)	1 (0.6)	~ ~	9.4 (0.13)
Netherlands	54 (3.7)	544 (2.3)	45 (3.6)	548 (3.3)	1 (0.6)	~ ~	9.1 (0.11)
Austria	52 (3.5)	527 (2.7)	46 (3.3)	531 (2.7)	3 (1.1)	530 (9.9)	9.0 (0.13)
Belgium (French)	50 (4.0)	508 (4.4)	48 (4.0)	506 (4.2)	3 (1.3)	518 (21.4)	9.0 (0.13)
Sweden	r 47 (4.0)	542 (3.1)	52 (4.1)	544 (3.4)	1 (0.8)	~ ~	8.9 (0.15)
Germany	47 (3.3)	536 (3.1)	50 (3.3)	545 (2.8)	3 (1.2)	559 (6.4)	8.7 (0.11)
Chinese Taipei	39 (4.3)	551 (3.2)	46 (3.8)	556 (2.7)	15 (3.1)	549 (5.5)	8.5 (0.22)
Norway	38 (4.1)	509 (3.9)	59 (4.4)	506 (2.6)	4 (1.9)	493 (11.6)	8.5 (0.13)
Finland	33 (3.2)	570 (2.9)	61 (3.2)	566 (2.3)	6 (1.4)	574 (7.0)	8.3 (0.11)
Denmark	23 (2.7)	557 (3.6)	60 (3.1)	553 (2.3)	17 (2.7)	556 (4.2)	7.7 (0.11)
International Avg.	71 (0.5)	513 (0.5)	27 (0.5)	509 (1.1)	2 (0.1)	~ ~	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

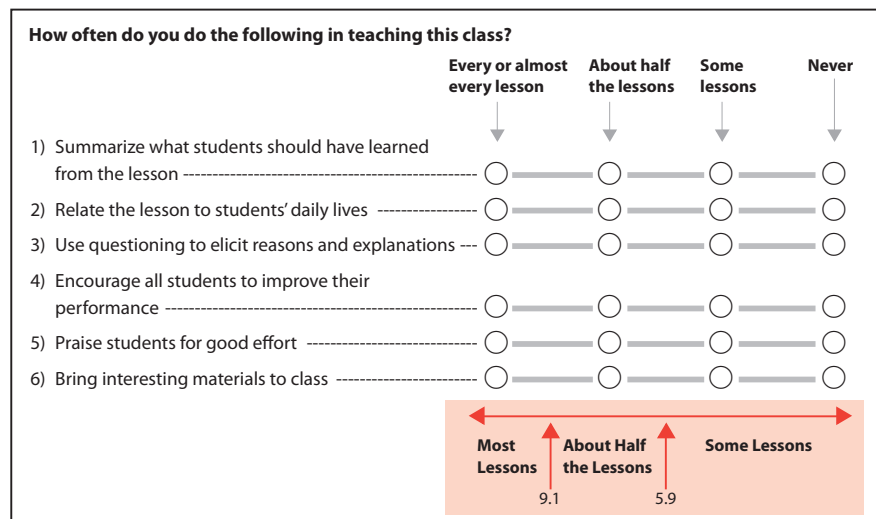
**Exhibit 8.6: Instruction to Engage Students in Learning (Continued)**

Country	Most Lessons		About Half the Lessons		Some Lessons		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	79 (4.1)	455 (5.7)	20 (4.1)	431 (11.2)	1 (1.0)	~ ~	10.3 (0.19)
Kuwait	78 (4.6)	418 (8.2)	22 (4.6)	418 (18.3)	0 (0.0)	~ ~	10.4 (0.22)
Botswana	72 (4.1)	421 (5.8)	28 (4.1)	418 (8.0)	0 (0.0)	~ ~	10.4 (0.17)
Morocco	72 (4.6)	424 (6.0)	26 (4.3)	414 (9.4)	3 (1.4)	436 (28.6)	10.1 (0.21)
<b>Benchmarking Participants<sup>o</sup></b>							
Florida, US	90 (3.6)	569 (4.3)	10 (3.6)	588 (9.9)	0 (0.0)	~ ~	11.1 (0.16)
Dubai, UAE	89 (1.6)	482 (2.9)	11 (1.6)	436 (11.4)	0 (0.0)	~ ~	11.1 (0.13)
Alberta, Canada	85 (2.7)	550 (3.0)	15 (2.7)	536 (7.7)	0 (0.0)	~ ~	10.4 (0.12)
Ontario, Canada	84 (2.5)	552 (2.6)	16 (2.5)	543 (7.7)	0 (0.0)	~ ~	10.4 (0.16)
Maltese - Malta	83 (0.1)	457 (1.7)	17 (0.1)	464 (3.8)	0 (0.0)	~ ~	10.6 (0.01)
Abu Dhabi, UAE	81 (3.2)	424 (5.7)	18 (3.1)	427 (10.4)	1 (0.8)	~ ~	10.9 (0.16)
Andalusia, Spain	72 (3.9)	517 (3.0)	26 (3.8)	508 (4.6)	1 (1.0)	~ ~	10.2 (0.16)
Eng/Afr (5) - RSA	72 (5.0)	423 (9.8)	28 (5.0)	437 (15.7)	0 (0.0)	~ ~	10.3 (0.20)
Quebec, Canada	60 (4.0)	538 (3.1)	39 (4.1)	537 (3.4)	1 (0.6)	~ ~	9.3 (0.13)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Most Lessons		About Half the Lessons		Some Lessons		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
South Africa	80 (2.6)	460 (4.4)	18 (2.4)	457 (12.4)	1 (0.8)	~ ~	10.4 (0.13)
Colombia	80 (3.3)	580 (3.3)	20 (3.3)	559 (10.1)	0 (0.0)	~ ~	10.5 (0.16)
Botswana	61 (4.2)	465 (5.0)	39 (4.1)	458 (6.2)	1 (0.0)	~ ~	9.8 (0.15)



## Exhibit 8.7: Students Engaged in Reading Lessons

Reported by Students

Students were scored according to their degree of agreement with seven statements on the *Engaged in Reading Lessons* scale. Students **Engaged** in reading lessons had a score on the scale of at least 10.5, which corresponds to their “agreeing a lot” with four of the seven statements and “agreeing a little” with the other three, on average. Students who were **Not Engaged** had a score no higher than 7.4, which corresponds to their “disagreeing a little” with four of the seven statements and “agreeing a little” with the other three, on average. All other students were **Somewhat Engaged** in reading lessons.

Country	Engaged		Somewhat Engaged		Not Engaged		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Indonesia	71 (1.1)	440 (3.8)	27 (1.1)	415 (5.3)	2 (0.2)	~ ~	11.3 (0.07)
Georgia	68 (1.1)	500 (2.8)	31 (1.0)	475 (4.4)	2 (0.2)	~ ~	11.1 (0.05)
Azerbaijan	67 (1.3)	474 (3.4)	30 (1.2)	459 (3.0)	2 (0.3)	~ ~	10.9 (0.06)
Romania	65 (1.7)	513 (4.5)	31 (1.4)	491 (5.1)	4 (0.7)	438 (11.8)	11.0 (0.08)
Bulgaria	64 (1.3)	540 (3.9)	32 (1.1)	524 (4.9)	3 (0.4)	498 (9.3)	11.0 (0.06)
Iran, Islamic Rep. of	61 (1.1)	464 (3.2)	35 (1.1)	451 (3.5)	4 (0.4)	417 (9.8)	10.9 (0.06)
Colombia	59 (1.2)	457 (4.7)	38 (1.1)	442 (4.8)	3 (0.3)	428 (9.8)	10.7 (0.05)
Morocco	57 (1.6)	334 (4.5)	38 (1.3)	289 (4.6)	5 (0.7)	255 (10.8)	10.7 (0.09)
Malta	55 (0.8)	490 (2.1)	38 (0.8)	469 (2.7)	7 (0.4)	434 (6.5)	10.6 (0.03)
Portugal	55 (1.7)	550 (2.8)	43 (1.6)	531 (3.4)	2 (0.4)	~ ~	10.6 (0.07)
Russian Federation	53 (1.1)	571 (3.0)	42 (0.9)	567 (3.3)	5 (0.3)	560 (6.6)	10.6 (0.05)
Trinidad and Tobago	51 (1.5)	483 (4.3)	43 (1.4)	463 (4.4)	6 (0.6)	440 (10.4)	10.3 (0.07)
United Arab Emirates	51 (0.7)	453 (2.5)	43 (0.6)	431 (3.1)	6 (0.3)	395 (6.4)	10.4 (0.04)
Hungary	50 (1.2)	551 (3.2)	43 (0.9)	531 (3.5)	7 (0.5)	524 (6.5)	10.4 (0.05)
Poland	46 (1.1)	534 (2.2)	48 (1.0)	522 (2.9)	6 (0.4)	501 (4.6)	10.3 (0.04)
Oman	44 (1.0)	418 (2.8)	50 (0.9)	377 (3.4)	6 (0.4)	325 (6.8)	10.2 (0.05)
United States	43 (0.8)	565 (1.9)	49 (0.6)	554 (1.6)	8 (0.4)	539 (3.1)	10.0 (0.04)
Ireland	43 (1.5)	557 (2.5)	49 (1.2)	550 (3.0)	8 (0.7)	541 (5.6)	10.0 (0.07)
Qatar	43 (1.2)	448 (4.1)	49 (1.0)	418 (4.6)	8 (0.6)	392 (8.6)	10.0 (0.05)
Israel	43 (1.5)	542 (3.1)	45 (1.1)	539 (3.8)	12 (1.0)	552 (4.6)	10.0 (0.08)
Lithuania	41 (1.3)	534 (2.1)	54 (1.2)	529 (2.6)	6 (0.5)	496 (5.0)	10.0 (0.05)
Spain	40 (1.4)	520 (2.8)	52 (1.1)	510 (2.7)	8 (0.7)	507 (6.3)	9.9 (0.06)
Canada	39 (0.9)	558 (1.9)	54 (0.7)	545 (1.9)	7 (0.4)	531 (4.4)	9.9 (0.03)
Belgium (French)	38 (1.4)	508 (3.0)	53 (1.1)	507 (3.4)	9 (0.8)	497 (5.0)	9.8 (0.06)
Northern Ireland	37 (1.4)	561 (3.5)	55 (1.2)	559 (2.9)	8 (0.7)	551 (5.4)	9.8 (0.06)
Slovenia	37 (1.2)	531 (2.2)	57 (1.2)	533 (2.6)	6 (0.6)	513 (6.4)	9.8 (0.05)
Czech Republic	35 (1.4)	544 (2.7)	55 (1.1)	549 (2.4)	10 (0.9)	537 (4.1)	9.7 (0.07)
Croatia	35 (1.3)	553 (2.4)	54 (0.9)	554 (2.1)	11 (1.0)	550 (4.0)	9.7 (0.06)
Germany	35 (1.1)	547 (3.2)	56 (0.9)	545 (2.2)	9 (0.7)	526 (4.7)	9.7 (0.05)
France	35 (1.1)	525 (3.4)	59 (1.1)	521 (2.6)	7 (0.8)	494 (4.5)	9.8 (0.05)
New Zealand	34 (1.1)	534 (3.1)	57 (1.0)	533 (1.8)	9 (0.7)	520 (7.0)	9.7 (0.04)
Italy	34 (1.1)	542 (2.8)	59 (1.0)	545 (2.4)	7 (0.6)	523 (3.8)	9.7 (0.05)
England	34 (1.5)	551 (4.0)	57 (1.2)	554 (2.8)	9 (0.8)	541 (6.1)	9.6 (0.06)
Saudi Arabia	33 (1.4)	438 (4.9)	61 (1.4)	431 (5.0)	6 (0.5)	394 (12.5)	9.6 (0.05)
Australia	33 (1.1)	538 (3.7)	56 (0.9)	526 (2.5)	11 (0.7)	509 (4.4)	9.6 (0.05)
Slovak Republic	32 (1.2)	533 (4.1)	59 (1.0)	539 (2.4)	9 (0.7)	524 (4.3)	9.6 (0.05)
Austria	32 (1.1)	527 (2.9)	55 (1.0)	532 (2.0)	13 (1.0)	525 (3.5)	9.5 (0.05)
Chinese Taipei	31 (1.3)	561 (2.5)	54 (0.9)	555 (2.1)	14 (1.0)	531 (4.6)	9.4 (0.06)
Singapore	31 (0.8)	575 (3.6)	57 (0.7)	568 (3.6)	13 (0.6)	554 (4.4)	9.5 (0.03)
Norway	31 (1.7)	510 (3.2)	59 (1.7)	510 (2.2)	11 (0.9)	490 (5.6)	9.5 (0.07)
Sweden	29 (1.3)	541 (3.1)	63 (1.0)	545 (2.4)	9 (0.8)	528 (4.4)	9.5 (0.05)
Hong Kong SAR	24 (1.0)	578 (2.5)	58 (0.7)	571 (2.5)	18 (1.0)	563 (3.8)	9.1 (0.06)
Netherlands	20 (1.0)	548 (2.9)	65 (0.9)	549 (2.2)	15 (1.1)	532 (2.7)	9.0 (0.06)
Denmark	18 (0.9)	557 (3.2)	68 (0.9)	556 (1.8)	14 (0.7)	544 (2.8)	9.0 (0.04)
Finland	15 (0.8)	568 (3.6)	65 (1.0)	573 (2.1)	20 (1.0)	553 (2.8)	8.7 (0.04)
International Avg.	42 (0.2)	519 (0.5)	50 (0.2)	510 (0.5)	8 (0.1)	494 (1.0)	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Centerpoint of scale set at 10.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.



**Exhibit 8.7: Students Engaged in Reading Lessons (Continued)**

Country	Engaged		Somewhat Engaged		Not Engaged		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>							
Honduras	60 (1.6)	446 (5.2)	37 (1.3)	457 (5.7)	4 (0.6)	454 (16.0)	10.6 (0.07)
Morocco	59 (1.7)	440 (3.7)	37 (1.7)	402 (5.9)	4 (0.6)	398 (11.4)	10.8 (0.07)
Botswana	41 (1.2)	446 (4.4)	51 (1.0)	409 (4.6)	8 (0.6)	362 (6.6)	9.9 (0.05)
Kuwait	39 (1.4)	441 (5.7)	51 (1.4)	422 (5.4)	10 (0.7)	396 (10.9)	9.8 (0.06)
<b>Benchmarking Participants<sup>0</sup></b>							
Maltese - Malta	53 (0.8)	473 (2.2)	38 (0.8)	447 (2.5)	9 (0.5)	418 (5.5)	10.5 (0.04)
Dubai, UAE	52 (1.2)	489 (2.5)	42 (1.2)	472 (3.2)	5 (0.3)	430 (6.3)	10.4 (0.05)
Abu Dhabi, UAE	50 (1.6)	440 (4.9)	43 (1.4)	417 (5.9)	7 (0.7)	384 (10.5)	10.4 (0.08)
Florida, US	47 (1.5)	577 (3.5)	46 (1.4)	567 (3.2)	7 (0.6)	543 (7.7)	10.2 (0.06)
Eng/Afr (5) - RSA	45 (1.4)	440 (6.4)	47 (1.3)	417 (9.3)	7 (0.8)	391 (16.8)	10.0 (0.06)
Alberta, Canada	43 (1.3)	557 (3.4)	51 (1.3)	544 (3.1)	6 (0.5)	531 (5.3)	10.1 (0.05)
Ontario, Canada	42 (1.2)	561 (3.6)	52 (1.2)	548 (2.8)	6 (0.7)	531 (7.2)	10.1 (0.05)
Andalusia, Spain	41 (1.4)	520 (2.7)	50 (1.1)	513 (2.7)	8 (0.7)	507 (5.9)	10.0 (0.07)
Quebec, Canada	30 (1.4)	546 (3.2)	61 (1.3)	537 (2.3)	9 (0.8)	522 (5.3)	9.5 (0.06)

<sup>0</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Engaged		Somewhat Engaged		Not Engaged		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	59 (1.2)	583 (3.7)	38 (1.0)	572 (4.1)	3 (0.3)	565 (8.7)	10.7 (0.05)
South Africa	47 (1.3)	493 (3.9)	45 (1.1)	452 (4.2)	8 (0.5)	409 (4.9)	10.1 (0.07)
Botswana	25 (1.3)	515 (5.4)	58 (1.0)	456 (3.2)	18 (0.9)	424 (3.4)	9.1 (0.07)

**Think about the reading you do for school. How much do you agree with these statements about your reading lessons?**

Agree a lot
Agree a little
Disagree a little
Disagree a lot

1) I like what I read about in school ----- ○ ———— ○ ———— ○ ———— ○

2) My teacher gives me interesting things to read ----- ○ ———— ○ ———— ○ ———— ○

3) I know what my teacher expects me to do ----- ○ ———— ○ ———— ○ ———— ○

4) I think of things not related to the lesson\* ----- ○ ———— ○ ———— ○ ———— ○

5) My teacher is easy to understand ----- ○ ———— ○ ———— ○ ———— ○

6) I am interested in what my teacher says ----- ○ ———— ○ ———— ○ ———— ○

7) My teacher gives me interesting things to do ----- ○ ———— ○ ———— ○ ———— ○

\* Reverse coded

reported being **Somewhat Engaged**, and only 8 percent reported being **Not Engaged**. Across the fourth grade, sixth grade, benchmarking, and prePIRLS participants, there was a positive relationship between students' reports about being more engaged and higher average reading achievement. **Engaged** students had higher achievement than their counterparts that reported being only **Somewhat Engaged**, and students **Not Engaged** had the lowest achievement.

### *Reading Comprehension Skills and Strategies Emphasized in Lessons*

Exhibit 8.8 presents teachers' reports about the reading skills and strategies that they emphasize in their reading instruction on at least a weekly basis. On average, internationally, almost all of the fourth grade students (95–96%) were asked at least weekly to locate information within the text, identify the main ideas of what they have read, and explain or support their understanding of what they have read. Substantially fewer (80–81%) were asked at least weekly to compare what they have read with their own experiences or make generalizations and draw inferences, and even fewer (70–74%) to compare what they have read with other things they have read or make predictions about what will happen next in the text. The skills and strategies of making comparisons, generalizations, inferences, and predictions are important reading comprehension processes in the PIRLS Framework, and have been learned by the fourth grade students in the highest achieving countries (see Chapter 2).

Finally, approximately two-thirds of the fourth grade students (63–66%) were asked regularly to describe the structure of the text or determine the author's perspective or intention. The ability to examine and evaluate text also features prominently in the PIRLS Framework and is fundamental to reading across the curriculum. In general, teachers reported a nearly universal emphasis on retrieving information and identifying main ideas in texts, but the emphasis on more complex reading comprehension strategies varied from country to country. This pattern was reflected in teachers' reports for the sixth grade, benchmarking, and prePIRLS participants. However, as might have been anticipated, compared to the emphases reported at the fourth grade, the entire range of reading comprehension skills and strategies was emphasized for somewhat larger percentages of students at the sixth grade, and for somewhat smaller percentages of fourth grade students participating in prePIRLS.

## Students Ready to Learn

### *Instruction Limited by Students Lacking Prerequisite Knowledge or Skills*

The characteristics of the students themselves can be very important to the classroom atmosphere. To begin, students need the prerequisite reading skills before they can make gains in achievement. Because prior knowledge guides learning, effective reading teachers assess students' language skills and conceptual understanding, and link new ideas, skills, and competencies to prior understandings. Lack of prerequisite knowledge and skills are psychological barriers to learning to read, because it is well known that students' new learning depends on that prior knowledge: "Every new thing that a person learns must be attached to what the person already knows" (McLaughlin et al., 2005, p. 5).

Exhibit 8.9 presents teachers' reports about whether their reading instruction was limited by students lacking prerequisite knowledge or skills. On average, internationally, 28 percent of the fourth grade students were in classes where students had the necessary reading comprehension skills for instruction to proceed according to teachers' plans, and 61 percent were in classes where instruction was limited to some extent. It is consistent with teachers' reports that the students in classes where instruction was progressing unimpeded had higher average reading achievement than did their counterparts in classes where instruction was limited to some extent (526 vs. 512). Also consistent with teachers' reports, average reading achievement was substantially lower (485) for the fourth grade students in classrooms where instruction was limited "a lot" because students lacked the prerequisite knowledge or skills. As would be anticipated, the problem of students lacking prerequisite skills was more pronounced for countries participating at the sixth grade and in prePIRLS.

### *Instruction Limited by Students Suffering from Lack of Nutrition or Sleep*

The importance of a healthy breakfast is widely advertised, including the benefit of doing better in school. Unfortunately, some children in many countries around the world suffer from hunger, and a growing body of research, mostly in developing countries, is providing evidence that malnutrition has a negative impact on educational achievement. Similarly, a number of studies in a variety of countries have shown sleep duration and quality to be related to academic functioning at school. For example, a Dutch researcher found that chronic sleep reduction can affect school achievement directly and indirectly via motivation and engagement (Meijer, 2008).

## Exhibit 8.8: Teachers Develop Students' Reading Comprehension Skills and Strategies

Reported by Teachers

Country	Percent of Students Whose Teachers Ask Them to Do the Following At Least Weekly									
	Locate Information Within the Text	Identify the Main Ideas of What They Have Read	Explain or Support Their Understanding of What They Have Read	Compare What They Have Read with Experiences They Have Had	Compare What They Have Read with Other Things They Have Read	Make Predictions About What Will Happen Next in the Text	Make Generalizations and Draw Inferences	Describe the Style or Structure of the Text	Determine the Author's Perspective or Intention	
Australia	r 96 (1.6)	r 95 (2.2)	r 96 (1.7)	r 87 (2.4)	r 72 (3.7)	r 92 (1.4)	r 92 (1.9)	r 84 (2.8)	r 73 (3.4)	
Austria	87 (2.5)	92 (1.6)	95 (1.2)	64 (3.4)	44 (3.3)	37 (3.0)	56 (3.4)	27 (3.0)	24 (2.6)	
Azerbaijan	99 (0.7)	98 (1.0)	97 (1.0)	93 (1.7)	93 (2.1)	83 (2.8)	90 (1.9)	85 (2.8)	95 (1.2)	
Belgium (French)	86 (3.1)	78 (3.5)	83 (2.9)	29 (3.5)	23 (2.9)	45 (4.8)	45 (4.0)	32 (4.4)	29 (3.3)	
Bulgaria	99 (0.5)	99 (0.5)	99 (0.6)	95 (1.6)	89 (2.3)	87 (2.4)	99 (0.5)	89 (1.9)	93 (1.9)	
Canada	96 (0.9)	94 (1.1)	96 (0.9)	82 (1.7)	72 (1.9)	87 (1.5)	88 (1.5)	57 (2.3)	57 (2.3)	
Chinese Taipei	89 (2.7)	87 (3.0)	73 (3.7)	65 (4.2)	51 (4.4)	47 (4.5)	62 (4.1)	52 (4.4)	66 (3.8)	
Colombia	93 (2.2)	96 (1.7)	93 (2.3)	83 (3.5)	75 (4.0)	74 (3.3)	74 (3.7)	70 (4.2)	71 (3.7)	
Croatia	99 (1.1)	99 (0.7)	97 (1.0)	90 (2.1)	72 (3.1)	62 (3.2)	94 (1.9)	85 (2.6)	83 (2.5)	
Czech Republic	99 (0.8)	97 (1.1)	99 (0.5)	83 (2.9)	47 (3.9)	54 (3.9)	67 (3.8)	32 (3.7)	30 (3.8)	
Denmark	86 (2.0)	86 (2.6)	86 (2.2)	65 (3.1)	51 (3.6)	50 (3.5)	54 (3.4)	41 (3.5)	40 (3.4)	
England	97 (1.4)	97 (1.4)	95 (1.8)	78 (3.3)	74 (3.5)	96 (1.4)	93 (1.9)	82 (3.2)	72 (3.6)	
Finland	86 (2.2)	88 (2.8)	80 (2.8)	67 (3.5)	39 (3.5)	44 (3.4)	66 (3.2)	24 (2.6)	15 (2.1)	
France	97 (1.4)	91 (1.8)	92 (1.8)	39 (3.7)	34 (3.5)	54 (3.1)	55 (3.7)	41 (3.5)	38 (3.9)	
Georgia	98 (0.9)	100 (0.3)	100 (0.0)	99 (0.7)	96 (1.5)	92 (2.0)	98 (1.1)	92 (1.9)	95 (1.6)	
Germany	96 (1.4)	90 (2.2)	95 (1.4)	74 (3.1)	52 (3.5)	53 (3.5)	64 (3.7)	30 (3.3)	31 (3.3)	
Hong Kong SAR	100 (0.0)	96 (1.9)	96 (1.9)	81 (3.6)	70 (3.9)	78 (4.0)	84 (3.3)	77 (4.2)	82 (3.7)	
Hungary	99 (0.5)	99 (0.9)	100 (0.4)	95 (1.5)	91 (1.9)	83 (2.9)	96 (1.3)	74 (3.4)	72 (3.2)	
Indonesia	89 (2.8)	85 (4.3)	95 (1.8)	81 (3.6)	80 (3.5)	71 (4.0)	81 (3.5)	82 (3.3)	62 (4.4)	
Iran, Islamic Rep. of	83 (2.7)	91 (2.1)	84 (2.2)	72 (2.8)	64 (3.2)	61 (3.5)	76 (3.3)	72 (3.8)	64 (3.2)	
Ireland	98 (0.9)	97 (1.1)	96 (1.3)	87 (2.5)	68 (3.6)	91 (2.1)	83 (3.0)	58 (3.7)	52 (4.2)	
Israel	100 (0.0)	100 (0.0)	100 (0.5)	90 (2.5)	83 (3.1)	97 (1.2)	96 (1.7)	98 (1.1)	89 (2.7)	
Italy	100 (0.1)	100 (0.3)	99 (0.6)	88 (2.1)	76 (2.9)	78 (2.7)	69 (3.2)	83 (2.2)	77 (2.7)	
Lithuania	100 (0.0)	100 (0.0)	100 (0.4)	99 (0.5)	96 (1.1)	90 (1.9)	99 (0.6)	91 (1.8)	85 (2.4)	
Malta	99 (0.0)	99 (0.0)	99 (0.0)	81 (0.1)	72 (0.1)	76 (0.1)	69 (0.1)	61 (0.1)	53 (0.1)	
Morocco	96 (2.1)	97 (1.1)	97 (1.2)	70 (4.2)	62 (4.2)	69 (3.7)	81 (3.3)	77 (3.2)	75 (2.9)	
Netherlands	99 (0.9)	88 (3.1)	90 (2.3)	77 (3.8)	57 (4.5)	77 (3.7)	79 (3.0)	48 (3.3)	45 (4.1)	
New Zealand	99 (0.5)	98 (0.7)	97 (0.9)	89 (2.3)	74 (3.0)	94 (1.6)	94 (1.4)	72 (2.4)	72 (2.5)	
Northern Ireland	r 99 (1.1)	r 94 (2.5)	r 98 (1.3)	r 67 (3.8)	r 59 (3.7)	r 84 (3.4)	r 82 (3.4)	r 64 (4.4)	r 50 (4.6)	
Norway	98 (1.4)	90 (2.4)	91 (2.2)	65 (4.4)	49 (4.6)	33 (4.2)	52 (4.9)	29 (4.1)	19 (3.3)	
Oman	93 (1.3)	95 (1.2)	98 (0.8)	89 (1.9)	68 (2.5)	76 (2.5)	78 (2.6)	77 (2.6)	72 (2.7)	
Poland	100 (0.3)	99 (0.7)	97 (1.2)	96 (1.6)	72 (3.2)	75 (3.0)	98 (1.0)	74 (3.5)	81 (2.5)	
Portugal	100 (0.4)	100 (0.4)	100 (0.4)	92 (2.4)	91 (2.2)	89 (2.7)	89 (2.3)	96 (1.5)	92 (2.0)	
Qatar	98 (1.1)	98 (0.9)	98 (0.9)	90 (2.0)	82 (3.9)	89 (2.3)	87 (2.2)	83 (4.0)	71 (5.0)	
Romania	100 (0.2)	100 (0.0)	100 (0.0)	94 (1.8)	92 (2.1)	90 (2.3)	90 (2.3)	85 (2.7)	91 (2.1)	
Russian Federation	100 (0.0)	99 (0.7)	99 (0.6)	92 (2.0)	88 (2.7)	84 (2.6)	98 (0.8)	83 (3.0)	96 (1.3)	
Saudi Arabia	97 (1.5)	98 (1.2)	98 (1.1)	91 (2.4)	79 (3.3)	71 (4.0)	79 (3.4)	79 (3.2)	63 (3.8)	
Singapore	95 (1.2)	95 (1.2)	95 (1.2)	89 (1.8)	81 (2.1)	90 (1.7)	90 (1.7)	78 (2.4)	72 (2.3)	
Slovak Republic	98 (1.0)	99 (0.6)	99 (0.9)	92 (1.9)	79 (2.8)	72 (2.9)	88 (2.2)	64 (3.0)	69 (3.3)	
Slovenia	98 (0.8)	91 (2.9)	98 (1.0)	88 (2.5)	71 (4.0)	55 (3.9)	81 (2.8)	61 (3.7)	42 (3.7)	
Spain	98 (0.9)	97 (1.4)	97 (1.5)	84 (2.4)	74 (2.9)	63 (3.4)	73 (3.2)	58 (3.0)	48 (3.4)	
Sweden	r 96 (1.2)	r 78 (3.5)	r 77 (4.0)	r 56 (4.1)	r 27 (3.3)	r 38 (4.0)	r 53 (4.6)	r 19 (3.3)	r 12 (2.3)	
Trinidad and Tobago	100 (0.0)	100 (0.5)	99 (0.6)	95 (1.5)	84 (3.0)	93 (2.0)	94 (2.0)	65 (4.0)	66 (4.1)	
United Arab Emirates	96 (1.0)	96 (1.0)	99 (0.5)	89 (1.4)	83 (1.7)	87 (1.5)	71 (2.0)	73 (2.6)	74 (2.3)	
United States	r 99 (0.5)	r 99 (0.3)	r 99 (0.3)	r 95 (1.1)	r 90 (1.6)	r 98 (0.9)	r 98 (0.9)	r 81 (2.1)	r 84 (1.8)	
International Avg.	96 (0.2)	95 (0.3)	95 (0.2)	81 (0.4)	70 (0.5)	74 (0.4)	80 (0.4)	66 (0.5)	63 (0.5)	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 8.8: Teachers Develop Students' Reading Comprehension Skills and Strategies (Continued)**

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Percent of Students Whose Teachers Ask Them to Do the Following At Least Weekly								
	Locate Information Within the Text	Identify the Main Ideas of What They Have Read	Explain or Support Their Understanding of What They Have Read	Compare What They Have Read with Experiences They Have Had	Compare What They Have Read with Other Things They Have Read	Make Predictions About What Will Happen Next in the Text	Make Generalizations and Draw Inferences	Describe the Style or Structure of the Text	Determine the Author's Perspective or Intention

**Sixth Grade Participants**

Botswana	92 (2.4)	93 (2.3)	95 (1.9)	87 (2.6)	79 (3.6)	75 (3.4)	69 (4.0)	71 (3.8)	67 (4.7)
Honduras	97 (1.7)	96 (1.5)	98 (0.8)	90 (3.1)	82 (3.7)	80 (3.9)	81 (3.6)	85 (2.7)	74 (4.0)
Kuwait	s 98 (1.2)	s 96 (1.5)	s 95 (2.1)	s 88 (3.8)	s 68 (5.1)	s 75 (3.8)	s 69 (5.7)	s 76 (4.8)	s 76 (5.2)
Morocco	r 97 (1.5)	r 99 (0.8)	r 97 (1.6)	r 79 (3.1)	r 70 (3.8)	r 77 (3.6)	r 86 (2.3)	r 81 (3.6)	r 76 (3.9)

**Benchmarking Participants<sup>o</sup>**

Alberta, Canada	92 (2.4)	94 (1.6)	96 (1.3)	85 (2.9)	71 (3.8)	92 (2.2)	89 (2.4)	51 (3.6)	51 (3.9)
Ontario, Canada	98 (1.1)	97 (1.1)	99 (0.2)	94 (2.2)	86 (3.1)	93 (2.1)	94 (2.2)	71 (3.2)	71 (4.4)
Quebec, Canada	99 (0.5)	89 (2.7)	92 (2.3)	52 (3.6)	37 (4.2)	69 (4.2)	76 (3.9)	48 (4.6)	48 (4.2)
Maltese - Malta	s 98 (0.0)	s 99 (0.0)	s 97 (0.1)	s 78 (0.2)	s 68 (0.2)	s 73 (0.2)	s 63 (0.2)	s 57 (0.2)	s 54 (0.2)
Eng/Afr (5) - RSA	91 (3.1)	r 86 (3.6)	94 (2.4)	86 (3.4)	r 77 (4.4)	r 68 (4.2)	r 65 (5.2)	r 59 (4.3)	r 55 (5.0)
Andalusia, Spain	100 (0.4)	98 (1.3)	97 (1.4)	83 (3.2)	74 (3.6)	66 (3.7)	74 (3.7)	56 (3.5)	48 (3.8)
Abu Dhabi, UAE	94 (1.9)	97 (1.5)	99 (0.7)	86 (2.6)	81 (2.9)	83 (3.1)	69 (4.3)	73 (4.6)	74 (4.2)
Dubai, UAE	r 97 (1.2)	r 95 (1.2)	r 99 (0.4)	r 91 (1.6)	r 83 (2.3)	r 92 (1.3)	r 83 (1.9)	r 74 (3.8)	r 72 (3.8)
Florida, US	s 100 (0.0)	s 99 (0.9)	s 100 (0.0)	s 99 (0.9)	s 95 (1.8)	s 99 (0.9)	s 100 (0.5)	s 92 (2.4)	s 97 (1.8)

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Percent of Students Whose Teachers Ask Them to Do the Following At Least Weekly								
	Locate Information Within the Text	Identify the Main Ideas of What They Have Read	Explain or Support Their Understanding of What They Have Read	Compare What They Have Read with Experiences They Have Had	Compare What They Have Read with Other Things They Have Read	Make Predictions About What Will Happen Next in the Text	Make Generalizations and Draw Inferences	Describe the Style or Structure of the Text	Determine the Author's Perspective or Intention
Botswana	86 (2.9)	89 (2.7)	87 (3.0)	74 (3.5)	72 (4.2)	62 (4.1)	58 (4.2)	54 (4.2)	48 (4.4)
Colombia	93 (2.2)	96 (1.7)	93 (2.3)	83 (3.5)	75 (4.0)	74 (3.3)	74 (3.7)	70 (4.2)	71 (3.7)
South Africa	89 (2.1)	89 (2.3)	96 (1.3)	84 (2.7)	76 (3.2)	79 (3.0)	71 (3.5)	68 (3.2)	55 (3.6)

**Exhibit 8.9: Instruction Limited by Students Lacking Prerequisite Knowledge or Skills**

Reported by Teachers

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Students Lacking Prerequisite Knowledge or Skills					
	Not At All		Some		A Lot	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Netherlands	49 (4.1)	553 (2.4)	44 (4.1)	543 (2.4)	7 (1.7)	524 (10.0)
Norway	47 (4.7)	510 (2.5)	51 (4.7)	506 (3.2)	2 (0.7)	~ ~
Russian Federation	44 (3.7)	575 (4.2)	44 (3.2)	566 (4.2)	12 (2.6)	550 (5.9)
Finland	41 (3.5)	576 (2.3)	57 (3.4)	563 (2.5)	2 (0.6)	~ ~
Denmark	40 (3.4)	561 (2.6)	56 (3.5)	551 (1.9)	4 (1.2)	527 (9.5)
Slovak Republic	39 (3.4)	548 (2.6)	54 (3.4)	531 (3.8)	7 (1.3)	501 (10.8)
Azerbaijan	39 (3.6)	468 (5.7)	59 (3.7)	462 (4.4)	2 (0.8)	~ ~
Georgia	38 (3.5)	492 (5.0)	61 (3.6)	486 (3.7)	2 (0.7)	~ ~
Israel	37 (4.0)	561 (5.3)	50 (4.4)	540 (5.9)	13 (2.9)	503 (10.8)
Ireland	37 (3.1)	567 (3.0)	56 (3.4)	549 (2.8)	8 (1.9)	502 (5.9)
Croatia	35 (3.2)	556 (2.5)	61 (3.4)	552 (2.5)	4 (1.6)	546 (10.3)
Sweden	r 33 (4.2)	549 (3.4)	60 (4.4)	541 (3.0)	7 (1.6)	517 (8.0)
Slovenia	33 (3.9)	542 (3.0)	56 (3.7)	527 (2.4)	11 (2.3)	512 (3.6)
Austria	31 (2.9)	538 (2.7)	54 (2.6)	531 (2.2)	15 (2.6)	500 (3.9)
Australia	r 30 (3.2)	555 (4.6)	60 (4.0)	524 (3.9)	10 (2.4)	501 (7.1)
Spain	29 (3.1)	520 (4.4)	60 (3.1)	515 (2.8)	11 (2.1)	485 (7.1)
Belgium (French)	29 (3.7)	519 (4.3)	53 (3.9)	510 (3.3)	18 (3.4)	479 (8.1)
Czech Republic	28 (3.9)	557 (3.2)	68 (3.7)	543 (2.6)	3 (1.3)	505 (25.3)
Oman	28 (2.9)	400 (4.4)	57 (3.4)	392 (3.8)	15 (2.4)	375 (6.9)
Romania	28 (3.5)	522 (7.3)	67 (3.5)	497 (5.3)	5 (1.4)	434 (27.9)
Hungary	28 (3.1)	564 (5.7)	64 (3.5)	536 (3.9)	9 (2.0)	478 (11.7)
Qatar	27 (3.1)	434 (9.5)	66 (3.5)	428 (5.5)	7 (2.0)	386 (13.7)
United Arab Emirates	27 (2.3)	465 (5.1)	59 (2.6)	433 (3.8)	14 (1.9)	412 (7.9)
Singapore	26 (2.4)	600 (5.4)	61 (3.0)	567 (3.7)	13 (1.8)	504 (8.4)
New Zealand	26 (2.8)	552 (5.0)	64 (3.0)	533 (3.0)	10 (1.4)	492 (7.7)
England	26 (3.8)	564 (6.5)	63 (4.1)	548 (3.7)	11 (2.7)	532 (10.9)
Northern Ireland	r 26 (3.7)	573 (5.4)	68 (3.9)	557 (3.6)	6 (2.1)	541 (9.6)
Italy	25 (2.8)	542 (4.3)	54 (3.6)	541 (3.2)	20 (3.1)	544 (4.8)
Portugal	25 (3.5)	548 (4.3)	65 (3.9)	541 (3.3)	10 (2.1)	525 (7.6)
Saudi Arabia	25 (3.5)	432 (9.7)	63 (4.3)	434 (5.3)	13 (2.9)	405 (17.4)
Hong Kong SAR	22 (4.0)	577 (6.1)	68 (4.1)	573 (2.7)	10 (2.4)	541 (9.6)
Germany	21 (2.9)	557 (4.2)	69 (3.1)	542 (2.7)	10 (1.9)	505 (8.6)
Canada	21 (2.0)	562 (4.3)	65 (2.3)	547 (2.0)	14 (1.6)	529 (3.5)
Poland	20 (2.9)	534 (4.8)	71 (3.4)	525 (2.4)	10 (2.0)	514 (7.0)
Malta	19 (0.1)	503 (3.0)	64 (0.1)	479 (1.9)	17 (0.1)	444 (3.8)
Chinese Taipei	19 (3.1)	562 (4.4)	74 (3.5)	553 (2.1)	7 (2.1)	525 (9.2)
Trinidad and Tobago	19 (3.3)	477 (11.2)	67 (4.1)	474 (4.8)	14 (2.9)	452 (8.7)
Indonesia	18 (4.5)	452 (7.0)	70 (4.7)	425 (5.3)	12 (2.5)	407 (9.3)
Colombia	18 (3.2)	462 (10.7)	60 (4.5)	448 (6.0)	22 (3.7)	437 (7.1)
France	18 (2.4)	537 (4.1)	52 (3.6)	519 (3.8)	30 (3.1)	511 (4.2)
Lithuania	16 (2.0)	544 (4.7)	74 (2.7)	527 (2.3)	10 (2.1)	516 (5.3)
Iran, Islamic Rep. of	16 (2.6)	489 (7.8)	64 (3.7)	457 (4.3)	20 (2.9)	432 (8.5)
Bulgaria	16 (2.7)	561 (8.2)	74 (3.0)	532 (4.3)	11 (2.1)	490 (17.2)
United States	r 14 (1.9)	579 (5.0)	66 (2.1)	558 (2.2)	20 (1.7)	532 (3.6)
Morocco	7 (1.6)	349 (16.7)	56 (3.8)	321 (5.3)	36 (4.4)	288 (6.2)
<b>International Avg.</b>	<b>28 (0.5)</b>	<b>526 (0.9)</b>	<b>61 (0.5)</b>	<b>512 (0.5)</b>	<b>11 (0.3)</b>	<b>485 (1.6)</b>

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Exhibit 8.9: Instruction Limited by Students Lacking Prerequisite Knowledge or Skills (Continued)**

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Students Lacking Prerequisite Knowledge or Skills					
	Not At All		Some		A Lot	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Sixth Grade Participants</b>						
Kuwait	40 (5.0)	412 (12.0)	40 (4.9)	435 (10.0)	19 (4.2)	395 (20.6)
Honduras	20 (3.7)	465 (17.9)	68 (4.1)	441 (5.4)	12 (2.8)	464 (9.3)
Morocco	10 (1.9)	434 (11.5)	53 (4.3)	428 (7.0)	37 (4.3)	410 (6.1)
Botswana	10 (2.5)	487 (19.5)	58 (4.0)	428 (5.2)	32 (3.7)	387 (5.5)
<b>Benchmarking Participants<sup>◇</sup></b>						
Dubai, UAE	33 (3.0)	513 (6.0)	57 (3.0)	463 (4.4)	9 (1.7)	446 (13.9)
Quebec, Canada	27 (3.9)	552 (4.8)	58 (4.9)	534 (2.5)	15 (2.9)	523 (4.0)
Abu Dhabi, UAE	24 (4.1)	443 (8.8)	60 (4.4)	421 (7.3)	15 (3.4)	407 (15.9)
Andalusia, Spain	23 (3.4)	524 (5.2)	63 (3.8)	519 (3.2)	13 (2.7)	480 (6.6)
Maltese - Malta	20 (0.1)	472 (2.9)	69 (0.1)	456 (1.9)	12 (0.1)	449 (4.4)
Alberta, Canada	19 (2.9)	560 (6.4)	63 (3.5)	550 (3.7)	18 (2.6)	528 (6.7)
Ontario, Canada	19 (3.4)	563 (6.4)	64 (4.6)	551 (3.4)	16 (3.5)	529 (6.4)
Eng/Afr (5) - RSA	13 (3.0)	470 (24.8)	64 (4.2)	419 (9.6)	23 (3.9)	413 (15.5)
Florida, US	13 (3.4)	581 (16.8)	60 (5.9)	576 (4.2)	28 (5.0)	556 (7.2)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Students Lacking Prerequisite Knowledge or Skills					
	Not At All		Some		A Lot	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Colombia	18 (3.2)	589 (8.2)	60 (4.5)	576 (4.8)	22 (3.7)	570 (6.9)
South Africa	11 (2.5)	460 (19.6)	63 (3.7)	459 (5.4)	26 (3.5)	466 (7.6)
Botswana	8 (2.2)	509 (28.7)	60 (4.1)	468 (4.6)	32 (4.1)	442 (5.5)

**Exhibit 8.10: Instruction Limited by Students Suffering from Lack of Nutrition or Sleep**

Reported by Teachers

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Students Suffering from Lack of Basic Nutrition				Students in Classrooms Where Teachers Report Instruction Is Limited by Students Suffering from Not Enough Sleep			
	Not At All		Some or A Lot		Not At All		Some or A Lot	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	r 73 (3.0)	544 (2.7)	27 (3.0)	497 (5.6)	r 33 (3.5)	546 (4.5)	67 (3.5)	524 (4.1)
Austria	--	--	--	--	42 (3.3)	536 (2.5)	58 (3.3)	524 (2.3)
Azerbaijan	60 (3.2)	466 (3.8)	40 (3.2)	462 (5.4)	84 (2.9)	465 (3.4)	16 (2.9)	459 (6.0)
Belgium (French)	89 (2.9)	508 (3.0)	11 (2.9)	497 (7.1)	23 (2.8)	510 (6.0)	77 (2.8)	507 (3.1)
Bulgaria	83 (3.0)	541 (3.9)	17 (3.0)	485 (14.8)	69 (4.0)	538 (4.1)	31 (4.0)	517 (9.4)
Canada	67 (2.2)	554 (2.0)	33 (2.2)	537 (2.7)	33 (2.6)	554 (3.4)	67 (2.6)	545 (2.0)
Chinese Taipei	71 (3.7)	555 (2.3)	29 (3.7)	547 (4.3)	40 (4.0)	548 (3.0)	60 (4.0)	556 (2.6)
Colombia	32 (3.8)	469 (9.4)	68 (3.8)	438 (4.5)	46 (4.5)	449 (5.9)	54 (4.5)	447 (6.1)
Croatia	83 (2.8)	553 (2.0)	17 (2.8)	553 (6.1)	44 (3.5)	549 (2.4)	56 (3.5)	557 (2.8)
Czech Republic	99 (0.5)	545 (2.2)	1 (0.5)	~ ~	66 (3.4)	547 (2.7)	34 (3.4)	542 (4.0)
Denmark	88 (2.3)	555 (1.9)	12 (2.3)	549 (4.6)	53 (3.1)	557 (2.6)	47 (3.1)	551 (2.4)
England	77 (2.9)	557 (3.2)	23 (2.9)	529 (5.1)	37 (4.1)	564 (5.1)	63 (4.1)	542 (3.6)
Finland	91 (2.2)	570 (1.8)	9 (2.2)	553 (5.1)	41 (3.9)	573 (2.5)	59 (3.9)	565 (2.5)
France	87 (2.6)	522 (2.5)	13 (2.6)	503 (7.7)	20 (2.5)	530 (4.5)	80 (2.5)	517 (2.9)
Georgia	46 (3.9)	499 (3.5)	54 (3.9)	479 (4.8)	65 (3.8)	485 (3.6)	35 (3.8)	495 (5.6)
Germany	85 (2.6)	546 (2.3)	15 (2.6)	513 (5.9)	50 (3.1)	552 (2.7)	50 (3.1)	531 (3.3)
Hong Kong SAR	89 (2.5)	572 (2.3)	11 (2.5)	558 (8.9)	52 (4.7)	577 (2.7)	48 (4.7)	563 (4.3)
Hungary	76 (3.2)	546 (3.5)	24 (3.2)	514 (6.6)	47 (3.5)	550 (4.1)	53 (3.5)	528 (4.6)
Indonesia	64 (4.6)	436 (4.4)	36 (4.6)	418 (8.2)	75 (4.5)	431 (4.8)	25 (4.5)	425 (9.7)
Iran, Islamic Rep. of	30 (3.6)	483 (5.6)	70 (3.6)	447 (3.9)	41 (3.6)	464 (4.8)	59 (3.6)	453 (4.0)
Ireland	78 (2.9)	558 (2.5)	22 (2.9)	532 (5.0)	38 (3.8)	566 (3.2)	62 (3.8)	544 (2.8)
Israel	86 (2.9)	551 (3.3)	14 (2.9)	493 (7.7)	60 (4.0)	555 (4.1)	40 (4.0)	524 (5.7)
Italy	72 (3.4)	543 (2.7)	28 (3.4)	539 (4.8)	49 (3.9)	545 (3.0)	51 (3.9)	539 (3.4)
Lithuania	81 (2.9)	530 (2.6)	19 (2.9)	521 (4.8)	51 (3.0)	532 (3.0)	49 (3.0)	525 (2.8)
Malta	88 (0.1)	482 (1.5)	12 (0.1)	439 (5.2)	73 (0.1)	482 (1.7)	27 (0.1)	463 (3.1)
Morocco	21 (3.0)	340 (10.5)	79 (3.0)	303 (4.8)	41 (4.1)	315 (7.5)	59 (4.1)	309 (5.6)
Netherlands	87 (2.3)	549 (2.2)	13 (2.3)	527 (4.5)	45 (3.7)	550 (2.6)	55 (3.7)	543 (3.0)
New Zealand	63 (2.6)	546 (2.8)	37 (2.6)	511 (3.8)	31 (2.7)	552 (4.1)	69 (2.7)	525 (3.1)
Northern Ireland	r 80 (3.1)	567 (3.0)	20 (3.1)	535 (7.3)	r 40 (4.7)	573 (3.6)	60 (4.7)	552 (3.8)
Norway	76 (3.9)	509 (2.2)	24 (3.9)	503 (4.2)	60 (4.1)	508 (2.6)	40 (4.1)	506 (3.1)
Oman	50 (3.2)	405 (3.7)	50 (3.2)	380 (4.4)	57 (3.0)	395 (3.2)	43 (3.0)	389 (4.5)
Poland	88 (2.2)	526 (2.4)	12 (2.2)	519 (4.3)	62 (3.1)	527 (2.7)	38 (3.1)	524 (3.2)
Portugal	86 (3.0)	543 (3.0)	14 (3.0)	529 (7.3)	67 (3.8)	544 (3.6)	33 (3.8)	535 (4.2)
Qatar	57 (3.8)	441 (6.2)	43 (3.8)	406 (6.2)	52 (3.5)	425 (7.2)	48 (3.5)	428 (7.3)
Romania	50 (3.6)	522 (5.2)	50 (3.6)	480 (6.6)	62 (3.8)	507 (4.4)	38 (3.8)	491 (8.1)
Russian Federation	83 (2.6)	574 (3.1)	17 (2.6)	544 (5.3)	73 (2.7)	571 (3.3)	27 (2.7)	561 (4.2)
Saudi Arabia	44 (3.9)	437 (6.0)	56 (3.9)	424 (6.5)	32 (3.7)	443 (6.4)	68 (3.7)	424 (5.9)
Singapore	86 (1.8)	573 (3.4)	14 (1.8)	532 (9.8)	60 (2.8)	578 (3.8)	40 (2.8)	551 (6.2)
Slovak Republic	95 (1.1)	537 (2.8)	5 (1.1)	499 (11.3)	80 (2.4)	539 (2.9)	20 (2.4)	520 (7.4)
Slovenia	88 (2.0)	532 (1.9)	12 (2.0)	518 (4.9)	48 (4.5)	534 (2.6)	52 (4.5)	527 (2.6)
Spain	89 (1.8)	516 (2.7)	11 (1.8)	490 (4.8)	64 (3.3)	518 (2.9)	36 (3.3)	504 (3.9)
Sweden	r 96 (1.5)	542 (2.5)	4 (1.5)	548 (11.6)	r 60 (3.7)	548 (2.6)	40 (3.7)	534 (3.6)
Trinidad and Tobago	73 (3.3)	475 (4.9)	27 (3.3)	458 (6.2)	61 (3.7)	474 (5.7)	39 (3.7)	465 (6.3)
United Arab Emirates	62 (2.2)	455 (3.3)	38 (2.2)	412 (4.4)	49 (2.5)	452 (4.0)	51 (2.5)	426 (3.8)
United States	r 60 (2.6)	563 (2.2)	40 (2.6)	544 (3.2)	r 24 (2.2)	566 (3.5)	76 (2.2)	553 (2.1)
International Avg.	73 (0.4)	519 (0.6)	27 (0.4)	495 (1.0)	51 (0.5)	518 (0.6)	49 (0.5)	507 (0.7)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent. A dash (-) indicates comparable data not available. A tilde (~) indicates insufficient data to report achievement. An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.



**Exhibit 8.10: Instruction Limited by Students Suffering from Lack of Nutrition or Sleep (Continued)**

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Students Suffering from Lack of Basic Nutrition				Students in Classrooms Where Teachers Report Instruction Is Limited by Students Suffering from Not Enough Sleep				
	Not At All		Some or A Lot		Not At All		Some or A Lot		
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>									
Botswana	57 (3.7)	440 (6.8)	43 (3.7)	395 (4.8)	39 (4.2)	438 (7.4)	61 (4.2)	408 (5.6)	
Honduras	28 (4.0)	476 (8.9)	72 (4.0)	440 (5.9)	64 (4.3)	454 (6.2)	36 (4.3)	441 (8.6)	
Kuwait	s 64 (4.7)	417 (9.8)	36 (4.7)	418 (10.5)	s 46 (4.8)	419 (9.7)	54 (4.8)	416 (11.2)	
Morocco	r 18 (2.3)	462 (7.9)	82 (2.3)	412 (4.9)	r 41 (4.4)	423 (8.3)	59 (4.4)	420 (6.3)	
<b>Benchmarking Participants<sup>o</sup></b>									
Alberta, Canada	54 (3.7)	562 (4.0)	46 (3.7)	532 (3.5)	24 (3.0)	571 (5.4)	76 (3.0)	541 (3.2)	
Ontario, Canada	69 (4.5)	554 (3.3)	31 (4.5)	545 (5.3)	36 (4.2)	550 (3.7)	64 (4.2)	552 (3.5)	
Quebec, Canada	72 (3.5)	542 (2.5)	28 (3.5)	524 (4.2)	34 (3.6)	546 (3.3)	66 (3.6)	533 (2.4)	
Maltese - Malta	r 88 (0.1)	462 (1.6)	12 (0.1)	431 (5.4)	r 79 (0.1)	462 (1.7)	21 (0.1)	441 (3.4)	
Eng/Afr (5) - RSA	41 (4.8)	456 (14.1)	59 (4.8)	404 (10.8)	41 (5.2)	435 (14.1)	59 (5.2)	418 (10.5)	
Andalusia, Spain	92 (2.3)	516 (2.5)	8 (2.3)	510 (7.7)	69 (4.0)	515 (3.2)	31 (4.0)	514 (3.6)	
Abu Dhabi, UAE	64 (4.1)	437 (6.1)	36 (4.1)	401 (8.8)	46 (4.8)	434 (8.8)	54 (4.8)	415 (6.4)	
Dubai, UAE	70 (2.0)	498 (3.3)	30 (2.0)	428 (6.8)	59 (2.7)	495 (4.5)	41 (2.7)	452 (5.6)	
Florida, US	r 73 (5.1)	577 (4.8)	27 (5.1)	555 (6.0)	r 32 (5.5)	590 (6.7)	68 (5.5)	562 (4.8)	

<sup>o</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Students Suffering from Lack of Basic Nutrition				Students in Classrooms Where Teachers Report Instruction Is Limited by Students Suffering from Not Enough Sleep			
	Not At All		Some or A Lot		Not At All		Some or A Lot	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	58 (3.9)	479 (5.8)	42 (3.9)	440 (4.2)	43 (4.3)	470 (6.7)	57 (4.3)	458 (5.0)
Colombia	32 (3.8)	591 (7.3)	68 (3.8)	569 (4.0)	46 (4.5)	576 (4.8)	54 (4.5)	576 (5.1)
South Africa	36 (3.0)	474 (8.7)	64 (3.0)	454 (5.1)	46 (3.3)	455 (7.0)	54 (3.3)	469 (6.6)

## Exhibit 8.11: Instruction Limited by Disruptive or Uninterested Students

Reported by Teachers

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Disruptive Students				Students in Classrooms Where Teachers Report Instruction Is Limited by Uninterested Students					
	Some or Not At All		A Lot		Some or Not At All		A Lot			
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Australia	r	86 (2.7)	535 (3.2)	14 (2.7)	509 (5.2)	r	95 (1.7)	533 (2.9)	5 (1.7)	503 (11.0)
Austria		91 (2.0)	530 (2.1)	9 (2.0)	516 (6.4)		94 (2.0)	530 (2.0)	6 (2.0)	512 (6.4)
Azerbaijan		99 (0.7)	464 (2.9)	1 (0.7)	~ ~		97 (1.0)	465 (3.0)	3 (1.0)	435 (12.0)
Belgium (French)		80 (3.3)	508 (3.1)	20 (3.3)	506 (5.2)		80 (3.4)	511 (2.7)	20 (3.4)	491 (7.4)
Bulgaria		93 (1.8)	535 (4.1)	7 (1.8)	497 (11.1)		87 (2.5)	538 (3.6)	13 (2.5)	489 (14.7)
Canada		82 (1.9)	551 (1.9)	18 (1.9)	538 (3.2)		94 (0.9)	550 (1.8)	6 (0.9)	528 (4.0)
Chinese Taipei		97 (1.6)	554 (1.9)	3 (1.6)	526 (15.3)		91 (2.3)	554 (1.9)	9 (2.3)	541 (8.1)
Colombia		83 (3.3)	451 (4.8)	17 (3.3)	431 (7.3)		64 (4.4)	450 (5.5)	36 (4.4)	446 (6.2)
Croatia		93 (1.9)	553 (1.9)	7 (1.9)	557 (6.4)		95 (1.4)	554 (1.9)	5 (1.4)	546 (5.8)
Czech Republic		89 (2.5)	547 (2.2)	11 (2.5)	535 (9.2)		95 (1.6)	547 (2.1)	5 (1.6)	516 (18.7)
Denmark		89 (2.0)	555 (1.7)	11 (2.0)	545 (6.6)		91 (2.0)	556 (1.7)	9 (2.0)	542 (7.1)
England		91 (1.8)	553 (2.9)	9 (1.8)	525 (9.3)		97 (1.5)	551 (2.9)	3 (1.5)	539 (9.6)
Finland		89 (2.3)	569 (1.9)	11 (2.3)	559 (3.4)		97 (0.8)	568 (1.8)	3 (0.8)	564 (12.1)
France		69 (3.2)	524 (2.8)	31 (3.2)	512 (5.0)		72 (2.8)	526 (2.5)	28 (2.8)	505 (5.4)
Georgia		98 (1.1)	488 (3.2)	2 (1.1)	~ ~		93 (1.9)	487 (3.4)	7 (1.9)	501 (10.1)
Germany		90 (2.0)	543 (2.6)	10 (2.0)	519 (6.8)		97 (1.0)	541 (2.4)	3 (1.0)	533 (5.9)
Hong Kong SAR		94 (2.0)	572 (2.2)	6 (2.0)	543 (14.3)		92 (2.5)	573 (2.2)	8 (2.5)	547 (10.1)
Hungary		90 (1.9)	542 (3.3)	10 (1.9)	511 (11.7)		94 (1.7)	540 (3.2)	6 (1.7)	521 (12.1)
Indonesia		98 (0.9)	429 (4.3)	2 (0.9)	~ ~		99 (0.5)	429 (4.3)	1 (0.5)	~ ~
Iran, Islamic Rep. of		88 (2.4)	459 (3.1)	12 (2.4)	447 (11.1)		81 (3.2)	463 (3.4)	19 (3.2)	435 (8.1)
Ireland		90 (2.4)	553 (2.2)	10 (2.4)	547 (8.2)		96 (1.5)	552 (2.2)	4 (1.5)	544 (11.5)
Israel		84 (3.4)	546 (3.5)	16 (3.4)	529 (10.9)		90 (2.5)	547 (3.3)	10 (2.5)	509 (16.2)
Italy		78 (3.3)	544 (2.6)	22 (3.3)	534 (5.4)		89 (2.2)	544 (2.2)	11 (2.2)	525 (10.0)
Lithuania		80 (2.5)	528 (2.4)	20 (2.5)	530 (5.5)		84 (2.7)	530 (2.4)	16 (2.7)	521 (7.1)
Malta		84 (0.1)	482 (1.5)	16 (0.1)	456 (4.2)		90 (0.1)	481 (1.5)	10 (0.1)	447 (5.7)
Morocco		85 (3.6)	312 (4.3)	15 (3.6)	303 (9.2)		67 (4.3)	319 (4.9)	33 (4.3)	294 (5.8)
Netherlands		95 (1.7)	547 (2.1)	5 (1.7)	537 (7.5)		98 (1.2)	547 (2.0)	2 (1.2)	~ ~
New Zealand		90 (1.4)	536 (2.7)	10 (1.4)	507 (6.8)		96 (1.0)	534 (2.4)	4 (1.0)	512 (13.7)
Northern Ireland	r	95 (2.1)	560 (2.9)	5 (2.1)	554 (10.5)	r	97 (1.6)	561 (2.7)	3 (1.6)	535 (8.3)
Norway		91 (2.6)	508 (2.2)	9 (2.6)	501 (7.8)		97 (1.5)	507 (2.1)	3 (1.5)	514 (15.7)
Oman		81 (2.6)	397 (3.0)	19 (2.6)	368 (5.5)		80 (2.6)	395 (3.0)	20 (2.6)	378 (5.8)
Poland		85 (2.6)	526 (2.4)	15 (2.6)	524 (5.8)		93 (1.7)	526 (2.2)	7 (1.7)	518 (7.5)
Portugal		88 (2.3)	541 (2.9)	12 (2.3)	542 (7.9)		85 (2.9)	541 (3.1)	15 (2.9)	539 (7.5)
Qatar		84 (2.6)	432 (4.3)	16 (2.6)	385 (10.2)		86 (2.9)	430 (4.0)	14 (2.9)	390 (8.2)
Romania		98 (0.8)	501 (4.4)	2 (0.8)	~ ~		93 (2.0)	504 (4.5)	7 (2.0)	455 (16.0)
Russian Federation		94 (1.8)	569 (3.0)	6 (1.8)	556 (8.3)		95 (1.8)	570 (2.7)	5 (1.8)	547 (10.7)
Saudi Arabia		90 (2.6)	431 (4.5)	10 (2.6)	418 (20.1)		80 (3.6)	434 (4.9)	20 (3.6)	415 (13.2)
Singapore		89 (1.9)	571 (3.5)	11 (1.9)	541 (11.0)		91 (1.8)	570 (3.4)	9 (1.8)	538 (12.2)
Slovak Republic		95 (1.2)	536 (2.9)	5 (1.2)	511 (10.4)		93 (1.7)	537 (2.5)	7 (1.7)	501 (11.7)
Slovenia		66 (3.6)	533 (2.2)	34 (3.6)	525 (3.2)		84 (2.4)	531 (2.2)	16 (2.4)	526 (4.3)
Spain		88 (2.6)	517 (2.7)	12 (2.6)	488 (6.9)		81 (2.6)	519 (2.4)	19 (2.6)	487 (5.5)
Sweden	r	94 (1.7)	544 (2.4)	6 (1.7)	518 (7.4)	r	98 (1.0)	542 (2.3)	2 (1.0)	~ ~
Trinidad and Tobago		88 (2.4)	473 (3.9)	12 (2.4)	457 (10.6)		97 (1.3)	472 (4.0)	3 (1.3)	422 (14.7)
United Arab Emirates		88 (1.2)	443 (2.6)	12 (1.2)	412 (6.9)		89 (1.7)	443 (2.7)	11 (1.7)	402 (8.0)
United States		84 (1.6)	560 (1.9)	16 (1.6)	535 (3.6)	r	89 (1.5)	558 (1.8)	11 (1.5)	539 (6.7)
<b>International Avg.</b>		<b>88 (0.3)</b>	<b>514 (0.4)</b>	<b>12 (0.3)</b>	<b>501 (1.4)</b>		<b>90 (0.3)</b>	<b>515 (0.4)</b>	<b>10 (0.3)</b>	<b>494 (1.6)</b>

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 8.11: Instruction Limited by Disruptive or Uninterested Students (Continued)**

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Disruptive Students				Students in Classrooms Where Teachers Report Instruction Is Limited by Uninterested Students				
	Some or Not At All		A Lot		Some or Not At All		A Lot		
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Sixth Grade Participants</b>									
Botswana	89 (2.6)	423 (4.7)	11 (2.6)	403 (12.5)	82 (3.4)	425 (5.2)	18 (3.4)	401 (8.3)	
Honduras	95 (1.3)	449 (5.3)	5 (1.3)	464 (9.0)	89 (2.6)	448 (5.6)	11 (2.6)	460 (8.6)	
Kuwait	s 80 (3.8)	418 (8.3)	20 (3.8)	413 (18.1)	s 80 (4.2)	423 (8.8)	20 (4.2)	394 (17.6)	
Morocco	r 81 (4.8)	424 (5.2)	19 (4.8)	408 (15.8)	r 71 (3.7)	430 (5.3)	29 (3.7)	401 (7.4)	
<b>Benchmarking Participants<sup>◇</sup></b>									
Alberta, Canada	85 (3.0)	551 (3.1)	15 (3.0)	534 (6.4)	93 (2.1)	549 (3.0)	7 (2.1)	532 (9.1)	
Ontario, Canada	81 (3.3)	553 (2.9)	19 (3.3)	540 (5.4)	95 (1.7)	552 (2.7)	5 (1.7)	532 (10.0)	
Quebec, Canada	77 (3.8)	539 (2.5)	23 (3.8)	530 (3.5)	90 (2.8)	539 (2.3)	10 (2.8)	524 (5.5)	
Maltese - Malta	r 82 (0.1)	461 (1.5)	18 (0.1)	448 (3.6)	r 90 (0.1)	460 (1.5)	10 (0.1)	447 (6.5)	
Eng/Afr (5) - RSA	79 (4.9)	427 (7.6)	21 (4.9)	420 (20.2)	81 (4.1)	430 (8.4)	19 (4.1)	409 (21.7)	
Andalusia, Spain	92 (1.9)	518 (2.6)	8 (1.9)	477 (9.4)	84 (3.2)	520 (2.6)	16 (3.2)	487 (6.7)	
Abu Dhabi, UAE	90 (1.8)	424 (5.3)	10 (1.8)	429 (13.6)	93 (2.0)	427 (5.1)	7 (2.0)	390 (14.9)	
Dubai, UAE	92 (0.8)	481 (2.8)	8 (0.8)	444 (8.3)	94 (1.6)	482 (2.5)	6 (1.6)	413 (24.5)	
Florida, US	r 86 (3.5)	576 (3.9)	14 (3.5)	542 (8.2)	r 82 (4.1)	577 (4.0)	18 (4.1)	541 (8.2)	

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Disruptive Students				Students in Classrooms Where Teachers Report Instruction Is Limited by Uninterested Students			
	Some or Not At All		A Lot		Some or Not At All		A Lot	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	90 (2.4)	465 (4.1)	10 (2.4)	447 (8.4)	75 (3.6)	470 (4.5)	25 (3.6)	441 (8.2)
Colombia	83 (3.3)	579 (3.8)	17 (3.3)	560 (7.7)	64 (4.4)	579 (4.4)	36 (4.4)	572 (5.4)
South Africa	86 (2.0)	458 (4.7)	14 (2.0)	484 (11.7)	86 (2.6)	459 (4.2)	14 (2.6)	469 (11.7)

Exhibit 8.10 presents teachers' reports about the degree to which their instruction is limited by students' lack of nutrition or not having enough sleep. On average, internationally, 73 percent of the fourth grade students were in classrooms where instruction was "not at all" limited because students were lacking in basic nutrition. These fourth grade students had higher average reading achievement than their peers in classrooms where instruction was limited "some" or "a lot" due to lack of basic nutrition (519 vs. 495). It is of considerable concern that 27 percent of fourth grade students, on average, were reported to be suffering from lack of basic nutrition; and this percentage is much higher in some countries, including some of those that participated at the sixth grade and in prePIRLS.

Teachers reported that 51 percent of the fourth grade students, on average, were in classrooms where instruction was "not at all" limited by students suffering from not enough sleep. However, it is rather alarming that 49 percent, on average, were in classrooms where instruction was limited "some" or "a lot" by students suffering from lack of sleep. The achievement gap for sleep deprivation was somewhat less than that related to lack of nutrition, but the fourth grade students suffering from some amount of sleep deprivation did have lower average reading achievement than their more alert counterparts (507 vs. 518). Again, there was considerable variation across countries in teachers' reports about the percentages of fourth grade students suffering from not enough sleep. According to their teachers, in a number of PIRLS 2011 countries and benchmarking participants, the majority of students were at least somewhat sleep deprived.

### *Instruction Limited by Disruptive or Uninterested Students*

The importance of classroom management and maintaining a positive and productive classroom environment is widely recognized as central to high-quality teaching (Bill & Melinda Gates Foundation, 2010). Yet, even the most experienced and effective teachers can encounter discipline problems.

Exhibit 8.11 presents teachers' reports about the extent to which their fourth grade classroom instruction in reading was limited by disruptive or uninterested students. As some good news, internationally, on average, teachers reported their instruction was rarely limited by either disruptive or bored students, with 88 to 90 percent of the fourth grade students in classrooms with some or no problems. The 10 to 12 percent of students in classrooms with a lot of student behavior problems did have lower average reading achievement

(from 13–21 points). Across the fourth grade, sixth grade, benchmarking, and prePIRLS participants, there was some variation in teachers’ reports about disruptive and uninterested students. In general, however, teachers reported that fourth grade students around the world were relatively well behaved and attentive during their reading lessons.

## Classroom Resources for Teaching Reading

### *Resources Teachers Use for Teaching Reading*

Exhibit 8.12 contains teachers’ reports about the classroom materials used for teaching reading. On average, internationally, textbooks were used most often as the basis for reading instruction, for 72 percent of the fourth grade students, and workbooks or worksheets were used the next most often, for 40 percent of the students. A variety of children’s books or a reading series was used as the basis of instruction for approximately one-fourth of the fourth grade students, and relying on computer software was relatively rare, used for only eight percent of the students. Teachers reported that all of the materials asked about were used to some extent as a supplementary resources for reading instruction, with the most popular, on average, being a variety of children’s books used with 69 percent of the students, followed by a reading series and workbooks or worksheets used with 56 to 59 percent of the students. Teachers reported using computer software as a supplementary resource for 48 percent of the fourth grade students, on average.

There was considerable variation across countries in the types of materials used as the basis for reading instruction versus being considered as supplementary. For example, some countries used children’s books as the basis for instruction for the majority of their fourth grade students, including Australia, Canada, Denmark, England, France, New Zealand, Northern Ireland, and Sweden. Of these, Australia, France, New Zealand, and Northern Ireland had a dual approach, also using a reading series as a basis for instruction for the majority of their students. The pattern of a variety of approaches to using textbooks, workbooks or worksheets, and children’s books to provide and supplement reading instruction also was evidenced at the sixth grade, and with the benchmarking and prePIRLS participants. For these students, teachers often reported using a reading series and children’s books as supplementary resources in their reading instruction.

**Exhibit 8.12: Resources Teachers Use for Teaching Reading**

Reported by Teachers

Country	Percent of Students Whose Teachers Use									
	A Variety of Children's Books		Textbooks		Reading Series		Workbooks or Worksheets		Computer Software for Reading Instruction	
	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement
Australia	r 61 (4.0)	39 (4.1)	r 14 (2.7)	48 (3.6)	r 51 (4.2)	41 (4.2)	r 16 (2.6)	80 (3.1)	r 18 (3.2)	66 (4.2)
Austria	23 (2.6)	76 (2.6)	59 (3.2)	36 (2.9)	8 (1.9)	65 (3.6)	39 (3.3)	61 (3.3)	9 (2.0)	61 (3.6)
Azerbaijan	16 (3.1)	80 (3.3)	89 (2.4)	11 (2.4)	21 (3.4)	67 (3.7)	54 (3.8)	44 (4.0)	13 (2.3)	35 (4.0)
Belgium (French)	36 (4.5)	58 (4.6)	36 (4.1)	51 (4.0)	12 (2.4)	61 (3.7)	40 (4.7)	49 (4.8)	1 (0.7)	14 (3.2)
Bulgaria	4 (1.5)	94 (1.6)	98 (0.9)	2 (0.9)	10 (2.2)	89 (2.2)	61 (3.3)	39 (3.3)	0 (0.3)	20 (2.9)
Canada	61 (2.3)	39 (2.4)	33 (2.3)	50 (3.0)	25 (2.5)	55 (2.7)	27 (2.3)	65 (2.3)	6 (1.0)	51 (2.3)
Chinese Taipei	33 (3.4)	64 (3.6)	76 (3.2)	19 (2.8)	8 (2.1)	51 (4.2)	40 (3.9)	55 (4.1)	8 (2.2)	72 (3.2)
Colombia	45 (4.7)	50 (4.7)	56 (4.4)	42 (4.4)	27 (4.0)	51 (4.2)	41 (4.5)	55 (4.5)	10 (2.9)	37 (4.5)
Croatia	12 (2.2)	87 (2.3)	92 (2.0)	7 (1.9)	8 (1.8)	84 (2.2)	39 (3.6)	61 (3.6)	1 (0.5)	25 (2.8)
Czech Republic	22 (3.5)	78 (3.5)	85 (3.1)	15 (3.1)	12 (2.9)	75 (3.6)	19 (3.2)	68 (4.0)	2 (1.0)	24 (3.3)
Denmark	55 (3.6)	44 (3.7)	50 (3.8)	48 (3.6)	27 (3.1)	72 (3.1)	41 (3.4)	54 (3.4)	3 (1.2)	71 (3.2)
England	83 (2.9)	17 (2.9)	20 (3.7)	62 (4.5)	29 (3.9)	45 (4.0)	9 (2.5)	77 (3.4)	17 (3.3)	54 (3.9)
Finland	22 (2.9)	77 (2.9)	86 (2.3)	12 (2.0)	8 (1.4)	73 (2.7)	53 (3.4)	44 (3.5)	2 (0.7)	60 (3.9)
France	72 (3.0)	28 (3.0)	25 (3.1)	52 (4.1)	56 (3.0)	36 (2.8)	19 (2.9)	64 (3.3)	0 (0.3)	15 (2.3)
Georgia	12 (3.0)	87 (3.0)	98 (1.0)	2 (1.0)	7 (1.9)	79 (3.1)	14 (2.8)	81 (3.1)	1 (0.5)	35 (3.7)
Germany	24 (3.2)	75 (3.2)	62 (3.3)	31 (3.0)	7 (1.8)	72 (3.2)	52 (3.5)	47 (3.4)	6 (1.7)	52 (3.8)
Hong Kong SAR	10 (2.3)	83 (3.2)	96 (1.7)	4 (1.7)	13 (3.4)	69 (4.0)	63 (4.2)	36 (4.2)	22 (3.8)	67 (4.4)
Hungary	5 (1.4)	93 (1.6)	97 (1.1)	3 (1.1)	5 (1.8)	81 (2.9)	76 (2.9)	24 (2.9)	3 (1.2)	39 (3.5)
Indonesia	6 (1.9)	84 (2.9)	86 (3.2)	14 (3.2)	18 (3.1)	73 (3.4)	42 (4.6)	56 (4.7)	3 (1.5)	33 (4.5)
Iran, Islamic Rep. of	6 (1.6)	84 (3.5)	86 (3.9)	14 (3.8)	12 (2.2)	61 (3.4)	10 (2.2)	71 (2.9)	1 (0.0)	20 (2.9)
Ireland	38 (3.4)	61 (3.4)	74 (3.2)	25 (3.2)	36 (3.4)	51 (3.6)	19 (2.8)	79 (2.9)	6 (1.6)	62 (3.3)
Israel	35 (4.1)	62 (4.1)	81 (3.2)	17 (2.8)	--	--	55 (4.4)	45 (4.4)	17 (3.6)	55 (4.4)
Italy	17 (3.1)	82 (3.1)	80 (2.9)	19 (2.8)	10 (2.1)	83 (2.5)	32 (3.3)	66 (3.5)	1 (0.0)	30 (3.3)
Lithuania	9 (1.8)	90 (1.8)	97 (1.5)	3 (1.5)	5 (1.1)	87 (2.0)	68 (3.6)	30 (3.4)	2 (0.8)	57 (3.5)
Malta	24 (0.1)	72 (0.1)	86 (0.1)	13 (0.1)	59 (0.1)	34 (0.1)	45 (0.1)	50 (0.1)	16 (0.1)	55 (0.1)
Morocco	6 (1.6)	54 (4.1)	95 (1.9)	3 (1.8)	23 (3.9)	59 (4.7)	48 (4.4)	35 (4.2)	r 8 (2.6)	19 (2.9)
Netherlands	28 (3.0)	70 (3.0)	84 (2.7)	13 (2.6)	21 (3.3)	54 (3.9)	46 (4.3)	48 (4.2)	10 (2.3)	51 (3.6)
New Zealand	51 (3.4)	48 (3.4)	14 (2.3)	38 (2.8)	84 (2.7)	16 (2.7)	14 (2.3)	81 (2.5)	9 (1.6)	73 (2.7)
Northern Ireland	r 69 (4.6)	31 (4.6)	r 30 (3.9)	66 (4.2)	r 54 (4.2)	41 (4.2)	r 17 (3.2)	81 (3.3)	r 9 (2.2)	73 (4.1)
Norway	26 (3.8)	73 (3.8)	81 (4.1)	19 (4.1)	35 (4.3)	61 (4.5)	54 (4.1)	45 (4.1)	12 (3.2)	64 (4.5)
Oman	10 (1.8)	83 (2.3)	95 (1.2)	4 (1.1)	30 (3.0)	69 (3.0)	36 (3.3)	62 (3.3)	10 (2.3)	46 (2.7)
Poland	11 (2.3)	89 (2.3)	85 (2.8)	15 (2.8)	56 (3.5)	44 (3.5)	57 (3.5)	43 (3.4)	0 (0.0)	53 (3.8)
Portugal	32 (4.7)	67 (4.7)	67 (5.0)	33 (5.0)	32 (3.7)	63 (3.8)	50 (4.7)	49 (4.6)	10 (2.3)	63 (4.6)
Qatar	19 (2.6)	72 (3.1)	77 (3.3)	19 (3.4)	18 (3.9)	61 (4.9)	55 (3.6)	43 (3.6)	26 (3.1)	49 (4.0)
Romania	11 (2.3)	87 (2.5)	94 (1.5)	6 (1.5)	22 (3.2)	78 (3.2)	43 (3.9)	57 (3.9)	3 (1.4)	45 (4.0)
Russian Federation	7 (1.9)	93 (2.0)	95 (1.6)	5 (1.6)	2 (1.1)	90 (2.4)	22 (3.0)	65 (3.5)	2 (0.8)	47 (3.2)
Saudi Arabia	18 (3.6)	75 (4.0)	99 (0.8)	1 (0.8)	9 (2.6)	54 (4.6)	72 (3.5)	28 (3.5)	19 (3.1)	54 (4.2)
Singapore	13 (1.8)	82 (2.0)	78 (2.4)	11 (1.9)	18 (2.3)	60 (2.7)	71 (2.4)	29 (2.4)	13 (1.4)	68 (2.5)
Slovak Republic	9 (1.7)	91 (1.7)	92 (1.7)	8 (1.7)	6 (1.8)	29 (2.9)	24 (2.7)	73 (2.8)	1 (0.6)	52 (3.6)
Slovenia	21 (3.3)	79 (3.3)	76 (3.0)	22 (2.9)	89 (2.8)	10 (2.8)	61 (3.9)	38 (4.0)	1 (0.9)	51 (3.9)
Spain	23 (2.8)	74 (2.8)	66 (3.4)	34 (3.4)	32 (2.7)	64 (2.8)	22 (2.8)	75 (2.8)	1 (0.6)	51 (4.0)
Sweden	r 53 (3.7)	46 (3.7)	r 45 (4.6)	50 (4.4)	r 37 (4.3)	50 (4.3)	r 30 (4.3)	66 (4.4)	r 6 (2.1)	58 (4.1)
Trinidad and Tobago	14 (2.9)	84 (3.1)	55 (4.2)	45 (4.1)	61 (3.8)	35 (3.5)	26 (3.5)	73 (3.6)	5 (1.4)	33 (4.0)
United Arab Emirates	23 (1.8)	70 (2.1)	86 (1.6)	12 (1.6)	38 (2.5)	52 (2.5)	50 (2.2)	49 (2.2)	22 (2.1)	48 (2.2)
United States	r 47 (2.5)	51 (2.5)	r 46 (2.8)	40 (2.5)	r 47 (2.9)	36 (2.2)	r 19 (2.1)	75 (2.2)	r 9 (1.5)	65 (2.7)
International Avg.	27 (0.4)	69 (0.5)	72 (0.4)	23 (0.4)	27 (0.4)	59 (0.5)	40 (0.5)	56 (0.5)	8 (0.3)	48 (0.5)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (-) indicates comparable data not available.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

Country	Percent of Students Whose Teachers Use									
	A Variety of Children's Books		Textbooks		Reading Series		Workbooks or Worksheets		Computer Software for Reading Instruction	
	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement
<b>Sixth Grade Participants</b>										
Botswana	10 (2.2)	82 (3.1)	74 (4.3)	26 (4.3)	7 (2.5)	80 (3.6)	19 (3.5)	43 (4.8)	1 (0.9)	9 (2.6)
Honduras	26 (4.7)	54 (4.6)	82 (3.6)	17 (3.5)	27 (4.4)	59 (4.4)	34 (4.6)	56 (4.7)	10 (2.8)	22 (3.5)
Kuwait	s 9 (2.4)	77 (4.5)	s 94 (2.3)	6 (2.3)	s 24 (4.7)	69 (5.1)	s 76 (4.8)	22 (4.9)	s 11 (3.2)	38 (4.2)
Morocco	r 12 (2.6)	56 (4.1)	r 94 (1.6)	5 (1.5)	r 26 (5.1)	58 (5.0)	r 51 (4.7)	32 (4.2)	s 9 (2.4)	27 (5.0)
<b>Benchmarking Participants<sup>◇</sup></b>										
Alberta, Canada	67 (3.9)	33 (3.9)	18 (2.6)	54 (3.9)	26 (3.7)	48 (3.8)	10 (2.4)	78 (3.0)	7 (2.1)	61 (3.7)
Ontario, Canada	62 (4.3)	38 (4.3)	28 (3.9)	61 (4.2)	32 (3.9)	58 (4.1)	16 (3.2)	76 (3.8)	7 (2.2)	59 (4.1)
Quebec, Canada	36 (4.7)	63 (4.7)	62 (4.7)	32 (4.6)	17 (3.7)	61 (4.5)	60 (3.5)	38 (3.5)	2 (1.1)	24 (3.6)
Maltese - Malta	s 27 (0.2)	64 (0.2)	s 83 (0.1)	13 (0.1)	s 57 (0.2)	34 (0.2)	s 46 (0.2)	43 (0.2)	s 12 (0.1)	42 (0.1)
Eng/Afr (5) - RSA	r 27 (5.3)	62 (6.2)	68 (5.1)	31 (5.0)	r 37 (4.4)	53 (5.1)	59 (5.5)	40 (5.5)	r 9 (4.2)	42 (5.7)
Andalusia, Spain	28 (3.9)	71 (3.8)	67 (3.8)	33 (3.7)	34 (4.3)	66 (4.3)	29 (3.8)	68 (3.9)	1 (0.5)	34 (4.0)
Abu Dhabi, UAE	22 (3.5)	71 (4.1)	88 (2.9)	11 (2.8)	39 (4.7)	49 (4.8)	54 (4.3)	46 (4.3)	22 (3.6)	49 (4.5)
Dubai, UAE	r 28 (2.6)	68 (2.7)	r 71 (3.7)	26 (3.7)	r 36 (2.7)	57 (2.3)	r 32 (2.5)	65 (2.5)	r 17 (2.1)	59 (2.8)
Florida, US	r 46 (5.3)	54 (5.3)	r 49 (6.0)	43 (5.2)	r 56 (5.7)	33 (5.3)	r 13 (3.5)	82 (4.4)	r 22 (4.1)	73 (4.9)

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Percent of Students Whose Teachers Use									
	A Variety of Children's Books		Textbooks		Reading Series		Workbooks or Worksheets		Computer Software for Reading Instruction	
	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement	As Basis for Instruction	As a Supplement
Botswana	14 (3.0)	77 (3.7)	68 (3.9)	32 (3.9)	13 (2.6)	74 (3.6)	15 (3.0)	52 (4.3)	2 (1.0)	3 (1.5)
Colombia	45 (4.7)	50 (4.7)	56 (4.4)	42 (4.4)	27 (4.0)	51 (4.2)	41 (4.5)	55 (4.5)	10 (2.9)	37 (4.5)
South Africa	25 (3.5)	64 (3.7)	60 (3.4)	39 (3.4)	r 42 (3.7)	50 (3.8)	63 (3.0)	33 (2.6)	4 (1.3)	20 (2.6)

### *Classroom Libraries*

Having students read books and a variety of different types of materials is fundamental to developing their reading comprehension skills and strategies. Consistent with the abundant research on this topic (e.g., the work pioneered by Jeanne Chall), a number of educational institutions and systems have invested in classroom libraries so that children can have ready access to books and magazines as part of their reading lessons and activities.

Exhibit 8.13 presents teachers' reports about the role of classroom libraries in their reading instruction. There was substantial variation in the results, from countries where almost all students (95–99%) had classroom libraries to countries where only about one-third (30–39%) of students had classroom libraries. This highlights the need to consider the results in Exhibit 8.13 together with the results about school libraries presented in Exhibit 5.7, because some countries concentrate on resourcing and promoting the use of school libraries, some concentrate on classroom libraries, and some concentrate on both.

Internationally, on average, 72 percent of the fourth grade students had classroom libraries and their average reading achievement was higher than their counterparts in classrooms without libraries (514 vs. 507). About one-third of the fourth grade students, on average, had classroom libraries with more than 50 books and about one-third had classroom libraries with at least three magazines.

Interestingly, there may be more availability than actual use of classroom libraries. In comparison to 72 percent of the fourth grade students, on average, having classroom libraries, only 60 percent of the students were given time to use the classroom library at least weekly and just 56 percent could borrow books from it.

According to their teachers, about two-thirds of the fourth grade students, on average, also visited libraries other than the classroom library at least monthly.

### *Computer Activities During Reading Lessons*

According to the *PIRLS 2011 Encyclopedia*, countries are investing in technology as a way to enhance teaching and learning. Technology's role in reading instruction is becoming more important as students increasingly use the Internet to locate information for their assignments across different school subjects as well as in everyday life. According to some researchers, making meaning from electronic texts can be a complex task and requires skills, such as media literacy, that sometimes have been referred to as “new literacies” (Leu, 2009). Also,



there has been tremendous growth in the availability of sophisticated software that facilitates student learning in reading comprehension strategies (e.g., the Improving Comprehension Online (ICON) project).

Exhibit 8.14 contains teachers' reports about the prevalence and types of computer-based activities used as part of reading instruction. Computer availability during reading lessons varied greatly across countries, from 2 percent of the students in Belgium (French-speaking community) to 88 percent in Norway. Internationally, on average, less than half (45%) of the fourth grade students had computers available for their reading lessons. Interestingly, average reading achievement was equivalent between those fourth grade students with computers available and those without computers available.

Teachers reported that 38 percent of students, on average, were asked to look up information on the computer at least monthly. Considering other computer activities that occurred at least monthly, somewhat smaller percentages of students were asked to use the computer to read stories or texts or write stories or texts (32% in both cases). Teachers reported using instructional software to develop reading skills and strategies with 29 percent of the fourth grade students, on average. The range in computer availability across the benchmarking participants reflected the fourth grade results across countries. However, the students participating at the sixth grade and in prePIRLS had less access to computers for reading instruction than did the fourth grade PIRLS students, on average.

**Exhibit 8.13: Classroom Libraries**
*Reported by Teachers*

For information about school libraries, see Exhibit 5.7

Country	Have a Classroom Library			Percent of Students				
	Percent of Students	Average Achievement		With More than 50 Books in Their Classroom Library	With At Least 3 Magazine Titles in Their Classroom Library	Given Class Time to Use Classroom Library At Least Once a Week	Who Can Borrow Books From Classroom Library	Whose Teachers Take Them to Library Other than the Classroom Library At Least Once a Month
		Yes	Yes					
United States	r 99 (0.7)	557 (1.8)	~ ~	r 92 (1.3)	r 36 (2.5)	r 98 (0.8)	r 88 (1.6)	r 95 (1.3)
New Zealand	99 (0.5)	534 (2.2)	~ ~	29 (3.2)	37 (3.3)	99 (0.5)	62 (2.9)	94 (1.3)
Ireland	98 (0.8)	552 (2.3)	~ ~	87 (2.6)	18 (2.6)	94 (1.5)	87 (2.4)	42 (3.9)
Northern Ireland	r 97 (1.5)	561 (2.9)	532 (33.7)	r 89 (2.6)	r 35 (4.2)	r 91 (2.6)	r 88 (3.2)	r 61 (4.5)
Canada	95 (1.8)	547 (1.7)	566 (18.7)	80 (2.0)	48 (2.6)	94 (1.8)	70 (2.7)	93 (1.7)
Hong Kong SAR	95 (2.5)	572 (2.6)	542 (8.0)	75 (4.3)	42 (4.5)	75 (4.0)	61 (4.5)	53 (4.4)
Singapore	92 (1.2)	565 (3.5)	586 (12.1)	44 (2.8)	32 (2.5)	76 (2.1)	73 (2.2)	60 (2.3)
Chinese Taipei	92 (2.4)	553 (2.1)	554 (4.7)	73 (3.8)	40 (4.2)	74 (3.6)	75 (3.2)	78 (2.7)
Australia	r 91 (2.1)	533 (3.2)	521 (8.9)	r 48 (3.8)	r 35 (4.4)	r 89 (2.3)	r 54 (3.6)	r 93 (2.2)
Spain	91 (2.0)	514 (2.6)	509 (4.7)	37 (3.0)	24 (2.9)	78 (2.7)	80 (2.7)	51 (3.1)
Malta	90 (0.1)	474 (1.6)	505 (4.7)	49 (0.1)	35 (0.1)	82 (0.1)	76 (0.1)	75 (0.1)
Israel	89 (2.6)	549 (3.3)	490 (15.4)	33 (4.0)	35 (4.1)	84 (3.0)	75 (3.9)	72 (4.1)
Belgium (French)	89 (2.3)	510 (3.0)	490 (11.4)	63 (3.7)	75 (3.3)	78 (3.1)	57 (3.3)	43 (4.6)
France	87 (2.4)	522 (2.7)	509 (6.7)	51 (3.8)	56 (3.3)	77 (3.1)	63 (3.2)	52 (3.7)
England	87 (2.9)	549 (3.0)	560 (10.2)	70 (4.0)	22 (3.6)	85 (3.3)	73 (3.9)	62 (4.6)
Lithuania	87 (2.3)	529 (2.2)	524 (6.4)	24 (3.1)	40 (3.1)	74 (3.3)	82 (2.7)	82 (2.9)
Netherlands	86 (2.6)	545 (2.3)	556 (4.3)	59 (3.9)	33 (3.4)	85 (2.6)	14 (2.7)	48 (5.0)
Germany	82 (2.8)	539 (2.3)	550 (4.7)	34 (3.3)	24 (2.8)	66 (3.5)	70 (3.3)	54 (3.5)
Hungary	80 (2.3)	542 (3.3)	527 (7.0)	13 (2.3)	17 (2.6)	75 (2.7)	56 (3.3)	76 (3.2)
Austria	78 (2.8)	529 (2.2)	527 (4.0)	39 (3.7)	20 (2.7)	70 (3.3)	70 (3.0)	62 (3.7)
Russian Federation	77 (2.4)	571 (2.9)	558 (5.8)	36 (3.4)	50 (3.8)	41 (4.3)	76 (2.5)	85 (3.0)
Italy	73 (3.2)	544 (2.6)	534 (3.7)	25 (3.0)	17 (3.0)	47 (3.0)	70 (3.4)	41 (3.5)
Qatar	73 (2.7)	421 (5.2)	435 (6.6)	17 (3.3)	33 (3.6)	43 (4.1)	52 (5.1)	67 (3.5)
Azerbaijan	71 (3.4)	463 (3.2)	460 (7.6)	10 (2.4)	54 (4.0)	64 (4.0)	70 (3.5)	91 (2.1)
Trinidad and Tobago	69 (3.5)	469 (5.2)	474 (7.7)	13 (2.8)	26 (3.8)	66 (3.6)	39 (3.9)	64 (4.0)
Romania	69 (4.0)	499 (5.3)	504 (7.8)	15 (3.0)	49 (4.2)	59 (4.2)	66 (4.0)	86 (2.4)
Slovak Republic	69 (3.3)	538 (2.7)	528 (5.0)	10 (2.0)	29 (3.2)	49 (3.4)	55 (3.3)	49 (3.1)
Portugal	67 (3.9)	542 (3.6)	538 (4.1)	14 (2.9)	23 (3.2)	59 (4.1)	56 (4.3)	67 (4.1)
Poland	65 (4.1)	525 (2.5)	527 (3.7)	8 (1.8)	28 (3.1)	42 (4.0)	50 (4.2)	85 (2.7)
Norway	60 (4.3)	507 (2.9)	505 (2.9)	18 (3.1)	22 (3.7)	57 (4.4)	39 (4.6)	89 (2.3)
Slovenia	59 (3.8)	528 (2.5)	533 (3.1)	4 (1.4)	26 (3.0)	42 (3.0)	40 (3.9)	84 (2.8)
United Arab Emirates	r 59 (2.6)	444 (3.4)	430 (4.6)	r 14 (1.8)	r 31 (2.4)	r 46 (2.7)	r 45 (2.6)	r 83 (2.0)
Indonesia	58 (3.9)	431 (5.3)	425 (6.5)	45 (4.5)	43 (4.2)	44 (4.3)	49 (4.3)	62 (4.3)
Czech Republic	55 (3.6)	544 (3.0)	546 (2.8)	14 (2.5)	20 (3.7)	37 (3.7)	43 (3.5)	40 (3.7)
Georgia	54 (3.9)	492 (3.9)	482 (5.0)	7 (2.1)	31 (3.8)	43 (4.0)	53 (4.0)	73 (3.5)
Iran, Islamic Rep. of	53 (3.9)	465 (4.7)	448 (4.9)	17 (2.6)	16 (2.8)	37 (3.7)	50 (3.9)	49 (3.4)
Sweden	r 52 (4.2)	540 (3.0)	546 (3.8)	r 28 (3.5)	r 10 (2.6)	r 50 (4.3)	r 44 (4.2)	r 80 (3.3)
Finland	51 (3.8)	566 (2.6)	570 (2.5)	22 (3.0)	13 (2.3)	42 (3.7)	25 (3.0)	70 (3.2)
Croatia	51 (3.9)	555 (2.3)	551 (2.6)	10 (1.8)	41 (3.6)	30 (3.4)	41 (3.8)	79 (2.6)
Bulgaria	49 (3.9)	538 (5.7)	526 (5.8)	3 (0.9)	20 (2.5)	27 (3.3)	39 (4.2)	77 (3.3)
Oman	41 (2.8)	406 (4.2)	380 (3.7)	4 (1.1)	20 (2.6)	35 (2.6)	34 (2.9)	68 (2.9)
Saudi Arabia	39 (4.0)	447 (9.1)	420 (6.0)	5 (2.1)	22 (3.1)	21 (4.0)	35 (4.2)	48 (3.7)
Denmark	38 (3.6)	558 (3.0)	552 (2.2)	5 (1.5)	7 (1.7)	31 (3.2)	26 (3.3)	94 (1.5)
Colombia	37 (4.1)	436 (7.0)	453 (5.5)	13 (2.6)	25 (3.8)	34 (4.0)	27 (3.9)	55 (4.0)
Morocco	30 (4.2)	317 (9.3)	306 (5.2)	4 (2.1)	14 (2.6)	r 13 (3.5)	22 (3.5)	10 (2.1)
<b>International Avg.</b>	<b>72 (0.5)</b>	<b>514 (0.6)</b>	<b>507 (1.3)</b>	<b>32 (0.4)</b>	<b>31 (0.5)</b>	<b>60 (0.5)</b>	<b>56 (0.5)</b>	<b>68 (0.5)</b>

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 8.13: Classroom Libraries (Continued)**

Country	Have a Classroom Library			Percent of Students					
	Percent of Students	Average Achievement		With More than 50 Books in Their Classroom Library	With At Least 3 Magazine Titles in Their Classroom Library	Given Class Time to Use Classroom Library At Least Once a Week	Who Can Borrow Books From Classroom Library	Whose Teachers Take Them to Library Other than the Classroom Library At Least Once a Month	
		Yes	Yes						No

**Sixth Grade Participants**

Botswana	83 (3.1)	417 (5.0)	441 (11.5)	24 (3.6)	52 (4.5)	78 (3.3)	65 (4.3)	74 (3.8)
Honduras	52 (4.7)	459 (8.3)	437 (7.1)	15 (3.4)	30 (4.1)	41 (4.1)	30 (4.9)	40 (4.1)
Morocco	r 30 (3.7)	453 (5.5)	408 (5.7)	r 6 (1.9)	r 17 (3.0)	r 13 (2.4)	r 24 (3.5)	r 12 (2.2)
Kuwait	s 26 (4.3)	444 (13.1)	414 (8.5)	s 2 (1.3)	s 11 (2.8)	s 3 (1.5)	s 18 (3.7)	s 70 (4.8)

**Benchmarking Participants<sup>0</sup>**

Florida, US	s 100 (0.0)	570 (3.9)	~ ~	s 92 (2.5)	s 41 (4.8)	s 96 (2.0)	s 94 (2.3)	s 96 (2.3)
Quebec, Canada	99 (0.9)	538 (2.2)	~ ~	68 (4.4)	49 (4.8)	95 (1.9)	63 (4.7)	95 (1.9)
Alberta, Canada	98 (1.0)	548 (3.1)	~ ~	87 (2.5)	44 (3.8)	95 (1.7)	76 (3.1)	93 (2.1)
Ontario, Canada	94 (2.5)	550 (2.8)	557 (13.8)	79 (4.3)	50 (4.3)	94 (2.6)	75 (4.4)	94 (1.4)
Andalusia, Spain	92 (2.3)	515 (2.5)	514 (7.9)	38 (4.2)	19 (3.3)	75 (3.6)	81 (3.4)	46 (4.6)
Maltese - Malta	s 88 (0.1)	455 (1.7)	476 (4.6)	s 52 (0.2)	s 32 (0.2)	s 77 (0.1)	s 76 (0.2)	s 75 (0.2)
Dubai, UAE	r 72 (2.3)	485 (4.5)	456 (6.9)	r 16 (2.3)	r 30 (2.8)	r 62 (2.6)	r 55 (3.0)	r 88 (1.6)
Eng/Afr (5) - RSA	71 (5.4)	436 (10.1)	401 (16.9)	29 (4.8)	40 (5.1)	67 (5.6)	50 (5.7)	63 (5.1)
Abu Dhabi, UAE	54 (4.9)	426 (8.5)	425 (8.5)	14 (3.2)	25 (4.2)	40 (4.6)	43 (4.4)	84 (3.6)

<sup>0</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Have a Classroom Library			Percent of Students					
	Percent of Students	Average Achievement		With More than 50 Books in Their Classroom Library	With At Least 3 Magazine Titles in Their Classroom Library	Given Class Time to Use Classroom Library At Least Once a Week	Who Can Borrow Books From Classroom Library	Whose Teachers Take Them to Library Other than the Classroom Library At Least Once a Month	
		Yes	Yes						No

Botswana	80 (3.5)	464 (4.1)	460 (10.8)	18 (3.3)	52 (4.6)	77 (3.5)	51 (4.4)	64 (3.3)
South Africa	70 (3.8)	471 (5.3)	438 (6.3)	30 (4.0)	45 (4.5)	57 (4.2)	51 (3.8)	46 (3.5)
Colombia	37 (4.1)	568 (5.7)	581 (4.6)	13 (2.6)	25 (3.8)	34 (4.0)	27 (3.9)	55 (4.0)

**Exhibit 8.14: Computer Activities During Reading Lessons**

Reported by Teachers

Country	Computers Available for Reading Lessons			Percent of Students Whose Teachers Have Them Use Computers At Least Monthly			
	Percent of Students	Average Achievement		To Look Up Information	To Read Stories or Other Texts	To Write Stories or Other Texts	To Develop Reading Skills and Strategies with Instructional Software
	Yes	Yes	No				
Norway	88 (2.5)	507 (2.2)	506 (4.4)	79 (3.2)	54 (4.9)	77 (3.8)	68 (3.6)
Denmark	87 (2.0)	553 (1.9)	564 (3.9)	76 (2.6)	65 (2.7)	83 (2.3)	54 (3.5)
New Zealand	86 (2.2)	534 (2.4)	532 (8.8)	83 (2.4)	70 (2.9)	79 (2.7)	55 (3.0)
Netherlands	85 (2.6)	546 (2.4)	549 (3.0)	78 (3.4)	55 (4.1)	68 (3.5)	48 (4.3)
Australia	r 82 (2.9)	533 (3.3)	525 (6.4)	r 76 (3.2)	r 68 (3.4)	r 74 (3.2)	r 58 (3.5)
Austria	79 (3.3)	529 (2.0)	529 (3.9)	60 (3.4)	51 (3.2)	42 (3.4)	59 (3.2)
United States	r 74 (2.2)	554 (2.0)	562 (3.8)	r 61 (2.4)	r 53 (2.3)	r 49 (2.4)	r 55 (2.6)
Sweden	r 73 (3.8)	543 (2.5)	544 (4.5)	r 64 (4.2)	r 44 (4.3)	r 65 (4.1)	r 43 (4.8)
Malta	73 (0.1)	461 (1.7)	512 (3.1)	65 (0.1)	63 (0.1)	59 (0.1)	49 (0.1)
Germany	73 (2.8)	544 (2.5)	534 (4.5)	54 (3.2)	42 (3.3)	37 (3.2)	45 (3.4)
Northern Ireland	r 65 (4.2)	559 (3.1)	562 (5.6)	r 61 (4.3)	r 51 (4.4)	r 63 (4.2)	r 40 (4.8)
Finland	64 (3.1)	568 (2.3)	569 (2.9)	59 (3.6)	41 (3.3)	53 (3.4)	34 (3.4)
Singapore	64 (2.8)	563 (4.6)	572 (4.8)	58 (2.7)	51 (2.8)	47 (2.8)	47 (2.7)
Ireland	56 (3.7)	555 (2.9)	548 (3.5)	50 (3.9)	42 (3.7)	43 (3.7)	30 (3.4)
Qatar	53 (3.3)	409 (6.3)	440 (6.1)	51 (3.5)	49 (3.2)	44 (4.3)	48 (3.2)
Chinese Taipei	48 (3.9)	553 (2.5)	553 (2.8)	36 (3.8)	39 (3.7)	20 (2.9)	37 (3.5)
Portugal	47 (5.3)	542 (4.4)	540 (4.0)	45 (5.4)	41 (5.3)	44 (5.4)	36 (5.2)
England	47 (4.0)	547 (4.1)	555 (4.2)	43 (4.2)	34 (4.5)	40 (4.1)	26 (4.1)
Canada	46 (2.5)	550 (2.4)	547 (2.2)	43 (2.4)	34 (2.6)	40 (2.5)	24 (2.2)
United Arab Emirates	45 (2.4)	439 (4.0)	439 (3.8)	r 41 (2.5)	r 41 (2.4)	r 33 (2.5)	r 37 (2.5)
Hong Kong SAR	45 (4.7)	569 (3.7)	572 (3.7)	38 (4.6)	36 (4.6)	10 (2.9)	34 (4.6)
Lithuania	45 (3.9)	529 (4.0)	528 (3.0)	41 (4.2)	36 (3.9)	32 (3.3)	33 (3.5)
Azerbaijan	42 (3.8)	461 (5.0)	463 (5.6)	30 (3.8)	28 (3.7)	29 (3.7)	30 (3.8)
Israel	40 (4.2)	547 (5.6)	539 (4.1)	37 (4.1)	35 (4.2)	35 (3.7)	31 (3.9)
Czech Republic	39 (4.5)	544 (4.0)	546 (2.4)	33 (4.3)	22 (3.6)	15 (3.3)	16 (3.2)
Hungary	38 (3.5)	530 (6.0)	544 (3.8)	35 (3.5)	29 (3.5)	12 (2.4)	18 (2.8)
Indonesia	37 (4.6)	430 (7.5)	429 (5.5)	14 (3.1)	13 (3.2)	9 (2.8)	12 (2.4)
Slovak Republic	37 (3.5)	539 (3.0)	532 (3.8)	32 (3.3)	32 (3.2)	26 (3.0)	23 (2.9)
Slovenia	36 (3.7)	534 (3.2)	528 (2.7)	32 (3.5)	25 (3.0)	23 (3.0)	22 (2.9)
Colombia	32 (4.5)	446 (8.6)	447 (4.8)	25 (4.1)	24 (3.9)	26 (4.2)	25 (4.1)
Saudi Arabia	31 (4.2)	436 (8.9)	428 (5.3)	24 (4.2)	24 (3.9)	21 (4.1)	26 (4.1)
Russian Federation	29 (3.6)	568 (7.1)	568 (2.3)	24 (2.8)	20 (2.5)	23 (2.7)	20 (3.0)
Trinidad and Tobago	27 (3.4)	469 (7.4)	472 (4.6)	14 (2.7)	16 (2.7)	11 (2.7)	13 (2.7)
Romania	25 (3.4)	502 (9.6)	500 (4.7)	21 (3.3)	20 (3.4)	17 (3.0)	19 (3.2)
Italy	24 (2.9)	539 (4.0)	542 (2.6)	14 (2.4)	15 (2.5)	18 (2.6)	14 (2.3)
Spain	20 (2.9)	510 (6.1)	513 (2.4)	17 (2.8)	12 (2.4)	13 (2.5)	13 (2.8)
Oman	20 (2.2)	403 (5.8)	388 (3.2)	15 (2.0)	13 (1.9)	12 (1.8)	12 (1.8)
Poland	20 (3.0)	524 (4.8)	526 (2.4)	19 (2.9)	16 (3.0)	12 (2.6)	9 (2.4)
Georgia	18 (2.8)	491 (6.6)	486 (3.8)	17 (2.8)	15 (2.7)	11 (2.6)	12 (2.5)
Bulgaria	17 (2.5)	531 (11.3)	532 (4.3)	15 (2.4)	16 (2.6)	10 (1.8)	6 (1.5)
Croatia	14 (2.1)	551 (4.9)	553 (2.0)	13 (2.0)	12 (2.1)	10 (1.7)	5 (1.2)
France	11 (2.0)	521 (10.0)	520 (2.6)	10 (1.7)	5 (1.2)	9 (1.7)	4 (1.0)
Morocco	11 (2.3)	325 (12.5)	307 (4.4)	5 (1.2)	3 (0.8)	2 (0.7)	4 (1.1)
Iran, Islamic Rep. of	9 (2.2)	494 (11.6)	453 (3.4)	6 (1.8)	6 (1.8)	5 (1.6)	5 (1.7)
Belgium (French)	2 (1.0)	~ ~	508 (2.9)	1 (0.8)	1 (0.5)	1 (0.6)	1 (0.6)
International Avg.	45 (0.5)	513 (0.9)	513 (0.6)	38 (0.5)	32 (0.5)	32 (0.5)	29 (0.5)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

**Exhibit 8.14: Computer Activities During Reading Lessons (Continued)**

Country	Computers Available for Reading Lessons			Percent of Students Whose Teachers Have Them Use Computers At Least Monthly				
	Percent of Students	Average Achievement		To Look Up Information	To Read Stories or Other Texts	To Write Stories or Other Texts	To Develop Reading Skills and Strategies with Instructional Software	
	Yes	Yes	No					
<b>Sixth Grade Participants</b>								
Kuwait	s 29 (4.8)	409 (14.2)	424 (9.2)	s 23 (4.6)	s 24 (4.3)	s 23 (4.5)	s 25 (4.7)	
Honduras	19 (3.6)	487 (11.4)	439 (5.4)	15 (3.3)	15 (3.3)	13 (3.1)	12 (2.8)	
Morocco	r 17 (2.9)	436 (14.7)	418 (4.9)	r 9 (1.8)	r 7 (1.6)	r 5 (1.3)	r 6 (1.6)	
Botswana	6 (2.1)	452 (26.6)	419 (4.1)	2 (1.4)	2 (1.4)	2 (1.4)	2 (1.4)	
<b>Benchmarking Participants<sup>◊</sup></b>								
Florida, US	s 91 (2.9)	569 (4.1)	583 (13.8)	s 79 (4.5)	s 78 (4.6)	s 58 (5.2)	s 81 (4.0)	
Alberta, Canada	61 (4.4)	547 (3.9)	549 (4.7)	58 (4.5)	50 (4.3)	57 (4.7)	36 (4.3)	
Maltese - Malta	s 58 (0.2)	452 (2.3)	461 (3.0)	s 44 (0.2)	s 40 (0.2)	s 43 (0.2)	s 27 (0.1)	
Dubai, UAE	r 53 (2.3)	482 (4.2)	478 (5.4)	r 50 (2.4)	r 48 (2.4)	r 38 (2.1)	r 41 (2.0)	
Ontario, Canada	47 (4.5)	552 (4.0)	550 (3.3)	42 (4.3)	32 (4.3)	42 (4.5)	28 (4.4)	
Abu Dhabi, UAE	43 (4.6)	420 (9.7)	430 (7.6)	37 (4.9)	37 (4.9)	32 (4.2)	36 (4.5)	
Eng/Afr (5) - RSA	39 (6.1)	440 (14.3)	419 (11.5)	r 24 (5.6)	r 22 (5.0)	r 15 (4.5)	r 19 (4.5)	
Quebec, Canada	30 (3.8)	540 (4.9)	536 (2.5)	26 (3.6)	22 (3.5)	21 (3.4)	8 (2.4)	
Andalusia, Spain	20 (3.3)	518 (5.9)	514 (2.9)	17 (3.2)	13 (2.8)	9 (2.2)	10 (2.6)	

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Computers Available for Reading Lessons			Percent of Students Whose Teachers Have Them Use Computers At Least Monthly			
	Percent of Students	Average Achievement		To Look Up Information	To Read Stories or Other Texts	To Write Stories or Other Texts	To Develop Reading Skills and Strategies with Instructional Software
	Yes	Yes	No				
Colombia	32 (4.5)	572 (6.7)	577 (4.1)	25 (4.1)	24 (3.9)	26 (4.2)	25 (4.1)
South Africa	22 (2.5)	489 (11.1)	454 (4.8)	9 (1.6)	9 (1.4)	7 (1.5)	10 (1.6)
Botswana	4 (1.8)	493 (12.0)	462 (3.8)	2 (1.0)	2 (1.0)	1 (1.0)	2 (1.0)



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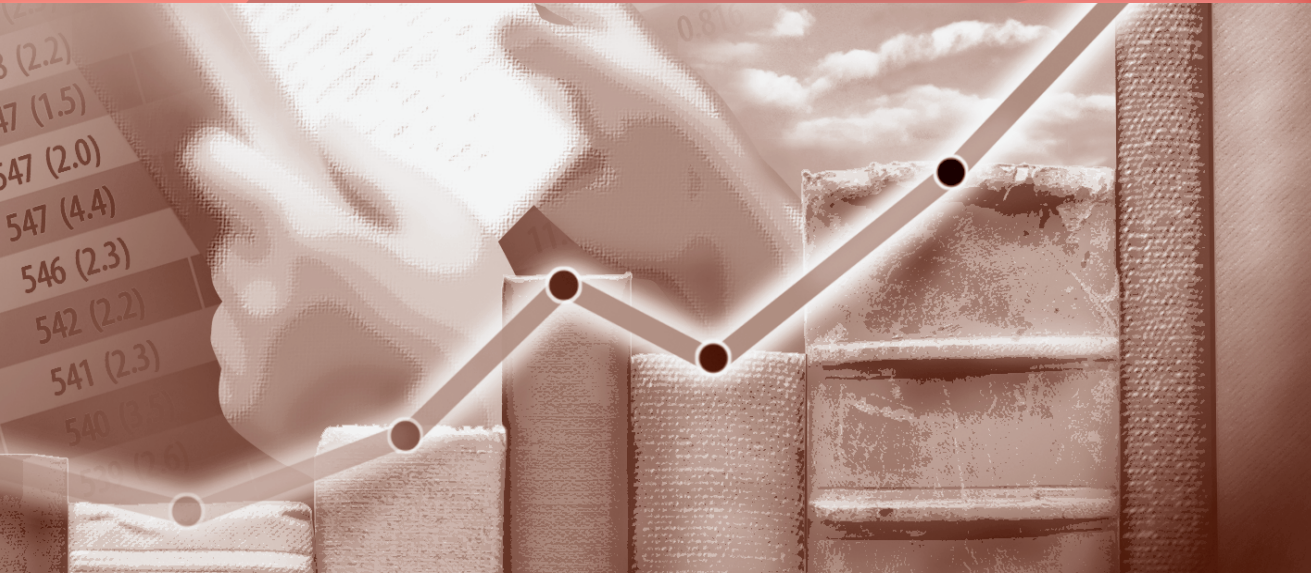
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# Appendices





# Appendix A

## Countries Participating in PIRLS 2011 and in Earlier PIRLS Assessments

**Appendix A.1: Countries Participating in PIRLS 2011 and in Earlier PIRLS Assessments**

Country	2011	2006	2001
Australia	●		
Austria	●	●	
Azerbaijan	●		
Belgium (French)	●	●	
Bulgaria	●	●	●
Canada	●		
Chinese Taipei	●	●	
Colombia	●		●
Croatia	●		
Czech Republic	●		●
Denmark	●	●	
England	●	●	●
Finland	●		
France	●	●	●
Georgia	●	●	
Germany	●	●	●
Hong Kong SAR	●	●	●
Hungary	●	●	●
Indonesia	●	●	
Iran, Islamic Rep. of	●	●	●
Ireland	●		
Israel	●	○	○
Kuwait		●	●
Italy	●	●	●
Lithuania	●	●	●
Malta	●		
Morocco	●	○	○
Netherlands	●	●	●
New Zealand	●	●	●
Northern Ireland	●		
Norway	●	●	●
Oman	●		
Poland	●	●	
Portugal	●		
Qatar	●	○	
Romania	●	●	●
Russian Federation	●	●	●
Saudi Arabia	●		
Singapore	●	●	●
Slovak Republic	●	●	●
Slovenia	●	●	●
South Africa		●	
Spain	●	●	
Sweden	●	●	●
Trinidad and Tobago	●	●	
United Arab Emirates	●		
United States	●	●	●

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

- Indicates participation in that testing cycle.
- Indicates participation but data not comparable for measuring trends to 2011, primarily due to countries improving translations or increasing population coverage.



**Appendix A.1: Countries Participating in PIRLS 2011 and in Earlier PIRLS Assessments (Continued)**

Country	2011	2006	2001
<b>Sixth Grade Participants</b>			
Botswana	●		
Honduras	●		
Kuwait	●		
Morocco	●		
<b>Benchmarking Participants<sup>◇</sup></b>			
Alberta, Canada	●	●	
Ontario, Canada	●	●	●
Quebec, Canada	●	●	●
Maltese - Malta	●		
Eng/Afr (5) - RSA	●	●	
Andalusia, Spain	●		
Abu Dhabi, UAE	●		
Dubai, UAE	●		
Florida, US	●		

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	2011
Botswana	●
Colombia	●
South Africa	●

- Indicates participation in that testing cycle.
- Indicates participation but data not comparable for measuring trends to 2011, primarily due to countries improving translations or increasing population coverage.



# Appendix B

## Characteristics of the Items in the PIRLS 2011 Assessment

**Appendix B.1: Distribution of Assessment Items by Reading Purposes, Reading Processes, and Item Format**

PIRLS Assessment Items	Multiple-choice Items	Constructed-response Items	Total Items	Percentage of Score Points
<b>Reading Purpose</b>				
Literary Experience	40 (40)	32 (50)	72 (90)	52%
Acquire and Use Information	34 (34)	29 (50)	63 (84)	48%
Total	74 (74)	61 (100)	135 (174)	100%
Percentage of Score Points	43%	57%		
<b>Reading Process</b>				
Focus on and Retrieve Explicitly Stated Information	21 (21)	12 (17)	33 (38)	22%
Make Straightforward Inferences	33 (33)	13 (16)	46 (49)	28%
Interpret and Integrate Ideas and Information	10 (10)	28 (55)	38 (65)	37%
Examine and Evaluate Content, Language, and Textual Elements	10 (10)	8 (12)	18 (22)	13%
Total	74 (74)	61 (100)	135 (174)	100%
Percentage of Score Points	43%	57%		

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

prePIRLS Assessment Items	Multiple-choice Items	Constructed-response Items	Total Items	Percentage of Score Points
<b>Reading Purpose</b>				
Literary Experience	31 (31)	32 (36)	63 (67)	50%
Acquire and Use Information	26 (26)	34 (41)	60 (67)	50%
Total	57 (57)	66 (77)	123 (134)	100%
Percentage of Score Points	43%	57%		
<b>Reading Process</b>				
Focus on and Retrieve Explicitly Stated Information	23 (23)	34 (37)	57 (60)	45%
Make Straightforward Inferences	22 (22)	13 (14)	35 (36)	27%
Interpret and Integrate Ideas and Information/Examine and Evaluate Content, Language, and Textual Elements	12 (12)	19 (26)	31 (38)	28%
Total	57 (57)	66 (77)	123 (134)	100%
Percentage of Score Points	43%	57%		

Because of rounding some results may appear inconsistent. Score points are shown in parentheses.





# Appendix C

## Population Coverage and Sample Participation Rates

## Appendix C.1: Information About the Students Assessed in PIRLS 2011

Reported by National Research Coordinators, except for average age at time of testing

Country	Country's Name for Fourth Year of Formal Schooling*	Average Age at Time of Testing	Information About Age of Entry, Promotion, and Retention
Australia	Year 4	10.0	Varies by state, but children generally must begin school by age 6. Most children actually begin school at the minimum age of 4.5–5, and the age of entry policy has been revised within the past ten years. Policy on promotion and retention varies by state but, generally, there is automatic promotion for Grades 1–8.
Austria	Grade 4	10.3	Children must begin school in the September following their 6th birthday, but parents can request early admission for children who turn 6 by March 1st of the following year. Automatic promotion for Grade 1, but there is retention in Grades 2–4 for students failing one or more compulsory subjects.
Azerbaijan	Grade 4	10.2	Children must be 6 years old by the end of September to begin school on September 15 of that year, but children the Ministry of Education identifies as talented who are born before the end of November can begin school in September of the year they turn 6. Promotion is automatic for Grades 1–4, but is dependent on academic progress for Grades 5–8.
Belgium (French)	Grade 4	10.1	Children must begin school in the September of the calendar year of their 6th birthday. Students can be retained one additional year in Grades 1–2, Grades 3–6, and Grades 7–8.
Bulgaria	Grade 4	10.7	Children begin school the calendar year of their 7th birthday, but they may begin at age 6 at parent or guardian discretion. There is automatic promotion for Grades 1–4, with remedial summer courses instead of retention. There are two chances to pass a supplementary exam before retention for Grades 5–8.
Canada	Grade 4	9.9	Varies by province
Chinese Taipei	Grade 4	10.2	Children must be 6 years old before September 1st to begin school in the September of the same calendar year. There is automatic promotion for Grades 1–8.
Colombia	Grade 4	10.4	Children must be at least 6 years old to begin school, although some students start school somewhat older. Schools define promotion and retention policies.
Croatia	Grade 4	10.7	The age of entry policy, which has changed within the past ten years, says that all children must begin school by 7 years old. Although children must be at least 6 years old by the end of March to begin the following September, children typically begin school at age 7. Student promotion is dependent on meeting minimum standards in Grades 1–8.
Czech Republic	Grade 4	10.4	Compulsory schooling begins at the beginning of the school year (September 1st) following the child's 6th birthday unless granted a postponement, which an increasing number of parents are seeking. Promotion is dependent on academic progress in all compulsory subjects, but is automatic for students who have repeated a year.
Denmark	Grade 4	10.9	Children begin preprimary education the year they turn 6 and primary education the following year. Delaying entry by a year requires municipal board approval, but parents can have their child begin a year early. This policy has changed within the past ten years. There is automatic promotion in Grades 1–8, though in special cases students may be promoted or retained based on individual assessments, with parental consent.
England	Year 5	10.3	Children begin school the term (typically September, January, or April) of their 5th birthday. Many local authorities make provision for all children to begin in the September of the school year in which they will turn 5 and some have changed the discretionary time so that children can begin at a younger age, although all of this is subject to parental discretion. There is no policy on promotion and retention.
Finland	Grade 4	10.8	Children begin school the autumn of the year of their 7th birthday, although it is possible to enter school either one year earlier or one year later than the official policy, following discussions with an expert (e.g., school psychologist). There is automatic promotion for Grades 1–8, with retention only in extreme situations.
France	CM1 = Cours Moyen 1ère année - Average Course 1st year, or 'Second year of the 3rd Cycle' (Deepenings Cycle)	10.0	Children must start school at the beginning of the school year (September) in the calendar year of their 6th birthday, although parents and/or teachers can request that children start early. Promotion and retention are based on academic progress. Aside from exceptional circumstances, students can only be retained once during primary school.
Georgia	Grade 4	10.0	Compulsory schooling begins at age 6 according to the Law on General Education, which has been updated within the past ten years. Promotion is automatic for Grades 1–4, and dependent on academic progress for Grades 5–8.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

\* The PIRLS target population is the grade that represents four years of schooling counting from the first year of ISCED Level 1. However, IEA has a policy that students do not fall under the minimum average age of 9.5 years old at the time of testing, so England, Malta, New Zealand, and Trinidad and Tobago assessed students in their fifth year of formal schooling.



Country	Country's Name for Fourth Year of Formal Schooling*	Average Age at Time of Testing	Information About Age of Entry, Promotion, and Retention
Germany	Grade 4	10.4	Compulsory schooling begins the year a child turns 6. Children must be at least 6 years old before a statutory qualifying date (which varies by state; in most states the date falls between June 30th and September 30th) to begin on August 1st. The official policy grants parents the right to request early admission or postponed enrollment, but the school administration has the final decision. The policy on age of entry has been revised within the past ten years. There is automatic promotion in Grade 1, and promotion policies differ between states for later grades.
Hong Kong SAR	Primary 4	10.1	Children begin school the September after they turn 5 years, 8 months old. Representatives of the Education Bureau may prescribe a maximum rate of repetition.
Hungary	Grade 4	10.7	Children begin school during the calendar year they turn 6, if their birthday is before May 31st; however, children may begin during the calendar year of their 6th, 7th, or 8th birthday at parental request. Promotion is automatic in Grades 1–3, and dependent on academic progress for Grades 4–8.
Indonesia	Grade 4	10.4	Children must be 7 years old by the end of June to begin on July 12th, although parents have some choice in starting children at age 6. Promotion is dependent on academic progress for Grades 1–8.
Iran, Islamic Rep. Of	Grade 4	10.2	Children must be 6 years old by September 22nd to begin school September 23rd, although there are few private schools that allow registration at 6.5 years. Students with failing grades in June must take a cumulative exam in September to determine promotion or retention.
Ireland	Fourth class	10.3	The Education (Welfare) Act of 2000 requires children to attend primary schools from the time that they are 6 years old but not before they are 4. In practice, nearly half of 4-year-olds and almost all 5-year-olds are enrolled in infant classes in primary schools. Children only are allowed to repeat a year for educational reasons and in exceptional circumstances.
Israel	Grade 4	10.1	The official policy is that children begin school the calendar year of their 6th birthday, but parents have the final say if they feel their children are not ready to begin. There is retention only in exceptional cases.
Italy	Grade 4	9.7	Children begin school the calendar year of their 6th birthday, but parents can enroll children who will turn 6 years old by April 30th of the following calendar year in the calendar year of their 5th birthday. The age of entry policy has been revised within the past ten years. Promotion is dependent on academic progress for Grades 1–8.
Lithuania	Grade 4	10.7	Children must begin school by the calendar year of their 7th birthday, but parents can enroll children one year early if the child satisfies the requirements of the Ministry of Education and Science. The age of entry policy has been revised within the past ten years. There is no national policy on promotion and retention; decisions are made at the school level.
Malta	Year 5	9.8	Children begin school in late September of the calendar year of their 5th birthday. Students repeat a class only in exceptional circumstances in primary school and on the basis of their academic performance and other factors in exceptional circumstances in secondary school. Students can be retained only once during each education cycle.
Morocco	Grade 4	10.5	Children must be at least 5 years, 6 months old by the beginning of September to begin school, and parents rarely postpone the start. Promotion depends on academic progress for both primary and secondary grades.
Netherlands	Grade 6	10.2	Children must begin kindergarten on the first school day of the month after their 5th birthday. Most children begin kindergarten when they turn 4 and primary education at age 6, although some children begin primary education a year later at age 7. Promotion and retention are decided by the school, dependent on academic progress.
New Zealand	Year 5	10.1	Children must be enrolled in school by their 6th birthday but have the right to begin school at age 5, and nearly all children begin school on or soon after their 5th birthday. There is automatic promotion, with retention only in very special circumstances with school and parental input.
Northern Ireland	Year 6	10.4	Children must be 4 years old by July 1st to begin school in September. The majority of children start and continue with their age group, but some transfer to post-primary a year late or early.
Norway	Grade 4 (4. trinn)	9.7	Children must begin school the calendar year of their 6th birthday. There is automatic promotion for all grades.
Oman	Grade 4	9.9	Children begin school the year of their 6th birthday. Children must be at least 5 years, 9 months old at the start of the academic year (beginning of September), but parents can enroll their children in private schools where the official entry age is 5 years, 5 months. The age of entry policy has been revised within the past ten years. Promotion is automatic for Grades 1–4 and dependent on academic progress for Grades 5–8.
Poland	Grade 3 of primary school	9.9	Children must begin school the calendar year of their 7th birthday, but parents can postpone the beginning of school for medical or psychological reasons. The age of entry policy has been revised within the past ten years. Parental consent is required for retention in Grades 1–6, and promotion is dependent upon academic progress in higher grades.

Country	Country's Name for Fourth Year of Formal Schooling*	Average Age at Time of Testing	Information About Age of Entry, Promotion, and Retention
Portugal	Grade 4	10.0	Children must begin school the year of their 6th birthday if they turn 6 years old by September 15th. Parents can enroll children who turn 6 years old by the end of December, depending on school availability. The age of entry policy has been revised within the past ten years. Promotion is automatic for Grade 1, and dependent on academic progress for Grades 2–8.
Qatar	Grade 4	10.0	Children must begin school in the September of the calendar year of their 6th birthday, but parents can enroll their children in private schools where the official entry age is 5 years, 5 months. Promotion is dependent on academic progress for Grades 1–8.
Romania	Grade 4	10.9	According to the law of education, which has been revised within the past ten years, children must begin school at age 6, although parents can postpone enrollment for one year. Promotion is automatic for Grade 1, and dependent on academic progress for Grades 2–8.
Russian Federation	Grade 4	10.8	Children must be at least 6 years, 6 months old by the end of August to begin school in September but typically begin at age 7. Promotion is automatic for Grade 1 and dependent on academic progress for Grades 2–8.
Saudi Arabia	Grade 4	10.0	Children must begin school the calendar year of their 6th birthday. There is no policy on promotion and retention.
Singapore	Primary 4	10.4	According to the Compulsory Education Act, children must begin school the calendar year of their 7th birthday, although parents may seek a deferral of registration based on medical grounds. There is automatic promotion for Grades 1–4; retention is at principal's discretion for Grade 5 and dependent on academic progress for Grades 6–8.
Slovak Republic	Grade 4	10.4	Children must begin school in September if they turn 6 years old by August 31st. Children may begin school early or after an approved delay, based on psychological tests and professional recommendations. Promotion is dependent on academic progress. Students failing 1–2 required subjects must pass a makeup exam; students failing more than 2 are retained.
Slovenia	Grade 4	9.9	Children must begin school the calendar year of their 6th birthday, but some children who are 6 years old in January enter school in the September of the calendar year before they turn 6. The age of entry policy has been revised within the past ten years. Generally, there is automatic promotion for Grades 1–8, except for students with learning difficulties.
Spain	Primary Education Year Four	9.8	Children must begin school the calendar year of their 6th birthday. Almost every child begins kindergarten at the age of 3 even though it is not compulsory. Students can be retained for 1 year during Grades 1–6, but students with special needs can be retained twice. Students that do not reach the goals in Grades 7 and 8 can be retained in both grades.
Sweden	Grade 4	10.7	Children begin school in the fall of the calendar year of their 7th birthday but can begin the year they turn 6 or 8 years old for special reasons. There is automatic promotion for all grades.
Trinidad and Tobago	Standard 3	10.3	Children must begin school in September of the calendar year of their 5th birthday. Children may begin at age 4, at parent and preprimary teacher discretion, or at an older age, based on socio-economic position. Promotion is dependent on academic progress for Grades 1–6, with automatic promotion for Grades 7–8.
United Arab Emirates	Basic Stage, Cycle 1, Level 1	9.8	Children can begin school when they are 5.5 years old. Parents or guardians can decide when children begin school, but it must be by age 8. The age of entry policy has been revised within the past ten years. Students in Grades 1–5 are subject to remedial instruction for promotion, and promotion in Grades 6–8 is dependent on academic achievement.
United States	Grade 4	10.2	Varies by state, but children commonly begin kindergarten at age 5 (by parental choice) and typically begin primary school at age 6 (by law).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Sixth Grade Participants**

Botswana	Standard 6	12.8	Children must be 6 years old by the end of June to begin school in the January of the same calendar year, but children from remote areas may begin school later than age 6. There is up to 12.5% retention in each class and accelerated progression is possible after parent consultation.
Honduras	Grade 6	12.7	Children must be 7 years old by the end of January to begin school the following February, but about 30% of children typically begin primary school at age 6, per principals' decisions. Promotion is dependent on academic progress on exams prepared and administered by teachers.
Kuwait	Grade 6	11.9	Children must be 6 years old by March 15th to begin school that calendar year, but typically begin primary school at age 5.5 or 6. The policy does not allow for parental discretion. Promotion is automatic for Grades 1–3, and dependent on academic progress for Grades 4–8.
Morocco	Grade 6	12.7	Children must be at least 5 years, 6 months old by the beginning of September to begin school, and parents rarely postpone the start. Promotion depends on academic progress for both primary and secondary grades.

Country	Country's Name for Fourth Year of Formal Schooling*	Average Age at Time of Testing	Information About Age of Entry, Promotion, and Retention
<b>Benchmarking Participants<sup>◊</sup></b>			
Alberta, Canada	Grade 4	9.9	The law requires all children who are 6 years old by September 1 to attend school, although school boards may set their own age requirements for entering school, and many allow children to enter Grade 1 if they are 6 years old by March 1 of the following year. Parental discretion or choice is allowed. School principals make promotion decisions in line with school policies.
Ontario, Canada	Grade 4	9.8	Children must attend school in September if they turn 6 years old by September 1 but also have the right to attend school in September if they will turn 6 by December 31 of that calendar year. Parents may choose to enroll their children in junior kindergarten at age 4 or senior kindergarten at age 5. School principals make promotion decisions, appealable to the school board.
Quebec, Canada	Grade 4	10.1	Children must be 6 years old by September 30th to begin school in the September of that calendar year. School boards determine promotion and the Ministry sets rules for obtaining diplomas.
Maltese - Malta	Year 5	9.8	Children begin school in late September of the calendar year of their 5th birthday. Students repeat a class only in exceptional circumstances in primary school and on the basis of their academic performance and other factors in exceptional circumstances in secondary school. Students can be retained only once during each education cycle.
Eng/Afr (5) - RSA	Grade 5	11.4	Children must be 6 years old by June 30th of the year in which they enroll and children are encouraged to begin at age 7. The age of entry policy has been revised within the past ten years. In principle, students should progress with their age cohort. The norm for repetition is one year per school phase where necessary.
Andalusia, Spain	Grade 4	9.9	Children begin in the September of the year of their 6th birthday and only children considered advanced during preprimary education begin one year early. There is automatic promotion after Grades 1, 3, and 5; teachers may retain students once after Grades 2, 4, or 6 and at any point in Grades 7–8.
Abu Dhabi, UAE	Grade 4	9.7	Children must be 6 years old by October 1st of the school year in which they enroll. Parents sometimes place students in private schools that accept younger students, then transfer them to the public system. The age of entry policy has changed within the past ten years. There is automatic promotion in Grades 1–5, except in special cases and with parental consent. Promotion is dependent on academic progress in Grades 6–8.
Dubai, UAE	Grade 4	9.8	Children can begin school the calendar year of their 5th birthday. The policy on promotion and retention varies by school type.
Florida, US	Grade 4	10.4	Florida law (Section 1003.21 (1) (a)) specifies that children who are 6 or who will be 6 by February 1st of that school year are required to attend school. If a child enters public school at age 6 without completing kindergarten, they will be placed in kindergarten. Children who have attained the age of 5 on or before September 1 of the school year are eligible for admission to public kindergarten during that school year based on rules prescribed by the school board. Statewide, students are retained after Grade 3 if they do not pass the state reading assessment. Otherwise, policies for promotion and retention are determined by districts, based on academic performance.

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Country's Name for Fourth Year of Formal Schooling*	Average Age at Time of Testing	Information About Age of Entry, Promotion, and Retention
Botswana	Standard 4	10.6	Children must be 6 years old by the end of June to begin school in the January of the same calendar year, but children from remote areas may begin school later than age 6. There is up to 12.5% retention in each class and accelerated progression is possible after parent consultation.
Colombia	Grade 4	10.4	Children must be at least 6 years old to begin school, although some students start school somewhat older. Schools define promotion and retention policies.
South Africa	Grade 4	10.5	Children must be 6 years old by June 30th of the year in which they enroll and children are encouraged to begin at age 7. The age of entry policy has been revised within the past ten years. In principle, students should progress with their age cohort. The norm for repetition is one year per school phase where necessary.

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-level Exclusions	Within-sample Exclusions	Overall Exclusions
Australia	100%		2.1%	2.3%	4.4%
Austria	100%		1.3%	3.8%	5.1%
<sup>2 a</sup> Azerbaijan	100%		2.3%	4.9%	7.2%
<sup>2</sup> Belgium (French)	100%		3.5%	2.1%	5.6%
Bulgaria	100%		1.2%	1.3%	2.5%
<sup>2</sup> Canada	100%		4.1%	5.8%	9.9%
Chinese Taipei	100%		0.1%	1.4%	1.4%
Colombia	100%		1.2%	0.3%	1.5%
<sup>2</sup> Croatia	100%		2.9%	5.0%	7.9%
Czech Republic	100%		4.1%	0.9%	5.1%
<sup>2</sup> Denmark	100%		1.6%	5.8%	7.3%
England	100%		1.7%	0.8%	2.4%
Finland	100%		1.6%	1.5%	3.1%
France	100%		4.9%	0.3%	5.2%
<sup>1 a</sup> Georgia	92%	Students taught in Georgian	1.4%	3.5%	4.9%
Germany	100%		0.9%	1.0%	1.9%
<sup>3</sup> Hong Kong SAR	100%		9.1%	2.7%	11.8%
Hungary	100%		2.2%	2.0%	4.2%
Indonesia	100%		2.4%	0.0%	2.5%
Iran, Islamic Rep. Of	100%		4.4%	0.1%	4.5%
Ireland	100%		1.6%	0.9%	2.5%
<sup>3</sup> Israel	100%		18.5%	6.0%	24.6%
Italy	100%		0.0%	3.7%	3.7%
<sup>1 2</sup> Lithuania	93%	Students taught in Lithuanian	1.9%	3.7%	5.6%
Malta	100%		0.0%	3.6%	3.6%
Morocco	100%		2.0%	0.0%	2.0%
Netherlands	100%		3.7%	0.0%	3.7%
New Zealand	100%		1.3%	2.0%	3.3%
Northern Ireland	100%		2.6%	0.9%	3.5%
Norway	100%		0.9%	3.3%	4.2%
Oman	100%		0.8%	0.7%	1.5%
Poland	100%		2.3%	1.5%	3.8%
Portugal	100%		1.4%	1.1%	2.5%
<sup>2</sup> Qatar	100%		4.3%	1.9%	6.2%
Romania	100%		1.1%	2.9%	4.0%
Russian Federation	100%		2.9%	2.4%	5.3%
Saudi Arabia	100%		1.4%	0.2%	1.6%
<sup>2</sup> Singapore	100%		5.9%	0.4%	6.3%
Slovak Republic	100%		3.8%	0.8%	4.6%
Slovenia	100%		2.3%	0.3%	2.6%
Spain	100%		1.6%	3.7%	5.4%
Sweden	100%		1.9%	2.2%	4.1%
Trinidad and Tobago	100%		0.9%	0.0%	0.9%
United Arab Emirates	100%		1.4%	1.8%	3.3%
<sup>2</sup> United States	100%		0.0%	7.2%	7.2%

<sup>1</sup> National Target Population does not include all of the International Target Population.

<sup>2</sup> National Defined Population covers 90% to 95% of National Target Population.

<sup>3</sup> National Defined Population covers less than 90% of National Target Population.

<sup>a</sup> Exclusion rates for Azerbaijan and Georgia are slightly underestimated as some conflict zones were not covered and no official statistics were available.

**Appendix C.2: Coverage of PIRLS 2011 Target Population (Continued)**

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-level Exclusions	Within-sample Exclusions	Overall Exclusions
<b>Sixth Grade Participants</b>					
Botswana	100%		0.1%	0.2%	0.3%
<sup>0</sup> Honduras	100%		3.8%	0.7%	4.5%
<sup>1</sup> Kuwait	78%	Students in public schools	0.3%	0.2%	0.5%
Morocco	100%		2.0%	0.0%	2.0%
<b>Benchmarking Participants<sup>0</sup></b>					
<sup>2</sup> Alberta, Canada	100%		1.5%	5.4%	6.8%
<sup>2</sup> Ontario, Canada	100%		1.0%	7.0%	7.9%
Quebec, Canada	100%		2.7%	1.0%	3.7%
Maltese - Malta	100%		0.0%	4.1%	4.1%
Eng/Afr (5) - RSA	100%	Students taught in Afrikaans and/or English schools	1.9%	0.0%	1.9%
Andalusia, Spain	100%		1.6%	3.5%	5.1%
Abu Dhabi, UAE	100%		1.4%	1.3%	2.7%
Dubai, UAE	100%		0.4%	4.7%	5.1%
<sup>1 3</sup> Florida, US	89%	Students in public schools	0.0%	12.9%	12.9%

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>0</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-level Exclusions	Within-sample Exclusions	Overall Exclusions
Botswana	100%		0.1%	0.1%	0.2%
Colombia	100%		1.2%	0.3%	1.5%
South Africa	100%		2.1%	0.9%	3.0%

**Appendix C.3: School Sample Sizes**

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
Australia	290	284	275	5	280
Austria	160	158	158	0	158
Azerbaijan	170	169	142	27	169
Belgium (French)	150	150	115	12	127
Bulgaria	150	147	142	5	147
Canada	1,142	1,125	1,106	5	1,111
Chinese Taipei	150	150	150	0	150
Colombia	157	152	131	19	150
Croatia	152	152	150	2	152
Czech Republic	180	178	161	16	177
Denmark	240	236	207	25	232
England	150	148	109	20	129
Finland	150	146	141	4	145
France	175	175	170	4	174
Georgia	180	177	172	1	173
Germany	200	199	190	7	197
Hong Kong SAR	154	150	130	2	132
Hungary	150	150	146	3	149
Indonesia	158	158	158	0	158
Iran, Islamic Rep. Of	250	244	244	0	244
Ireland	152	151	148	3	151
Israel	153	153	150	2	152
Italy	205	205	166	36	202
Lithuania	160	154	145	9	154
Malta	99	96	96	0	96
Morocco	289	287	284	0	284
Netherlands	151	151	97	41	138
New Zealand	201	199	180	12	192
Northern Ireland	160	160	100	36	136
Norway	150	145	85	35	120
Oman	338	333	327	0	327
Poland	150	150	150	0	150
Portugal	150	150	133	15	148
Qatar	175	167	166	0	166
Romania	150	148	147	1	148
Russian Federation	202	202	202	0	202
Saudi Arabia	175	171	163	8	171
Singapore	176	176	176	0	176
Slovak Republic	200	198	187	10	197
Slovenia	202	201	193	2	195
Spain	314	314	308	4	312
Sweden	161	153	148	4	152
Trinidad and Tobago	150	150	149	0	149
United Arab Emirates	478	460	458	0	458
United States	450	437	349	21	370

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Appendix C.3: School Sample Sizes (Continued)**

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
<b>Sixth Grade Participants</b>					
Botswana	150	149	149	0	149
Honduras	152	147	133	14	147
Kuwait	150	150	133	0	133
Morocco	289	281	278	0	278
<b>Benchmarking Participants<sup>◇</sup></b>					
Alberta, Canada	150	147	143	2	145
Ontario, Canada	200	191	188	1	189
Quebec, Canada	200	197	189	1	190
Maltese - Malta	99	95	95	0	95
Eng/Afr (5) - RSA	100	92	90	2	92
Andalusia, Spain	150	150	149	0	149
Abu Dhabi, UAE	168	165	164	0	164
Dubai, UAE	152	139	138	0	138
Florida, US	81	80	77	0	77

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
Botswana	150	149	149	0	149
Colombia	157	152	131	19	150
South Africa	345	342	336	5	341

Country	Within-school Student Participation (Weighted Percentage)	Number of Sampled Students in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
Australia	95%	6,709	103	122	6,484	358	6,126
Austria	98%	4,976	25	175	4,776	106	4,670
Azerbaijan	100%	5,098	206	0	4,892	11	4,881
Belgium (French)	97%	3,910	13	63	3,834	107	3,727
Bulgaria	95%	5,725	120	59	5,546	285	5,261
Canada	96%	25,707	292	1,057	24,358	1,152	23,206
Chinese Taipei	99%	4,376	18	35	4,323	30	4,293
Colombia	97%	4,309	201	18	4,090	124	3,966
Croatia	95%	5,097	27	245	4,825	238	4,587
Czech Republic	94%	4,895	28	35	4,832	276	4,556
Denmark	97%	4,994	50	185	4,759	165	4,594
England	94%	4,243	52	27	4,164	237	3,927
Finland	96%	4,914	23	53	4,838	198	4,640
France	98%	4,638	73	15	4,550	112	4,438
Georgia	98%	4,958	23	56	4,879	83	4,796
Germany	96%	4,229	37	21	4,171	171	4,000
Hong Kong SAR	94%	4,189	21	63	4,105	230	3,875
Hungary	97%	5,488	40	67	5,381	177	5,204
Indonesia	97%	5,049	115	1	4,933	142	4,791
Iran, Islamic Rep. Of	99%	5,932	98	5	5,829	71	5,758
Ireland	95%	4,849	24	43	4,782	258	4,524
Israel	94%	4,579	16	91	4,472	286	4,186
Italy	96%	4,529	26	153	4,350	161	4,189
Lithuania	94%	5,140	37	131	4,972	311	4,661
Malta	95%	3,958	24	142	3,792	194	3,598
Morocco	96%	8,381	271	0	8,110	305	7,805
Netherlands	97%	4,179	51	1	4,127	132	3,995
New Zealand	94%	6,192	127	77	5,988	344	5,644
Northern Ireland	93%	3,942	27	49	3,866	280	3,586
Norway	86%	3,921	21	122	3,778	588	3,190
Oman	98%	10,840	129	75	10,636	242	10,394
Poland	96%	5,316	15	71	5,230	225	5,005
Portugal	95%	4,428	18	64	4,346	261	4,085
Qatar	99%	4,394	178	70	4,146	26	4,120
Romania	97%	4,879	91	12	4,776	111	4,665
Russian Federation	98%	4,693	30	89	4,574	113	4,461
Saudi Arabia	98%	4,625	42	4	4,579	72	4,507
Singapore	96%	6,687	33	3	6,651	284	6,367
Slovak Republic	97%	5,933	45	46	5,842	212	5,630
Slovenia	97%	4,674	13	14	4,647	135	4,512
Spain	97%	9,223	43	305	8,875	295	8,580
Sweden	92%	5,209	75	84	5,050	428	4,622
Trinidad and Tobago	96%	4,190	67	0	4,123	175	3,948
United Arab Emirates	97%	15,372	134	113	15,125	507	14,618
United States	96%	14,253	169	830	13,254	528	12,726

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Students attending a sampled class at the time the sample was chosen but leaving the class before the assessment was administered were classified as “withdrawn.”

Students with a disability or language barrier that prevented them from participating in the assessment were classified as “excluded.”

Students not present when the assessment was administered, and not subsequently assessed in a make-up session, were classified as “absent.”



**Appendix C.4: Student Sample Sizes (Continued)**

Country	Within-school Student Participation (Weighted Percentage)	Number of Sampled Students in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
<b>Sixth Grade Participants</b>							
Botswana	99%	4,298	39	8	4,251	54	4,197
Honduras	97%	4,186	117	0	4,069	176	3,893
Kuwait	82%	4,085	0	0	4,085	722	3,363
Morocco	95%	7,705	106	0	7,599	416	7,183
<b>Benchmarking Participants<sup>◇</sup></b>							
Alberta, Canada	95%	4,292	73	229	3,990	201	3,789
Ontario, Canada	96%	4,932	69	145	4,718	157	4,561
Quebec, Canada	96%	4,529	33	50	4,446	202	4,244
Maltese - Malta	94%	3,942	22	143	3,777	229	3,548
Eng/Afr (5) - RSA	94%	3,801	68	0	3,733	218	3,515
Andalusia, Spain	97%	4,652	29	142	4,481	148	4,333
Abu Dhabi, UAE	97%	4,308	13	29	4,266	120	4,146
Dubai, UAE	96%	6,497	70	74	6,353	292	6,061
Florida, US	95%	3,052	43	269	2,740	142	2,598

<sup>◇</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Within-school Student Participation (Weighted Percentage)	Number of Sampled Students in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
Botswana	99%	4,501	41	6	4,454	61	4,393
Colombia	97%	4,309	198	18	4,093	129	3,964
South Africa	95%	16,970	283	165	16,522	778	15,744

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Australia	96%	98%	100%	95%	91%	93%
Austria	100%	100%	100%	98%	98%	98%
Azerbaijan	84%	100%	100%	100%	84%	100%
† Belgium (French)	77%	85%	99%	97%	74%	82%
Bulgaria	97%	100%	100%	95%	92%	95%
Canada	98%	98%	100%	96%	94%	94%
Chinese Taipei	100%	100%	100%	99%	99%	99%
Colombia	89%	99%	100%	97%	86%	95%
Croatia	99%	100%	100%	95%	94%	95%
Czech Republic	90%	99%	100%	94%	85%	94%
Denmark	87%	98%	100%	97%	84%	95%
† England	73%	87%	100%	94%	69%	82%
Finland	97%	99%	100%	96%	93%	95%
France	98%	100%	100%	98%	96%	97%
Georgia	97%	98%	100%	98%	95%	96%
Germany	96%	99%	100%	96%	92%	95%
Hong Kong SAR	86%	88%	100%	94%	81%	83%
Hungary	98%	99%	100%	97%	94%	96%
Indonesia	100%	100%	100%	97%	97%	97%
Iran, Islamic Rep. Of	100%	100%	100%	99%	99%	99%
Ireland	98%	100%	100%	95%	93%	95%
Israel	98%	99%	100%	94%	92%	93%
Italy	81%	98%	100%	96%	78%	95%
Lithuania	94%	100%	100%	94%	89%	94%
Malta	100%	100%	100%	95%	95%	95%
Morocco	99%	99%	100%	96%	95%	95%
† Netherlands	68%	92%	100%	97%	66%	89%
New Zealand	93%	99%	100%	94%	87%	93%
† Northern Ireland	62%	85%	100%	93%	58%	79%
‡ Norway	57%	83%	100%	86%	49%	71%
Oman	98%	98%	100%	98%	96%	96%
Poland	100%	100%	100%	96%	96%	96%
Portugal	87%	99%	100%	95%	83%	93%
Qatar	100%	100%	100%	99%	99%	99%
Romania	99%	100%	100%	97%	96%	97%
Russian Federation	100%	100%	100%	98%	98%	98%
Saudi Arabia	95%	100%	100%	98%	94%	98%
Singapore	100%	100%	100%	96%	96%	96%
Slovak Republic	95%	99%	100%	97%	92%	96%
Slovenia	96%	97%	100%	97%	94%	95%
Spain	96%	99%	100%	97%	93%	96%
Sweden	97%	99%	100%	92%	88%	91%
Trinidad and Tobago	99%	99%	100%	96%	95%	95%
United Arab Emirates	100%	100%	100%	97%	97%	97%
United States	80%	85%	100%	96%	77%	81%

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

PIRLS guidelines for sampling participation: The minimum acceptable participation rates were 85% of both schools and students, or a combined rate (the product of school and student participation) of 75%. Participants not meeting these guidelines were annotated as follows:

† Met guidelines for sample participation rates only after replacement schools were included.

‡ Nearly satisfied guidelines for sample participation rates after replacement schools were included.

‡ Did not satisfy guidelines for sample participation rates.

**Appendix C.5: Participation Rates (Weighted) (Continued)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
<b>Sixth Grade Participants</b>						
Botswana	100%	100%	100%	99%	99%	99%
Honduras	91%	100%	100%	97%	88%	97%
‡ Kuwait	88%	88%	99%	82%	72%	72%
Morocco	99%	99%	100%	95%	94%	94%
<b>Benchmarking Participants<sup>⊙</sup></b>						
Alberta, Canada	97%	99%	100%	95%	93%	94%
Ontario, Canada	99%	99%	100%	96%	95%	95%
Quebec, Canada	95%	96%	100%	96%	90%	92%
Maltese - Malta	100%	100%	100%	94%	94%	94%
Eng/Afr (5) - RSA	98%	100%	100%	94%	92%	94%
Andalusia, Spain	99%	99%	100%	97%	96%	96%
Abu Dhabi, UAE	99%	99%	100%	97%	96%	96%
Dubai, UAE	99%	99%	100%	96%	94%	94%
Florida, US	96%	96%	99%	95%	91%	91%

<sup>⊙</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Botswana	100%	100%	100%	99%	99%	99%
Colombia	89%	99%	100%	97%	86%	96%
South Africa	98%	99%	100%	95%	93%	95%

Country	Years of Formal Schooling*			Average Age at Time of Testing			Overall Exclusion Rates			Overall Participation Rates (After Replacement)		
	2011	2006	2001	2011	2006	2001	2011	2006	2001	2011	2006	2001
Austria	4	4		10.3	10.3		5.1%	5.1%		98%	97%	
Belgium (French)	4	4		10.1	9.9		5.6%	3.9%		82%	95%	
Bulgaria	4	4	4	10.7	10.9	10.9	2.5%	6.4%	2.7%	95%	94%	93%
Chinese Taipei	4	4		10.2	10.1		1.4%	2.9%		99%	99%	
Colombia	4		4	10.4		10.5	1.5%		3.3%	95%		94%
Czech Republic	4		4	10.4		10.5	5.1%		5.0%	94%		90%
Denmark	4	4		10.9	10.9		7.3%	6.2%		95%	96%	
England	5	5	5	10.3	10.3	10.2	2.4%	2.4%	5.7%	82%	92%	82%
France	4	4	4	10.0	10.0	10.1	5.2%	3.8%	5.3%	97%	95%	94%
<sup>a</sup> Georgia	4	4		10.0	10.1		4.9%	7.3%		96%	98%	
Germany	4	4	4	10.4	10.5	10.5	1.9%	0.7%	1.8%	95%	92%	86%
Hong Kong SAR	4	4	4	10.1	10.0	10.2	11.8%	3.9%	2.8%	83%	97%	97%
Hungary	4	4	4	10.7	10.7	10.7	4.2%	3.7%	2.1%	96%	97%	95%
Indonesia	4	4		10.4	10.4		2.5%	3.2%		97%	98%	
Iran, Islamic Rep. of	4	4	4	10.2	10.2	10.4	4.5%	3.8%	0.5%	99%	99%	98%
Italy	4	4	4	9.7	9.7	9.8	3.7%	5.3%	2.9%	95%	97%	98%
Lithuania	4	4	4	10.7	10.7	10.9	5.6%	5.1%	3.8%	94%	92%	83%
Morocco	4	4	4	10.5	10.8	11.2	2.0%	1.1%	1.0%	95%	94%	69%
Netherlands	4	4	4	10.2	10.3	10.3	3.7%	3.6%	3.7%	89%	90%	87%
New Zealand	4.5 – 5.5	4.5 – 5.5	4.5 – 5.5	10.1	10.0	10.1	3.3%	5.3%	3.2%	93%	95%	96%
Norway	4	4	4	9.7	9.8	10.0	4.2%	3.8%	2.8%	71%	71%	82%
Poland	4	4		9.9	9.9		3.8%	5.1%		96%	95%	
Romania	4	4	4	10.9	10.9	11.1	4.0%	2.4%	4.5%	97%	97%	93%
Russian Federation	4	3 or 4	3 or 4	10.8	10.8	10.3	5.3%	5.9%	6.6%	98%	97%	97%
Singapore	4	4	4	10.4	10.4	10.1	6.3%	0.9%	0.1%	96%	95%	98%
Slovak Republic	4	4	4	10.4	10.4	10.3	4.6%	3.6%	2.0%	96%	94%	96%
Slovenia	4	3 or 4	3	9.9	9.9	9.8	2.6%	0.8%	0.3%	94%	93%	94%
Spain	4	4		9.8	9.9		5.4%	5.3%		96%	97%	
Sweden	4	4	4	10.7	10.9	10.8	4.1%	3.9%	5.0%	91%	96%	92%
Trinidad and Tobago	5	5		10.3	10.1		0.9%	0.7%		95%	94%	
United States	4	4	4	10.2	10.1	10.2	7.2%	5.9%	5.3%	81%	82%	83%

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Benchmarking Participants<sup>‡</sup>**

Alberta, Canada	4	4		9.9	9.9		6.8%	7.1%		94%	96%	
Ontario, Canada	4	4	4	9.8	9.8	9.9	7.9%	8.3%	6.6%	95%	87%	92%
Quebec, Canada	4	4	4	10.1	10.1	10.2	3.7%	3.6%	3.3%	92%	81%	89%
<sup>b</sup> Eng/Afr (5) - RSA	5	5		11.4	11.9		1.9%	4.3%		94%	88%	

<sup>‡</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

\* Represents years of schooling counting from the first year of ISCED Level 1

<sup>a</sup> Schools in South Ossetia and Abkhazia were excluded due to lack of access and absence of official statistics. Abkhazia refugee schools in other territories of Georgia were included in the sample frame.

<sup>b</sup> Information from 2006 is for the entire country of South Africa.





# Appendix D

## Percentage of Students with Achievement Too Low for Estimation

Country	Percentage of Students with Achievement Too Low for Estimation	Average Percent Correct
Australia	2 (0.2)	58 (0.6)
Austria	1 (0.1)	57 (0.5)
Azerbaijan	3 (0.4)	41 (0.7)
Belgium (French)	1 (0.3)	51 (0.8)
Bulgaria	2 (0.4)	59 (1.0)
Canada	1 (0.1)	63 (0.4)
Chinese Taipei	1 (0.1)	65 (0.5)
Colombia	7 (0.8)	37 (1.0)
Croatia	0 (0.1)	65 (0.4)
Czech Republic	0 (0.1)	63 (0.5)
Denmark	0 (0.1)	65 (0.4)
England	2 (0.3)	64 (0.6)
Finland	0 (0.1)	68 (0.5)
France	1 (0.3)	55 (0.7)
Georgia	3 (0.4)	48 (0.7)
Germany	1 (0.2)	61 (0.6)
Hong Kong SAR	0 (0.1)	69 (0.6)
Hungary	2 (0.3)	61 (0.7)
Indonesia	7 (0.9)	33 (0.8)
Iran, Islamic Rep. of	6 (0.5)	40 (0.6)
Ireland	1 (0.2)	64 (0.6)
Israel	2 (0.3)	61 (0.7)
Italy	1 (0.1)	62 (0.5)
Lithuania	1 (0.2)	58 (0.5)
Malta	6 (0.4)	46 (0.3)
* Morocco	33 (1.1)	18 (0.4)
Netherlands	0 (0.0)	63 (0.6)
New Zealand	2 (0.2)	59 (0.5)
Northern Ireland	1 (0.1)	66 (0.6)
Norway	1 (0.2)	51 (0.5)
<sup>ψ</sup> Oman	16 (0.6)	28 (0.4)
Poland	1 (0.2)	57 (0.5)
Portugal	1 (0.2)	61 (0.7)
Qatar	11 (0.7)	35 (0.8)
Romania	4 (0.7)	52 (1.0)
Russian Federation	0 (0.1)	68 (0.7)
Saudi Arabia	9 (0.7)	34 (0.8)
Singapore	1 (0.1)	68 (0.8)
Slovak Republic	1 (0.3)	60 (0.7)
Slovenia	1 (0.2)	58 (0.5)
Spain	1 (0.2)	54 (0.6)
Sweden	1 (0.2)	61 (0.6)
Trinidad and Tobago	5 (0.6)	44 (0.9)
United Arab Emirates	10 (0.4)	37 (0.4)
United States	1 (0.1)	65 (0.4)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

- \* Students were considered to have achievement too low for estimation if their performance on the assessment was no better than could be achieved by simply guessing on the multiple choice assessment items. However, such students were assigned scale scores (plausible values) by the achievement scaling procedure, despite concerns about their reliability.
- ✱ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.
- <sup>ψ</sup> Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.
- ( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.



**Appendix D.1: Percentage of Students with Achievement Too Low for Estimation\*  
(Continued)**

Country	Percentage of Students with Achievement Too Low for Estimation	Average Percent Correct
<b>Sixth Grade Participants</b>		
Botswana	9 (0.6)	32 (0.9)
Honduras	7 (0.8)	38 (1.1)
Kuwait	12 (1.1)	35 (0.8)
Morocco	10 (0.7)	33 (0.7)
<b>Benchmarking Participants<sup>‡</sup></b>		
Alberta, Canada	1 (0.2)	63 (0.8)
Ontario, Canada	1 (0.1)	64 (0.6)
Quebec, Canada	0 (0.1)	60 (0.6)
Maltese - Malta	6 (0.4)	40 (0.3)
<sup>ψ</sup> Eng/Afr (5) - RSA	16 (1.7)	35 (1.4)
Andalusia, Spain	1 (0.2)	54 (0.6)
Abu Dhabi, UAE	11 (0.8)	34 (0.9)
Dubai, UAE	7 (0.5)	46 (0.4)
Florida, US	1 (0.2)	68 (0.7)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

<sup>‡</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Percentage of Students with Achievement Too Low for Estimation	Average Percent Correct
Botswana	10 (0.6)	36 (0.9)
Colombia	1 (0.3)	66 (1.0)
South Africa	14 (0.8)	36 (0.9)



# Appendix E

## Average Percent Correct in the Reading Purposes and Processes

Country	Overall Reading	Purposes		Processes	
		Literary	Informational	Retrieval and Straightforward Inferencing	Interpreting, Integrating, and Evaluating
Australia	58 (0.6)	62 (0.6)	53 (0.6)	67 (0.6)	48 (0.6)
Austria	57 (0.5)	63 (0.5)	52 (0.6)	70 (0.5)	45 (0.6)
Azerbaijan	41 (0.7)	44 (0.7)	37 (0.8)	54 (0.8)	28 (0.6)
Belgium (French)	51 (0.8)	56 (0.8)	46 (0.8)	64 (0.8)	39 (0.8)
Bulgaria	59 (1.0)	63 (1.1)	54 (1.0)	69 (1.0)	49 (1.1)
Canada	63 (0.4)	69 (0.4)	58 (0.4)	72 (0.4)	55 (0.5)
Chinese Taipei	65 (0.5)	66 (0.6)	63 (0.5)	74 (0.4)	55 (0.5)
Colombia	37 (1.0)	42 (1.1)	32 (1.0)	48 (1.0)	27 (0.9)
Croatia	65 (0.4)	70 (0.5)	59 (0.5)	75 (0.4)	55 (0.5)
Czech Republic	63 (0.5)	67 (0.6)	57 (0.6)	73 (0.5)	52 (0.6)
Denmark	65 (0.4)	69 (0.5)	60 (0.5)	75 (0.4)	55 (0.5)
England	64 (0.6)	68 (0.7)	59 (0.7)	72 (0.6)	56 (0.7)
Finland	68 (0.5)	72 (0.5)	63 (0.5)	78 (0.4)	59 (0.5)
France	55 (0.7)	60 (0.7)	50 (0.7)	68 (0.7)	43 (0.7)
Georgia	48 (0.7)	54 (0.8)	41 (0.7)	57 (0.7)	38 (0.7)
Germany	61 (0.6)	66 (0.6)	55 (0.6)	73 (0.6)	49 (0.6)
Hong Kong SAR	69 (0.6)	72 (0.6)	66 (0.6)	76 (0.5)	62 (0.7)
Hungary	61 (0.7)	66 (0.8)	56 (0.7)	70 (0.7)	52 (0.8)
Indonesia	33 (0.8)	34 (0.9)	32 (0.8)	43 (0.9)	23 (0.8)
Iran, Islamic Rep. of	40 (0.6)	45 (0.7)	35 (0.6)	51 (0.7)	29 (0.6)
Ireland	64 (0.6)	69 (0.7)	59 (0.6)	73 (0.5)	55 (0.6)
Israel	61 (0.7)	66 (0.7)	56 (0.7)	70 (0.6)	53 (0.7)
Italy	62 (0.5)	66 (0.6)	57 (0.6)	71 (0.5)	52 (0.6)
Lithuania	58 (0.5)	63 (0.5)	53 (0.6)	68 (0.5)	47 (0.6)
Malta	46 (0.3)	48 (0.5)	43 (0.4)	56 (0.4)	35 (0.3)
* Morocco	18 (0.4)	20 (0.5)	17 (0.4)	27 (0.5)	10 (0.3)
Netherlands	63 (0.6)	67 (0.6)	58 (0.6)	74 (0.5)	52 (0.6)
New Zealand	59 (0.5)	63 (0.5)	54 (0.5)	67 (0.4)	50 (0.5)
Northern Ireland	66 (0.6)	71 (0.7)	61 (0.6)	74 (0.5)	57 (0.7)
Norway	51 (0.5)	56 (0.6)	46 (0.6)	63 (0.5)	39 (0.6)
† Oman	28 (0.4)	29 (0.5)	27 (0.5)	37 (0.5)	19 (0.4)
Poland	57 (0.5)	62 (0.5)	51 (0.6)	67 (0.5)	47 (0.6)
Portugal	61 (0.7)	65 (0.7)	57 (0.7)	71 (0.6)	51 (0.8)
Qatar	35 (0.8)	36 (0.9)	34 (0.7)	44 (0.8)	26 (0.7)
Romania	52 (1.0)	56 (1.0)	47 (1.1)	61 (1.0)	42 (1.1)
Russian Federation	68 (0.7)	72 (0.7)	64 (0.7)	77 (0.6)	60 (0.8)
Saudi Arabia	34 (0.8)	36 (0.9)	33 (0.9)	45 (1.0)	24 (0.7)
Singapore	68 (0.8)	71 (0.8)	64 (0.8)	76 (0.7)	59 (0.9)
Slovak Republic	60 (0.7)	66 (0.7)	54 (0.8)	70 (0.7)	50 (0.7)
Slovenia	58 (0.5)	63 (0.5)	53 (0.5)	69 (0.4)	48 (0.5)
Spain	54 (0.6)	59 (0.6)	48 (0.6)	65 (0.5)	42 (0.7)
Sweden	61 (0.6)	67 (0.6)	55 (0.7)	72 (0.5)	51 (0.7)
Trinidad and Tobago	44 (0.9)	47 (1.0)	40 (0.9)	54 (0.9)	32 (0.9)
United Arab Emirates	37 (0.4)	38 (0.5)	37 (0.4)	47 (0.5)	28 (0.4)
United States	65 (0.4)	70 (0.5)	60 (0.4)	73 (0.4)	58 (0.4)
<b>International Avg.</b>	<b>55 (0.1)</b>	<b>59 (0.1)</b>	<b>50 (0.1)</b>	<b>64 (0.1)</b>	<b>45 (0.1)</b>

\* Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.

† Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

**Appendix E.1: Average Percent Correct in the Reading Purposes and Processes (Continued)** **PIRLS 2011** **4<sup>th</sup> Grade**

Country	Overall Reading	Purposes		Processes	
		Literary	Informational	Retrieval and Straightforward Inferencing	Interpreting, Integrating, and Evaluating
<b>Sixth Grade Participants</b>					
Botswana	32 (0.9)	30 (1.0)	35 (0.9)	42 (1.0)	23 (0.9)
Honduras	38 (1.1)	42 (1.3)	33 (0.9)	48 (1.2)	27 (1.0)
Kuwait	35 (0.8)	38 (0.9)	33 (0.8)	45 (0.9)	26 (0.7)
Morocco	33 (0.7)	35 (0.8)	32 (0.7)	45 (0.9)	22 (0.6)
<b>Benchmarking Participants<sup>‡</sup></b>					
Alberta, Canada	63 (0.8)	68 (0.9)	58 (0.8)	72 (0.8)	55 (0.8)
Ontario, Canada	64 (0.6)	70 (0.6)	58 (0.8)	72 (0.6)	57 (0.7)
Quebec, Canada	60 (0.6)	65 (0.6)	55 (0.7)	71 (0.5)	50 (0.6)
Maltese - Malta	40 (0.3)	45 (0.4)	36 (0.4)	52 (0.4)	29 (0.3)
<sup>‡</sup> Eng/Afr (5) - RSA	35 (1.4)	37 (1.6)	33 (1.3)	43 (1.6)	26 (1.3)
Andalusia, Spain	54 (0.6)	59 (0.6)	48 (0.6)	66 (0.6)	42 (0.6)
Abu Dhabi, UAE	34 (0.9)	35 (1.1)	34 (0.9)	43 (1.0)	25 (0.9)
Dubai, UAE	46 (0.4)	47 (0.5)	45 (0.5)	56 (0.5)	36 (0.4)
Florida, US	68 (0.7)	74 (0.7)	63 (0.8)	76 (0.6)	61 (0.8)

<sup>‡</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**prePIRLS 2011** **4<sup>th</sup> Grade**

Country	Overall Reading	Purposes		Processes	
		Literary	Informational	Retrieving	Inferencing and Integrating
Botswana	36 (0.9)	37 (0.9)	36 (0.9)	43 (1.0)	31 (0.9)
Colombia	66 (1.0)	68 (0.9)	65 (1.1)	75 (0.9)	59 (1.1)
South Africa	36 (0.9)	38 (1.0)	34 (0.9)	43 (1.0)	31 (0.8)



# Appendix F

## Percentiles and Standard Deviations of Reading Achievement

Country	5th Percentile	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile	95th Percentile
Australia	383 (4.5)	418 (3.4)	477 (2.5)	534 (2.8)	583 (2.4)	625 (1.6)	648 (3.1)
Austria	418 (3.5)	444 (3.2)	487 (2.0)	533 (3.1)	573 (1.6)	607 (4.3)	626 (3.7)
Azerbaijan	343 (5.5)	370 (5.2)	419 (5.0)	467 (3.6)	509 (3.0)	546 (3.3)	567 (4.2)
Belgium (French)	391 (7.9)	420 (4.7)	466 (3.9)	509 (2.8)	551 (2.0)	586 (3.7)	606 (3.5)
Bulgaria	382 (9.0)	420 (7.6)	482 (4.8)	541 (4.2)	589 (3.1)	629 (2.7)	652 (3.7)
Canada	429 (4.3)	458 (2.8)	504 (1.7)	551 (1.7)	596 (1.5)	634 (1.4)	658 (3.0)
Chinese Taipei	434 (4.3)	463 (3.7)	512 (3.4)	559 (1.8)	599 (1.6)	633 (3.2)	653 (6.0)
Colombia	315 (10.9)	343 (6.3)	393 (4.9)	449 (3.8)	503 (5.1)	549 (4.8)	575 (6.1)
Croatia	449 (6.3)	474 (3.1)	514 (3.2)	556 (2.2)	594 (2.1)	628 (3.2)	648 (3.7)
Czech Republic	434 (5.4)	463 (3.1)	509 (2.2)	550 (2.1)	587 (2.5)	619 (3.2)	639 (2.7)
Denmark	438 (3.8)	468 (2.9)	514 (2.0)	559 (1.7)	599 (1.6)	632 (1.6)	652 (3.7)
England	404 (8.7)	440 (5.8)	500 (4.0)	558 (3.0)	609 (2.4)	652 (2.9)	678 (4.7)
Finland	458 (3.4)	485 (3.4)	528 (2.5)	571 (3.7)	611 (2.0)	647 (1.9)	668 (2.4)
France	401 (5.5)	429 (4.9)	475 (3.9)	524 (2.2)	568 (1.9)	605 (2.9)	626 (3.9)
Georgia	353 (12.5)	385 (4.8)	438 (2.7)	494 (1.9)	541 (2.4)	580 (3.5)	603 (2.4)
Germany	425 (7.3)	455 (3.3)	499 (3.0)	544 (1.7)	586 (1.8)	623 (2.8)	646 (4.6)
Hong Kong SAR	460 (5.0)	492 (3.9)	534 (3.8)	576 (2.4)	612 (1.6)	643 (1.8)	662 (2.5)
Hungary	397 (10.2)	435 (6.0)	493 (3.1)	545 (2.4)	594 (2.8)	633 (2.7)	656 (3.2)
Indonesia	299 (8.1)	329 (7.4)	380 (4.8)	432 (5.4)	481 (6.4)	522 (3.3)	546 (5.2)
Iran, Islamic Rep. of	306 (3.8)	341 (4.8)	402 (3.8)	464 (5.4)	518 (3.1)	561 (3.1)	586 (2.7)
Ireland	417 (8.2)	452 (5.5)	506 (4.2)	555 (2.4)	603 (1.8)	643 (2.4)	665 (4.2)
Israel	383 (9.0)	425 (8.5)	490 (3.4)	549 (3.6)	600 (2.6)	643 (1.8)	670 (3.6)
Italy	427 (6.8)	456 (4.3)	500 (3.2)	544 (2.5)	586 (2.1)	623 (2.5)	645 (2.1)
Lithuania	412 (3.4)	440 (4.0)	487 (3.3)	532 (2.3)	574 (1.5)	609 (3.4)	630 (2.5)
Malta	303 (4.1)	340 (3.3)	412 (2.9)	487 (2.6)	546 (2.5)	594 (4.0)	620 (3.1)
Morocco	146 (7.6)	178 (4.3)	235 (4.9)	306 (4.5)	384 (4.9)	453 (7.5)	489 (4.8)
Netherlands	454 (3.1)	475 (2.6)	510 (3.5)	548 (2.0)	583 (1.8)	614 (1.4)	631 (2.4)
New Zealand	373 (3.4)	410 (3.5)	474 (3.0)	538 (2.1)	592 (4.5)	639 (3.7)	666 (4.6)
Northern Ireland	422 (6.3)	458 (9.3)	512 (2.1)	564 (2.6)	610 (2.4)	650 (3.7)	673 (3.2)
Norway	398 (4.4)	426 (3.6)	467 (2.9)	510 (3.1)	550 (2.5)	582 (2.7)	601 (3.4)
Oman	224 (6.8)	260 (3.9)	322 (3.5)	393 (3.4)	463 (3.7)	517 (2.7)	548 (4.5)
Poland	397 (5.3)	427 (3.8)	480 (3.1)	531 (2.4)	576 (2.6)	614 (1.8)	637 (4.2)
Portugal	425 (7.5)	454 (3.4)	499 (5.2)	546 (2.9)	586 (3.1)	623 (3.5)	643 (4.2)
Qatar	250 (4.5)	284 (4.5)	348 (3.8)	429 (4.7)	502 (4.6)	558 (4.2)	590 (5.0)
Romania	336 (6.7)	376 (12.1)	445 (8.8)	512 (5.2)	567 (5.3)	610 (4.4)	634 (4.9)
Russian Federation	455 (5.2)	482 (4.3)	526 (2.9)	571 (3.0)	614 (2.4)	649 (2.9)	672 (2.9)
Saudi Arabia	269 (7.8)	304 (9.1)	369 (6.7)	438 (6.2)	496 (2.7)	540 (4.8)	565 (5.3)
Singapore	421 (7.0)	459 (6.1)	519 (4.6)	573 (3.3)	623 (3.9)	665 (4.4)	687 (4.4)
Slovak Republic	408 (11.1)	444 (6.3)	495 (2.8)	541 (2.3)	582 (2.5)	618 (2.9)	638 (3.3)
Slovenia	405 (7.9)	436 (3.7)	487 (2.7)	535 (1.8)	579 (2.2)	616 (1.9)	637 (2.5)
Spain	393 (5.2)	422 (2.9)	469 (3.4)	518 (2.6)	561 (2.5)	597 (2.2)	618 (3.3)
Sweden	426 (3.5)	457 (4.2)	502 (3.2)	545 (3.0)	585 (2.4)	622 (2.2)	643 (3.3)
Trinidad and Tobago	320 (6.6)	352 (5.6)	410 (5.6)	474 (5.7)	534 (3.3)	583 (3.6)	610 (8.1)
United Arab Emirates	272 (4.1)	304 (2.7)	365 (3.4)	440 (2.8)	513 (2.1)	569 (2.5)	600 (3.0)
United States	428 (3.5)	458 (3.3)	510 (2.1)	560 (1.6)	607 (1.2)	648 (2.0)	671 (3.0)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.  
 Note: Percentiles are defined in terms of percentages of students at or below a point on the scale.



**Appendix F.1: Percentiles of Reading Achievement (Continued)**

Country	5th Percentile	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile	95th Percentile
<b>Sixth Grade Participants</b>							
Botswana	276 (3.5)	303 (4.4)	353 (3.3)	414 (5.2)	481 (6.0)	544 (9.2)	579 (9.1)
Honduras	315 (4.9)	346 (6.6)	396 (9.0)	452 (5.0)	503 (6.9)	552 (8.6)	578 (8.3)
Kuwait	230 (10.6)	270 (8.9)	340 (11.3)	427 (4.9)	501 (3.4)	555 (6.3)	585 (5.5)
Morocco	274 (8.9)	309 (6.2)	363 (5.2)	426 (5.6)	489 (4.4)	538 (3.8)	564 (3.5)
<b>Benchmarking Participants<sup>‡</sup></b>							
Alberta, Canada	423 (6.0)	454 (6.0)	504 (3.6)	552 (3.2)	596 (2.4)	635 (2.8)	658 (2.4)
Ontario, Canada	423 (2.8)	453 (3.3)	506 (2.6)	557 (2.4)	603 (2.7)	641 (3.7)	663 (3.5)
Quebec, Canada	434 (6.9)	459 (5.0)	498 (2.5)	539 (2.4)	579 (1.6)	614 (2.3)	634 (2.2)
Maltese - Malta	303 (4.5)	335 (2.7)	398 (3.5)	465 (2.2)	521 (2.5)	564 (2.5)	589 (4.6)
Eng/Afr (5) - RSA	231 (8.7)	266 (11.2)	334 (9.8)	423 (10.1)	504 (7.6)	572 (5.4)	611 (13.5)
Andalusia, Spain	400 (4.6)	428 (5.4)	472 (3.5)	518 (2.0)	561 (3.0)	597 (2.7)	618 (2.8)
Abu Dhabi, UAE	262 (5.4)	293 (4.2)	353 (7.2)	426 (6.4)	496 (5.0)	550 (7.1)	580 (7.4)
Dubai, UAE	294 (4.4)	330 (2.7)	402 (3.3)	486 (4.0)	553 (2.2)	604 (2.9)	633 (4.7)
Florida, US	447 (12.2)	479 (4.0)	523 (3.5)	570 (2.8)	618 (3.3)	660 (3.7)	685 (5.7)

<sup>‡</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	5th Percentile	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile	95th Percentile
Botswana	328 (5.0)	355 (2.6)	406 (4.3)	461 (3.5)	517 (5.1)	574 (6.4)	611 (8.2)
Colombia	460 (8.0)	489 (6.3)	534 (5.0)	579 (4.8)	622 (3.0)	659 (4.7)	680 (5.4)
South Africa	310 (3.8)	336 (3.3)	389 (4.1)	454 (4.1)	525 (5.7)	596 (7.9)	637 (8.6)

Country	Overall		Girls		Boys	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Australia	527 (2.2)	80 (1.3)	536 (2.7)	78 (1.6)	519 (2.7)	81 (1.8)
Austria	529 (2.0)	63 (1.0)	533 (2.2)	62 (1.2)	525 (2.3)	64 (1.5)
Azerbaijan	462 (3.3)	68 (1.7)	470 (3.6)	67 (1.9)	456 (3.5)	68 (1.8)
Belgium (French)	506 (2.9)	65 (1.6)	509 (3.1)	63 (2.0)	504 (3.1)	66 (1.6)
Bulgaria	532 (4.1)	82 (2.6)	539 (4.5)	82 (3.1)	524 (4.3)	82 (2.9)
Canada	548 (1.6)	69 (0.9)	553 (1.9)	68 (1.4)	542 (2.1)	70 (1.2)
Chinese Taipei	553 (1.9)	67 (1.2)	561 (2.1)	66 (1.7)	546 (2.1)	67 (1.3)
Colombia	448 (4.1)	79 (2.1)	447 (4.6)	78 (2.4)	448 (4.6)	80 (2.5)
Croatia	553 (1.9)	60 (0.9)	560 (2.1)	58 (1.2)	546 (2.2)	62 (1.2)
Czech Republic	545 (2.2)	61 (1.4)	549 (2.5)	60 (1.7)	542 (2.5)	63 (1.9)
Denmark	554 (1.7)	64 (0.9)	560 (1.9)	63 (1.2)	548 (2.1)	65 (1.2)
England	552 (2.6)	82 (1.4)	563 (3.0)	81 (1.9)	540 (3.1)	82 (1.6)
Finland	568 (1.9)	64 (1.0)	578 (2.3)	62 (1.5)	558 (2.2)	63 (1.3)
France	520 (2.6)	68 (1.3)	522 (3.4)	68 (1.8)	518 (2.4)	68 (1.3)
Georgia	488 (3.1)	76 (1.7)	499 (2.7)	73 (1.8)	477 (4.0)	77 (2.1)
Germany	541 (2.2)	66 (1.3)	545 (2.3)	66 (1.9)	537 (2.7)	67 (1.8)
Hong Kong SAR	571 (2.3)	61 (1.3)	579 (2.3)	57 (1.5)	563 (2.5)	62 (1.6)
Hungary	539 (2.9)	78 (2.1)	547 (3.2)	76 (2.3)	532 (3.2)	80 (2.6)
Indonesia	428 (4.2)	75 (2.2)	437 (4.5)	74 (2.1)	419 (4.3)	75 (2.7)
Iran, Islamic Rep. of	457 (2.8)	85 (1.5)	467 (4.3)	84 (2.3)	448 (4.3)	86 (2.0)
Ireland	552 (2.3)	75 (1.4)	559 (2.9)	72 (2.2)	544 (3.0)	76 (2.1)
Israel	541 (2.7)	86 (2.1)	544 (3.1)	82 (2.2)	538 (3.4)	90 (2.8)
Italy	541 (2.2)	66 (1.3)	543 (2.4)	65 (1.3)	540 (2.7)	67 (1.6)
Lithuania	528 (2.0)	66 (1.2)	537 (2.4)	64 (1.9)	520 (2.4)	67 (1.7)
Malta	477 (1.4)	97 (1.1)	486 (1.9)	93 (1.6)	468 (2.0)	99 (1.8)
Morocco	310 (3.9)	105 (2.0)	326 (4.0)	101 (2.4)	296 (4.6)	106 (2.3)
Netherlands	546 (1.9)	54 (0.9)	549 (2.1)	53 (1.0)	543 (2.2)	54 (1.2)
New Zealand	531 (1.9)	88 (1.2)	541 (2.2)	85 (1.4)	521 (2.7)	90 (2.0)
Northern Ireland	558 (2.4)	76 (1.3)	567 (2.5)	74 (1.9)	550 (3.2)	77 (1.6)
Norway	507 (1.9)	61 (0.9)	514 (2.2)	60 (1.1)	500 (2.7)	63 (1.5)
Oman	391 (2.8)	99 (1.5)	411 (3.0)	91 (1.7)	371 (3.4)	102 (1.9)
Poland	526 (2.1)	73 (1.1)	533 (2.5)	71 (1.8)	519 (2.7)	74 (1.3)
Portugal	541 (2.6)	66 (1.4)	548 (3.0)	63 (1.4)	534 (2.8)	68 (2.0)
Qatar	425 (3.5)	105 (2.1)	441 (4.7)	100 (2.7)	411 (4.2)	108 (3.0)
Romania	502 (4.3)	91 (2.5)	510 (4.8)	89 (3.2)	495 (4.3)	91 (2.5)
Russian Federation	568 (2.7)	66 (1.7)	578 (2.8)	64 (1.8)	559 (3.1)	67 (2.0)
Saudi Arabia	430 (4.4)	91 (2.1)	456 (3.1)	74 (2.1)	402 (8.2)	98 (3.5)
Singapore	567 (3.3)	80 (1.8)	576 (3.5)	77 (1.9)	559 (3.6)	83 (2.2)
Slovak Republic	535 (2.8)	69 (1.9)	540 (3.1)	68 (2.4)	530 (2.8)	70 (1.9)
Slovenia	530 (2.0)	70 (0.9)	539 (2.2)	68 (1.4)	523 (2.7)	72 (1.4)
Spain	513 (2.3)	68 (1.2)	516 (2.5)	67 (1.4)	511 (2.8)	69 (1.5)
Sweden	542 (2.1)	65 (1.0)	549 (2.4)	65 (1.6)	535 (2.5)	65 (1.6)
Trinidad and Tobago	471 (3.8)	88 (1.5)	487 (4.5)	85 (2.3)	456 (4.3)	89 (2.0)
United Arab Emirates	439 (2.2)	101 (1.2)	452 (3.0)	94 (1.3)	425 (3.5)	106 (1.6)
United States	556 (1.5)	73 (1.0)	562 (1.9)	72 (1.2)	551 (1.7)	74 (1.1)

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

**Appendix F.2: Standard Deviations of Reading Achievement (Continued)**

Country	Overall		Girls		Boys	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<b>Sixth Grade Participants</b>						
Botswana	419 (4.1)	92 (2.5)	432 (4.2)	87 (2.7)	405 (4.8)	94 (2.7)
Honduras	450 (4.8)	79 (3.0)	455 (5.5)	79 (3.4)	444 (5.0)	80 (3.4)
Kuwait	419 (5.2)	110 (3.3)	443 (6.4)	107 (3.4)	391 (7.3)	107 (3.5)
Morocco	424 (3.9)	88 (2.0)	443 (3.8)	82 (2.7)	408 (4.5)	91 (2.2)
<b>Benchmarking Participants<sup>◊</sup></b>						
Alberta, Canada	548 (2.9)	71 (1.4)	553 (3.1)	71 (1.8)	543 (3.1)	70 (1.8)
Ontario, Canada	552 (2.6)	73 (1.5)	558 (3.3)	73 (2.2)	546 (2.8)	72 (1.6)
Quebec, Canada	538 (2.1)	62 (1.2)	544 (2.6)	60 (1.6)	531 (2.4)	62 (1.4)
Maltese - Malta	457 (1.5)	88 (1.4)	470 (2.0)	84 (1.7)	445 (2.2)	90 (1.9)
Eng/Afr (5) - RSA	421 (7.3)	117 (4.0)	434 (7.7)	113 (4.4)	408 (8.7)	119 (4.4)
Andalusia, Spain	515 (2.3)	66 (1.2)	519 (2.4)	63 (1.6)	511 (2.8)	68 (1.4)
Abu Dhabi, UAE	424 (4.7)	99 (2.7)	442 (5.5)	92 (3.1)	406 (6.3)	102 (2.9)
Dubai, UAE	476 (2.0)	105 (1.5)	483 (3.9)	100 (1.8)	470 (3.5)	108 (2.0)
Florida, US	569 (2.9)	72 (1.7)	576 (3.4)	70 (2.3)	561 (3.0)	73 (1.6)

<sup>◊</sup> Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Overall		Girls		Boys	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Botswana	463 (3.5)	85 (2.4)	482 (3.7)	80 (2.7)	444 (3.8)	84 (2.9)
Colombia	576 (3.4)	66 (1.9)	578 (3.8)	65 (2.2)	574 (3.7)	67 (2.1)
South Africa	461 (3.7)	99 (2.4)	476 (3.9)	94 (2.5)	446 (4.2)	101 (3.0)



# Appendix G

## Organizations and Individuals Responsible for PIRLS 2011

## Introduction

PIRLS 2011 was a collaborative effort involving hundreds of individuals around the world. This appendix acknowledges the individuals and organizations for their contributions. Given that work on PIRLS 2011 has spanned approximately five years and has involved so many people and organizations, this list may not include all who contributed. Any omission is inadvertent. PIRLS 2011 also acknowledges the students, parents, teachers, and school principals who contributed their time and effort to the study. This report would not be possible without them.

## *Management and Coordination*

PIRLS is a major undertaking of IEA, and together with the Trends in International Mathematics and Science Study (TIMSS) comprises the core of IEA's regular cycles of studies. The PIRLS assessment at the fourth grade complements TIMSS, which regularly assesses mathematics and science achievement at fourth and eighth grades.

The TIMSS & PIRLS International Study Center at Boston College has responsibility for the overall direction and management of the TIMSS and PIRLS projects. Headed by Executive Directors Drs. Ina V.S. Mullis and Michael O. Martin, the study center is located in the Lynch School of Education. In carrying out the project, the TIMSS & PIRLS International Study Center worked closely with the IEA Secretariat in Amsterdam, which managed country participation, was responsible for verification of all translations produced by the participating countries, and coordinated the school visits by International Quality Control Monitors. The IEA Data Processing and Research Center in Hamburg was responsible for processing and verifying the data submitted by the participants; Statistics Canada in Ottawa was responsible for school and student sampling activities; and Educational Testing Service in Princeton, New Jersey consulted on psychometric methodology, provided software for scaling the achievement data, and replicated the achievement scaling for quality assurance.

The Project Management Team, comprising the study directors and representatives from the TIMSS & PIRLS International Study Center, IEA Secretariat and IEA Data Processing and Research Center, Statistics Canada, and ETS met twice a year throughout the study to discuss the study's progress, procedures, and schedule. In addition, the study directors met with members of IEA's Technical Executive Group twice yearly to review technical issues.

To work with the international team and coordinate within-country activities, each participating country designates an individual to be the PIRLS National Research Coordinator (NRC). The NRCs have the challenging task of implementing the PIRLS study in their countries in accordance with the PIRLS guidelines and procedures. In addition, the NRCs provide feedback and contributions throughout the development of the PIRLS assessment. The quality of the PIRLS assessment and data depends on the work of the NRCs and their colleagues in carrying out the complex sampling, data collection, and scoring tasks involved. Continuing the tradition of exemplary work established in previous cycles of PIRLS, the PIRLS 2011 NRCs performed their many tasks with dedication, competence, energy, and goodwill, and have been commended by the IEA Secretariat, the TIMSS & PIRLS International Study Center, the IEA Data Processing and Research Center, and Statistics Canada for their commitment to the project and the high quality of their work.

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### *IEA Secretariat*

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David Ebbs, *Management Assistant*

Alana Yu, *Management Assistant*

### *TIMSS & PIRLS International Study Center at Boston College*

Ina V.S. Mullis, *Executive Director*

Michael O. Martin, *Executive Director*

Pierre Foy, *Director of Sampling, Psychometrics, and Data Analysis*

Paul Connolly, *Director, Graphic Design and Publications*

Kathleen T. Drucker, *Assistant Research Director, PIRLS Reading*

Alka Arora, *Assistant Research Director, TIMSS Mathematics*

Gabrielle M. Stanco, *Assistant Research Director, TIMSS Science*

Ieva Johansone, *Assistant Research Director, Operations and Quality Control*

Marcie Bligh, *Manager of Office Administration*

Bradley Crossman, *Psychometrician (through 2012)*

Courtney E. Castle, *Graduate Assistant*

Victoria A.S. Centurino, *Graduate Assistant*

Susan Farrell, *Senior Data Graphics Specialist*

Joseph Galia, *Senior Statistician/Programmer*

Christine Hoage, *Manager of Finance*

Lee R. Jones, *Chief Science Consultant*

Chad A. Minnich, *Writer/Editor*

Jennifer Moher Sepulveda, *Data Graphics Specialist*

Mario A. Pita, *Senior Data Graphics Specialist*

Jyothsna Pothana, *Statistician/Programmer*

Betty Poulos, *Administrative Coordinator*

Corinna Preuschoff, *Senior Research Specialist (through 2011)*

Maira A. Ragan, *Graduate Assistant*

Ruthanne Ryan, *Data Graphics Specialist*

Steven A. Simpson, *Data Graphics Specialist*



### *IEA Data Processing and Research Center*

Dirk Hastedt, *Co-Director*

Juliane Hencke, *Project Co-Manager, TIMSS and PIRLS data processing*

Oliver Neuschmidt, *Project Co-Manager, TIMSS and PIRLS data processing*

Yasin Afana, *Deputy Project Manager, TIMSS and PIRLS data processing*

Milena Taneva, *Deputy Project Manager, TIMSS and PIRLS data processing*

Alena Becker, *Research Analyst*

Christine Busch, *Research Analyst*

Ralph Carstens, *Senior Research Analyst*

Mark Cockle, *Research Analyst*

Tim Daniel, *Research Analyst*

Limiao Duan, *Research Analyst*

Eugenio Gonzales, *Unit Head, Research and Analysis*

Pamela Inostroza, *Research Analyst*

Michael Jung, *Research Analyst*

Maike Junod, *Programmer*

Alexander Konn, *Programmer*

Marta Kostek-Drosihn, *Unit Coordinator*

Sabine Meinck, *Research Analyst, Sampling*

Sebastian Meyer, *Research Analyst*

Dirk Oehler, *Research Analyst*

Moritz Otto, *Programmer*

Devi Potham Rajendra Prasath, *Programmer*

Daniel Radtke, *Research Analyst*

Anke Sielemann, *Research Analyst*

Harpreet Singh Choudry, *Unit Head, Software*

Caroline Vandenplas, *Research Analyst*

Sabine Weber, *Research Analyst*

Bettina Wietzorek, *Meeting and Seminar Coordinator*

Meng Xue, *Programmer*

Olaf Zuehlke, *Research Analyst, Sampling*

### *Statistics Canada*

Marc Joncas, *Senior Methodologist*

Sylvie LaRoche, *Senior Methodologist*

### *Educational Testing Service*

Matthias Von Davier, *Research Director*

Edward Kulick, *Research Director*

Meng Wu, *Associate Psychometrician*

Jonathan Weeks, *Associate Research Scientist*

Scott Davis, *Data Analysis and Computational Research Specialist*

Yuxin (Christina) Tang, *Principal Research Data Analyst*

Zhumei Guo, *Senior Research Data Analyst*

### *Sampling Referee*

Keith Rust, *Vice President and Associate Director of the Statistical Group, Westat, Inc.*

### *PIRLS 2011 Reading Development Group*

Jan Mejdning

Department of Education

Aarhus University

**Denmark**

Sue Horner

Curriculum Division

Qualifications and Curriculum Authority

**England**

Elinor Saiegh-Haddad

English Literature and Linguistics Department

Bar-Ilan University

**Israel**

Fatma Abdulabus Noorani

Ministry of Education

**Oman**

Galina Zuckerman

Psychological Institute

Russian Academy of Education

**Russian Federation**

Elizabeth Pang

Curriculum Planning & Development Division

Ministry of Education

**Singapore**

Caroline Liberg

Department of Curriculum Studies

Uppsala University

**Sweden**

Elois Scott

**United States**

### *PIRLS 2011 Item Development Task Force*

Kathleen T. Drucker, *Assistant Research Director, PIRLS Reading*

Ann Kennedy, *PIRLS Coordinator (through 2010)*

Marian Sainsbury, *PIRLS Reading Coordinator (NFER)*

Patricia Donahue, *PIRLS Reading Consultant (ETS)*

Elois Scott, *United States*

Julian Fraillon, *Web-based Assessment Coordinator (ACER)*

### *PIRLS 2011 Questionnaire Development Group*

Hwawei Ko

Graduate Institute of Learning and Instruction

National Central University

**Chinese Taipei**

Jasminka Buljan Culej

National Center for External Evaluation in  
Education

**Croatia**

Marc Colmant

Ministère de l'Éducation Nationale,  
Secrétariat Général Direction de l'Évaluation, de la  
Prospective et de la Performance

**France**

Knut Schwippert

Faculty of Education

General, Intercultural, and International  
Comparative Education

University of Hamburg

**Germany**

Megan Chamberlain

Comparative Education Research Unit

Ministry of Education

**New Zealand**

Ragnar Gees Solheim

National Center for Reading Education and  
Research

University of Stavanger

**Norway**

Abdessalem Bouslama

Office of Student Assessment

Evaluation Institute, Supreme Education Council

**Qatar**

Sarah Howie

Center for Evaluation and Assessment (CEA)

Faculty of Education

University of Pretoria

**South Africa**

Valena Plisko

National Center for Education Statistics

U.S. Department of Education

**United States**

## *PIRLS 2011 NATIONAL RESEARCH COORDINATORS*

### *Australia*

Sue Thomson  
Australian Council for Educational Research

### *Austria*

Günter Haider  
Birgit Suchań  
Bundesinstitut fuer Bildungsforschung,  
Innovation und Entwicklung des  
Oesterreichischen Schulwesens (BIFIE)

### *Azerbaijan*

Emin Meherremov  
Ulviya Mikailova (*through 2010*)  
Department of Monitoring and Assessment  
Ministry of Education

### *Belgium (French)*

Genevieve Hindryckx  
Anne Matoul  
Annette Lafontaine (*through 2011*)  
Université de Liège

### *Botswana*

Chawangwa Mudongo  
Botswana Examinations Council

### *Bulgaria*

Marina Vasileva Mavrodieva  
Center for Control & Assessment of  
the Quality in School Education

### *Canada*

Pierre Brochu  
Council of Ministers of Education

### *Chinese Taipei*

Hwawei Ko  
Graduate Institute of Learning and Instruction  
National Central University

### *Colombia*

Francisco Reyes  
Instituto Colombiano para el Fomento de  
la Educacion Superior (ICFES)

### *Croatia*

Jasminka Buljan Culej  
National Center for External Evaluation in  
Education

### *Czech Republic*

Iveta Kramplová  
Dagmar Pavlikova (*through 2009*)  
Czech School Inspectorate

### *Denmark*

Jan Mejding  
Department of Education  
Aarhus University

### *England*

Liz Twist  
National Foundation for Educational Research

### *Finland*

Sari Sulkunen  
Finnish Institute for Educational Research  
University of Jyväskylä

### *France*

Marc Colmant  
Ministere de l'Education Nationale,  
Direction de l'Evaluation,  
de la Prospective et de la Performance

*Georgia*

Nutsa Kobakhidze  
National Assessment and Examinations Center

*Germany*

Wilfried Bos  
Irmela Tarelli  
Institute for School Development Research (IFS)  
TU Dortmund University

*Honduras*

Renán Rápalo Castellanos  
Secretaria de Educacion  
Instituto de Investigación  
Universidad Pedagógica Nacional

*Hong Kong*

Tse Shek-Kam  
Faculty of Education  
The University of Hong Kong

*Hungary*

Ildiko Balazsi  
Péter Balkányi  
Educational Authority  
Department of Educational Assessment and  
Evaluation

*Indonesia*

Hari Setiadi  
Nugaa Yulia Wardani (*through 2010*)  
Center for Educational Assessment  
Ministry of National Education

*Iran, Islamic Republic of*

Abdol'azim Karimi  
Research Institute for Education (RIE)  
Ministry of Education

*Ireland*

Eemer Eivers  
Educational Research Centre  
St. Patrick's College, Dublin

*Israel*

Inbal Ron-Kaplan  
National Authority for Measurement and  
Evaluation in Education (RAMA)

*Italy*

Fabio Alivernini  
Istituto Nazionale per la Valutazione  
del Sistema Educativo di Istruzione e  
di Formazione (INVALSI)

*Kuwait*

Noriah Alroomi  
Ministry of Education

*Lithuania*

Irina Mackeviciene  
Aistė Elijio (*through 2011*)  
National Examination Centre  
Ministry of Education and Science

*Malta*

Grace Grima  
Directorate for Quality & Standards  
in Education  
Ministry of Education

*Morocco*

Mohammed Sassi  
Département de l'Évaluation Nationale  
Centre Nationale de l'Évaluation et  
des Examens

*Netherlands*

Andrea Netten  
Expertisecentrum Nederlands  
Radboud University

*New Zealand*

Megan Chamberlain  
Comparative Education Research Unit  
Ministry of Education

*Northern Ireland*

Patricia Wyers  
Statistics and Research Branch  
Department of Education

*Norway*

Ragnar Gees Solheim  
Victor van Daal  
National Centre for Reading Education and  
Research  
University of Stavanger

*Oman*

Zuwaina Saleh Al-Maskari  
Ministry of Education

*Poland*

Krzysztof Konarzewski  
Polish Academy of Sciences

*Portugal*

Ana Ferreira  
Education Statistics and Planning Office  
Ministry of Education

*Qatar*

Abdessalem Bouslama  
Office of Student Assessment  
Evaluation Institute, Supreme Education Council

*Romania*

Gabriela Noveanu  
Institute for Educational Sciences  
Curriculum Department

*Russian Federation*

Galina Kovaleva  
Institute of Content and Methods of Education  
Center for Evaluating the Quality of  
General Education  
Russian Academy of Education

*Saudi Arabia*

Saleh Alshaya  
International Studies & Testing Center (ISTC)  
Ministry of Education

*Singapore*

Ng Huey Bian  
Research and Evaluation Section  
Ministry of Education

Elizabeth Pang

Curriculum Planning and  
Development Division  
Ministry of Education

*Slovak Republic*

Soňa Gallová  
National Institute for Certified Educational  
Measurements

*Slovenia*

Marjeta Doupona Horvat  
Educational Research Institute

*South Africa*

Sarah Howie  
Surette van Staden  
Elsie Venter (*through 2010*)  
Center for Evaluation and Assessment (CEA)  
University of Pretoria

*Spain*

David Cervera Olivares  
Jesús Domínguez Castillo (*through 2012*)  
National Institute of Educational Evaluation  
Ministry of Education, Culture and Sports

*Sweden*

Agnes Tongur  
Marie Eklund (*through 2010*)  
Swedish National Agency for Education

*Trinidad and Tobago*

Mervyn Sambucharan  
Division of Educational Research and Evaluation  
Ministry of Education

*United Arab Emirates*

Aljawhara Ali Al Sebaiei  
Nada Abu Baker Husain Ruban  
Assessment Department  
Ministry of Education

*United States*

Sheila Thompson  
Stephen Provasnik (*through 2011*)  
National Center for Education Statistics  
U.S. Department of Education

**BENCHMARKING PARTICIPANTS**

*Alberta, Canada*

Ping Yang  
Learner Assessment Branch  
Alberta Education

*Ontario, Canada*

Michael Kozlow  
Education Quality and Accountability Office

*Quebec, Canada*

Robert Marcotte  
Direction de la sanction des études

*Andalusia, Spain*

Sebastián Cárdenas  
Students Assessment Service  
Andalusian Agency for the  
Educational Assessment

*Abu Dhabi, United Arab Emirates*

Shaikha Ali Al Zaabi  
Abu Dhabi Education Council

*Dubai, United Arab Emirates*

Rabaa AlSumaiti  
Knowledge and Human Development Authority

*Florida, United States*

Patrick Gonzalez  
National Center for Education Statistics  
U.S. Department of Education





# Appendix H

## Sample Passages, Questions, and Scoring Guides

### Reading for Literary Experience

Fly, Eagle, Fly

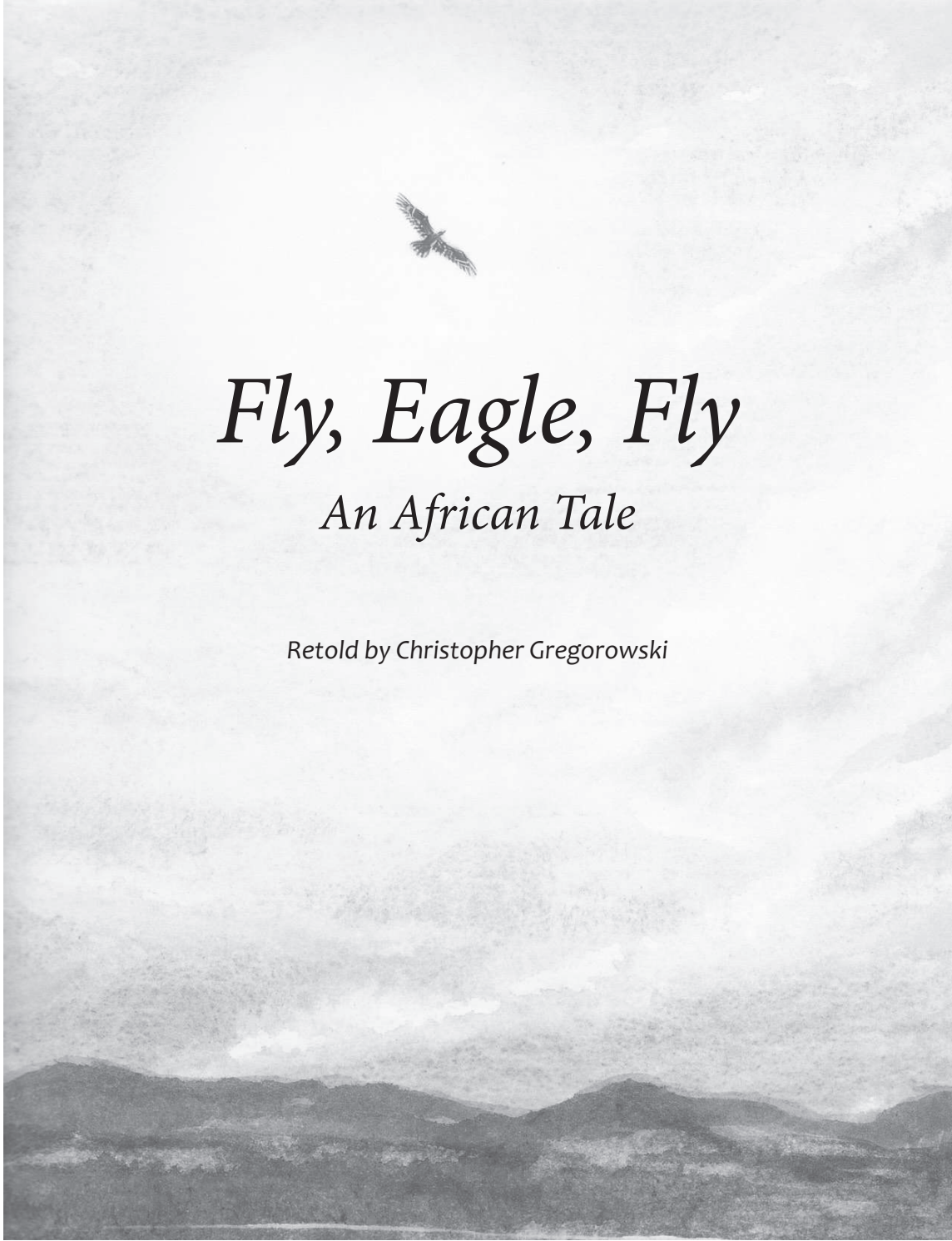
Enemy Pie

### Reading to Acquire and Use Information

Day Hiking

The Giant Tooth Mystery





# *Fly, Eagle, Fly*

*An African Tale*

Retold by Christopher Gregorowski

A farmer went out one day to search for a lost calf. The herders had returned without it the evening before. And that night there had been a terrible storm.

He went to the valley and searched by the riverbed, among the reeds, behind the rocks and in the rushing water.

He climbed the slopes of the high mountain with its rocky cliffs. He looked behind a large rock in case the calf had huddled there to escape the storm. And that was where he stopped. There, on a ledge of rock, was a most unusual sight. An eagle chick had hatched from its egg a day or two earlier, and had been blown from its nest by the terrible storm.

He reached out and cradled the chick in both hands. He would take it home and care for it.

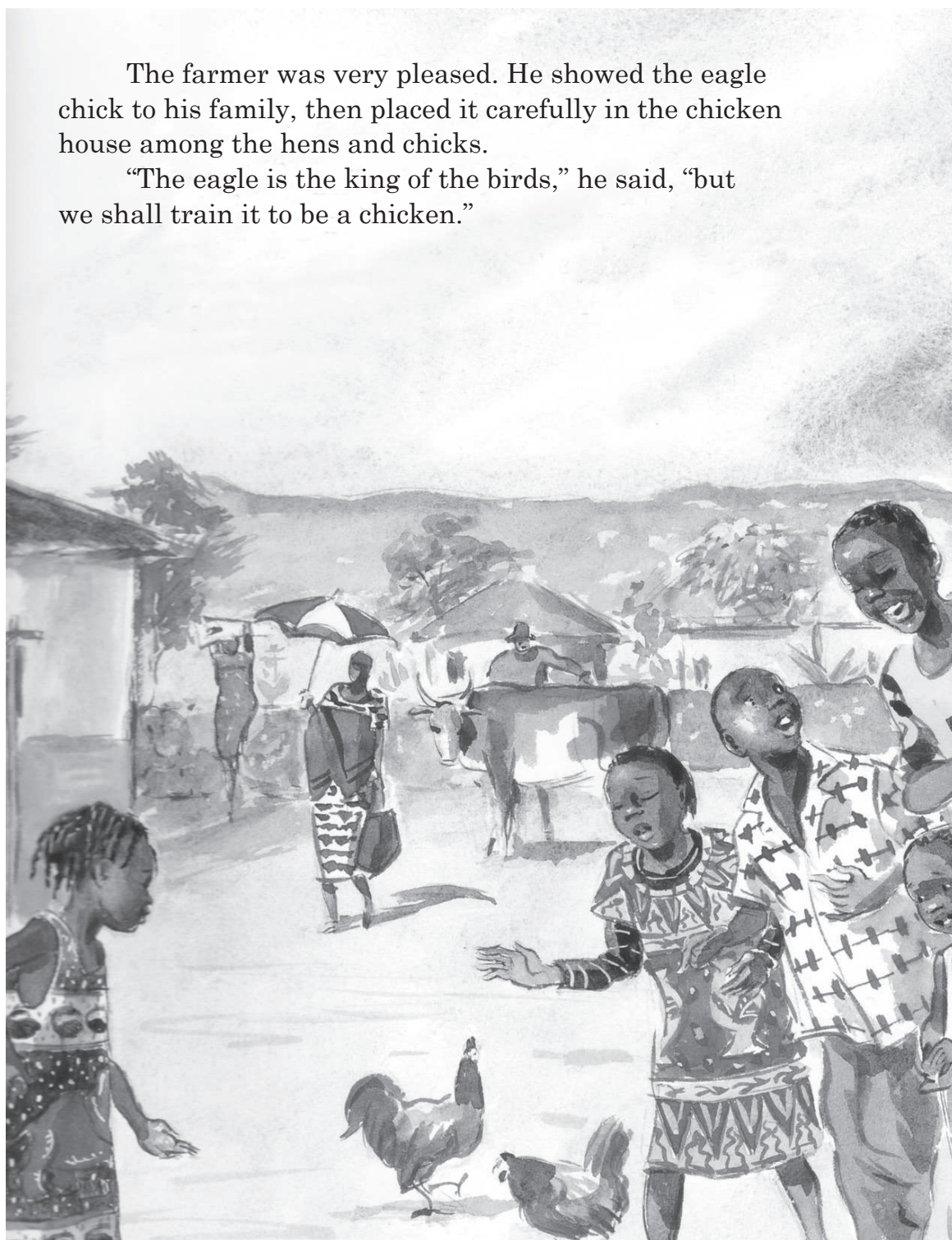
He was almost home when the children ran out to meet him.

“The calf came back by itself!” they shouted.



The farmer was very pleased. He showed the eagle chick to his family, then placed it carefully in the chicken house among the hens and chicks.

“The eagle is the king of the birds,” he said, “but we shall train it to be a chicken.”



So, the eagle lived among the chickens, learning their ways. As it grew, it began to look quite different from any chicken they had ever seen.

One day a friend dropped in for a visit. The friend saw the bird among the chickens.

“Hey! That is not a chicken. It’s an eagle!”

The farmer smiled at him and said, “Of course it’s a chicken. Look—it walks like a chicken, it eats like a chicken. It thinks like a chicken. Of course it’s a chicken.”

But the friend was not convinced. “I will show you that it is an eagle,” he said.

The farmer’s children helped his friend catch the bird. It was fairly heavy, but the farmer’s friend lifted it above his head and said, “You are not a chicken but an eagle. You belong not to the earth but to the sky. Fly, Eagle, fly!”

The bird stretched out its wings, looked about, saw the chickens feeding, and jumped down to scratch with them for food.

“I told you it was a chicken,” the farmer said, and he roared with laughter.



Very early the next morning the farmer’s dogs began to bark. A voice was calling outside in the darkness. The farmer ran to the door. It was his friend again. “Give me another chance with the bird,” he begged.

“Do you know the time? It is long before dawn.”

“Come with me. Fetch the bird.”

Reluctantly, the farmer picked up the bird, which was fast asleep among the chickens. The two men set off, disappearing into the darkness.

“Where are we going?” asked the farmer sleepily.

“To the mountains where you found the bird.”

“And why at this ridiculous time of the night?”

“So that our eagle may see the sun rise over the mountain and follow it into the sky where it belongs.”

They went into the valley and crossed the river, the friend leading the way. “Hurry,” he said, “for the dawn will arrive before we do.”

The first light crept into the sky as they began to climb the mountain. The wispy clouds in the sky were pink at first, and then began to shimmer with a golden brilliance. Sometimes their path was dangerous as it clung to the side of the mountain, crossing narrow shelves of rock and taking them into dark crevices and out again. At last he said, “This will do.” He looked down the cliff and saw the ground thousands of feet below. They were very near the top.

Carefully, the friend carried the bird onto a ledge. He set it down so that it looked toward the east, and began talking to it. The farmer chuckled. “It talks only chicken-talk.”

But the friend talked on, telling the bird about the sun, how it gives life to the world, and how it reigns in the heavens, giving light to each new day. “Look at the sun, Eagle. And when it rises, rise with it. You belong to the sky, not to the earth.” At that moment the sun’s first rays shot out over the mountain, and suddenly the world was ablaze with light.

The sun rose majestically. The great bird stretched out its wings to greet the sun and feel the warmth on its feathers. The farmer was quiet. The friend said, “You belong not to the earth, but to the sky. Fly, Eagle, fly!” He scrambled back to the farmer. All was silent. The eagle’s head stretched up, its wings stretched outwards, and its legs leaned forward as its claws clutched the rock.

Then, without really moving, feeling the updraft of a wind more powerful than any man or bird, the great eagle leaned forward and was swept upward higher and higher, lost to sight in the brightness of the rising sun, never again to live among the chickens.



*Fly, Eagle, Fly* by Christopher Gregorowski and illustrated by Niki Daly. Published by Simon and Schuster, New York. Text copyright © 2000 by Christopher Gregorowski and illustrations copyright © 2000 by Niki Daly. An effort has been made to obtain copyright permission.



## Questions Fly, Eagle, Fly

1. What did the farmer set out to look for at the beginning of the story?

- ★ (A) a calf
- (B) herders
- (C) rocky cliffs
- (D) an eagle chick

2. Where did the farmer find the eagle chick?

- (A) in its nest
- (B) by the riverbed
- ★ (C) on a ledge of rock
- (D) among the reeds

3. What in the story shows that the farmer was careful with the eagle chick?

- ★ (A) He carried the eagle chick in both hands.
- (B) He brought the eagle chick to his family.
- (C) He put the eagle chick back in its nest.
- (D) He searched the riverbed for the eagle chick.

★ **Correct Answer**

4. What did the farmer do with the eagle chick when he brought it home?

- (A) He taught it to fly.
- (B) He set it free.
- ★  (C) He trained it to be a chicken.
- (D) He made a new nest for it.

5. During the friend's first visit, the eagle chick behaved like a chicken. Give **two** examples that show this.

 1. \_\_\_\_\_

\_\_\_\_\_

 2. \_\_\_\_\_

\_\_\_\_\_

6. When the farmer's friend first met the eagle, how did he try to make the eagle fly?

- ★  (A) He lifted it above his head.
- (B) He set it on the ground.
- (C) He threw it in the air.
- (D) He brought it to the mountain.

★ **Correct Answer**

7. Explain what the farmer’s friend meant when he told the eagle, “You belong not to the earth but to the sky.”



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8. Why did the farmer roar with laughter during his friend’s first visit?

- (A) The eagle was too heavy to fly.
- (B) The eagle was difficult to catch.
- (C) The eagle looked different from the chickens.
- ★  (D) The eagle proved him right.

9. Why did the farmer’s friend take the eagle to the high mountains to make it fly? Give **two** reasons.



1.

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2.

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★ **Correct Answer**

10. Find and copy words that tell you how beautiful the sky was at dawn.



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11. Why was the rising sun important to the story?

- ★ (A) It awakened the eagle's instinct to fly.
- (B) It reigned in the heavens.
- (C) It warmed the eagle's feathers.
- (D) It provided light on the mountain paths.

12. You learn what the farmer's friend was like from the things he did.

Describe what the friend was like and give an example of what he did that shows this.



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★ Correct Answer

## Fly, Eagle, Fly, Item 5

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5. During the friend's first visit, the eagle chick behaved like a chicken. Give two examples that show this.

*Process: Focus on and Retrieve Explicitly Stated Information*

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### 2 – Complete Comprehension

The response identifies two ways that the eagle chick behaved like a chicken listed below.

*NOTE TO SCORERS: Both correct responses can be expressed in the same sentence.*

### 1 – Partial Comprehension

The response identifies one way that the eagle chick behaved like a chicken listed below.

### 0 – No Comprehension

The response does not describe any of the ways listed below. It may include only a vague or circular description of how the eagle behaved.

*Examples:*

It acted like a chicken.

It looked like one.

It learned chicken ways.

### Ways in which the Eagle Behaved Like a Chicken

*NOTE TO SCORERS: Students may provide a reasonable paraphrase of these ideas. Any combination of two ideas based on this list is acceptable.*

It walks/moves like a chicken.

It eats/pecks on the ground for food like a chicken.

It thinks like a chicken.

It won't fly (returns to the chickens on the ground).

It scratches with the chickens.

## Fly, Eagle, Fly, Item 7

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7. Explain what the farmer's friend meant when he told the eagle, "You belong not to the earth but to the sky."

*Process: Interpret and Integrate Ideas and Information*

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### 2 – Complete Comprehension

The response interprets the meaning of both parts of the quote – “belong not to the earth” and “belong to the sky” in terms of the story.

*Examples:*

It is supposed to be free in the sky and not stuck on the ground.

That it was not a chicken who walked on the earth. It was an eagle and meant to fly.

It was meant to be flying with other birds of its kind, not among chickens.

It is meant to fly, not walk.

The sky is his home, not the ground.

### 1 – Partial Comprehension

The response interprets only the first or the second part of the quote.

*Examples:*

That it was not a chicken. /It was an eagle.

It was the king of the flying birds.

It was not a ground animal.

It is meant to fly.

Or, the response describes the literal contrast only.

*Example:*

It was not a chicken but an eagle.

### 0 – No Comprehension

The response may provide an explanation of the quote that is vague or inaccurate, or it may provide a simple rephrasing of the quote itself.

*Example:*

It is supposed to be not of the earth but of the sky.

It belongs to the sky not on the ground.

## Fly, Eagle, Fly, Item 9

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9. Why did the farmer's friend take the eagle to the high mountains to make it fly? Give two reasons.

*Process: Interpret and Integrate Ideas and Information*

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### 2 – Complete Comprehension

The response provides two reasons related to the sun, the mountains as the eagle's natural habitat, or the mountain's height in the sky. See the list of appropriate reasons below.

*NOTE TO SCORERS: Both correct responses can be expressed in the same sentence.*

### 1 – Partial Comprehension

The response provides one reason related to the sun, the mountains as the eagle's natural habitat, or the mountain's height in the sky as listed below.

### 0 – No Comprehension

The response may provide a reason for making the eagle fly, rather than a reason for taking it to the mountains.

*Example:*

To prove it was an eagle.

The response may provide a reason that is vague or inaccurate, or it may simply repeat part of the question.

*Examples:*

It made it easier to fly.

To make it fly.

### Reasons Why the Farmer's Friend Took the Eagle to the Mountains

*NOTE TO SCORERS: Students may provide a reasonable paraphrase of these ideas. Any combination of two ideas based on this list is acceptable.*

To see the sun (rise)/to feel the warmth of the sun/to follow the sun.

To feel the updraft of the wind.

To be in its natural home/where it belongs/where it was found.

To get it closer to the sky/to get it higher.

## Fly, Eagle, Fly, Item 10

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10. Find and copy words that tell you how beautiful the sky was at dawn.

*Process: Examine and Evaluate Content, Language, and Textual Elements*

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### 1 – Acceptable Response

The response provides any of the words or phrases in the list below.

*Examples:*

Wispy pink clouds

Majestically

Golden brilliance

Ablaze with light

### 0 – Unacceptable Response

The response does not provide any of the words or phrases in the list below. The response may repeat words from the question.

*Examples:*

Sunrise

Dawn

Beautiful

### Words in the Story that Describe How Beautiful the Sky Was at Dawn

*Note any of the underlined words are sufficient and other parts of the quote also may be given. Ignore minor variations in phrasing from the text, as long as it is clear what is intended.*

The wispy clouds in the sky were pink at first, then began to shimmer with golden brilliance.

The sun rose majestically.

The sun's first rays shot over the mountain, and suddenly the world was ablaze with light.



## Fly, Eagle, Fly, Item 12

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12. You learn what the farmer’s friend was like from the things he did. Describe what the friend was like and give an example of what he did that shows this.

*Process: Interpret and Integrate Ideas and Information*

---

### 2 – Complete Comprehension

The response describes one plausible character trait (persistent, stubborn, nice, clever, friendly to animals, etc.). In addition, the response provides one example of the farmer’s friend’s actions that are evidence of the character trait.

*Examples:*

He was determined. He kept trying to teach the eagle to fly.

He was clever. He knew to take the eagle to the mountain to make it fly.

He is the kind of person that doesn’t give up. He went back to the farmer’s house a second time to convince the eagle it was an eagle.

He was kind to animals. He wanted the eagle to be free.

### 1 – Partial Comprehension

The response provides one plausible character trait.

Or, the response provides one example of the friend’s actions that are evidence of the friend’s character.

*Examples:*

He is kind to animals.

He takes the eagle to see the sun and fly away never to live among the chickens.

### 0 – No Comprehension

The response does not provide an appropriate or accurate description of the farmer’s friend’s character, or provides a vague and general description that demonstrates limited comprehension of the story without further textual support.

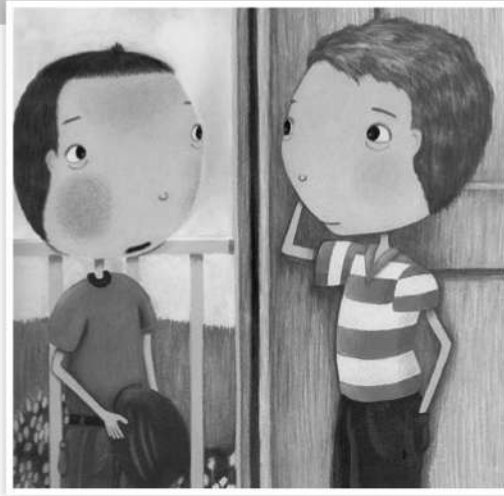
Or, the response may include some information from the story that has no connection to the description of the friend’s character.

*Examples:*

He is mean. He tells the eagle it is a chicken. (*Note that this response describes the farmer and not his friend.*)

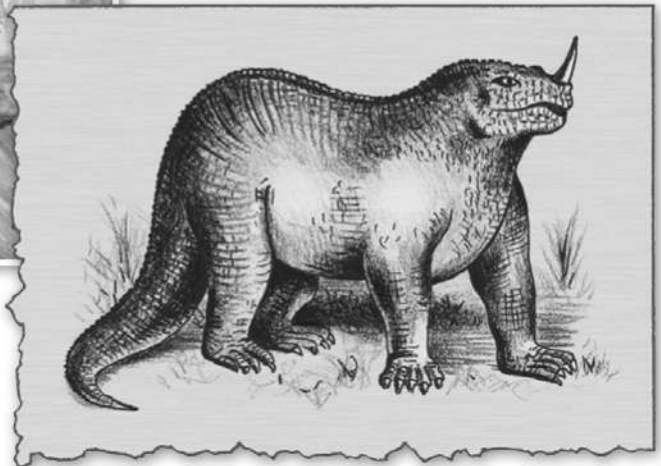
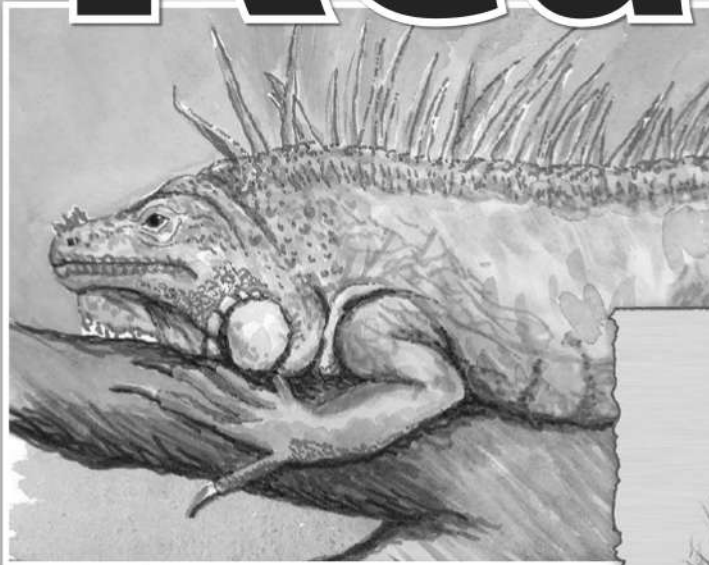
He is happy. (*Note that “happy” must have some text support to be considered acceptable.*)

# PIRLS 2011



Text for "Enemy Pie" can be found in the PIRLS Reader booklet in the back of the publication.

# Reader



**TIMSS & PIRLS**  
International Study Center  
Lynch School of Education, Boston College

Questions Enemy Pie

1. Who is telling the story?

(A) Jeremy

(B) Dad

(C) Stanley

★ (D) Tom

2. At the beginning of the story, why did Tom think Jeremy was his enemy?



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3. Write **one** ingredient that Tom thought would be in Enemy Pie.



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★ Correct Answer

4. Find the part of the story next to the picture of a piece of pie: . Why did Tom think it could be a great summer after all?

(A) He liked playing outside.

★ (B) He was excited about Dad's plan.

(C) He made a new friend.

(D) He wanted to taste Enemy Pie.

5. How did Tom feel when he first smelled Enemy Pie? Explain why he felt this way.



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6. What did Tom think could happen when his enemy ate Enemy Pie? Write **one** thing.



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---

★ Correct Answer

7. What were the **two** things Tom’s dad told Tom to do for Enemy Pie to work?



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8. Why did Tom go to Jeremy’s house?

- A To invite Jeremy to dinner.
- B To ask Jeremy to leave Stanley alone.
- C To invite Jeremy to play.
- D To ask Jeremy to be his friend.

9. What surprised Tom about the day he spent with Jeremy?



---

---

★ Correct Answer

10. At dinner, why did Tom begin to think he and his dad should forget about Enemy Pie?

(A) Tom did not want to share dessert with Jeremy.

(B) Tom did not think Enemy Pie would work.

★ (C) Tom was beginning to like Jeremy.

(D) Tom wanted to keep Enemy Pie a secret.

11. How was Tom feeling when Dad passed the piece of Enemy Pie to Jeremy?

★ (A) alarmed

(B) satisfied

(C) surprised

(D) confused

★ Correct Answer

12. What was it about Enemy Pie that Dad kept secret?

- ★ (A) It was a normal pie.
- (B) It tasted disgusting.
- (C) It was his favorite food.
- (D) It was a poisonous pie.

13. Look at this sentence from the end of the story:

“After dessert, Jeremy invited me to come over to his house the next morning.”

What does this suggest about the boys?

- (A) They are still enemies.
- (B) They do not like to play at Tom’s house.
- (C) They wanted to eat some more Enemy Pie.
- ★ (D) They might be friends in the future.

14. Use what you have read to explain why Tom’s dad really made Enemy Pie.



---

---

★ Correct Answer

15. What kind of person is Tom's dad? Give an example of what he did in the story that shows this.



---

---

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16. What lesson might you learn from this story?



---

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## Enemy Pie, Item 2

---

2. At the beginning of the story, why did Tom think Jeremy was his enemy?

*Process: Make Straightforward Inferences*

---

### 1 – Acceptable Response

The response shows understanding that Tom considered Jeremy his enemy either because Jeremy did not invite him to his party, or because Jeremy invited Tom's best friend Stanley and not him.

*Examples:*

Tom was not invited to Jeremy's party.

Jeremy invited his friend to his party, but did not invite Tom.

Or, the response shows understanding that Tom was afraid that Jeremy would take his place as Stanley's best friend.

*Examples:*

Tom was jealous of him moving in next to Stanley.

Jeremy took his best friend.

### 0 – Unacceptable Response

The response does not show understanding of why Tom considered Jeremy his enemy. The response may repeat words from the question, or may provide a vague response that acknowledges that Jeremy moved in next door to Stanley or invited him to his party without showing understanding of the consequence.

*Examples:*

Jeremy was his enemy.

Jeremy moved in right next door to Tom's best friend.

Jeremy invited Stanley to his party.

Jeremy was new in the neighborhood.

Jeremy was his friend.

## Enemy Pie, Item 3

---

3. Write one ingredient that Tom thought would be in Enemy Pie.

*Process: Focus on and Retrieve Explicitly Stated Information*

---

### 1 – Acceptable Response

The response identifies either (earth)worms or rocks as an ingredient.

*NOTE TO SCORERS: Do not credit responses that include ANY incorrect piece(s) of information alongside correct answers.*

*Answers:*

earthworms

worms

rock

### 0 – Unacceptable Response

The response does not provide either of the ingredients listed above. The response may provide a vague description without mention of a specific ingredient, may name an incorrect ingredient alongside a correct response, or may describe what would happen to someone who ate the pie.

*Examples:*

rocks and dirt

worms and raspberries

disgusting things

secret ingredients

things that make your hair fall out

## Enemy Pie, Item 5

---

5. How did Tom feel when he first smelled Enemy Pie? Explain why he felt this way.

*Process: Make Straightforward Inferences*

---

### 2 – Complete Comprehension

The response shows understanding that Tom was confused because he thought Enemy Pie was supposed to smell bad, or that Tom was surprised because the pie his dad made (actually) smelled good.

*NOTE TO SCORERS: Students may express Tom's confused or surprised feelings in a variety of ways.*

*Examples:*

confused because he thought it was made with disgusting things

He didn't understand. It should taste horrible.

He felt unsure. Enemy Pie should smell bad.

surprised because it smelled really good

### 1 – Partial Comprehension

The response shows understanding that Tom was confused or surprised when he smelled Enemy Pie for the first time, but does not explain why.

*Examples:*

confused

He wondered what was going on.

Or, the response explains that Enemy Pie didn't smell the way he thought it would without providing the feeling.

*Examples:*

Enemy Pie shouldn't smell this good.

He thought the pie would smell bad.

He thought it would smell awful, but it didn't.

### 0 – No Comprehension

The response does not provide either the appropriate feeling or an explanation.

*Examples:*

He smelled something really good. *(Please note that this response does not provide a feeling or a clear explanation for why Tom was confused.)*

He felt hungry.

## Enemy Pie, Item 6

---

6. What did Tom think could happen when his enemy ate Enemy Pie? Write one thing.

*Process: Focus on and Retrieve Explicitly Stated Information*

---

### 1 – Acceptable Response

The response identifies one of the consequences of eating Enemy Pie from the list below.

*NOTE TO SCORERS: Ignore minor variations in phrasing from the text, as long as it is clear what is intended.*

#### *Consequences of Eating Enemy Pie:*

His hair would fall out.

His breath would stink.

He would go away.

Something bad would happen./He would get sick (or die).

### 0 – Unacceptable Response

The response does not provide any of the words or phrases in the list above. The response may repeat words from the question.

#### *Examples:*

He might like it.

He would become his friend.

Nothing would happen.

He would become his enemy.

## Enemy Pie, Item 7

---

7. What were the two things Tom's dad told Tom to do for Enemy Pie to work?

*Process: Focus on and Retrieve Explicitly Stated Information*

---

### 2 – Complete Comprehension

The response identifies both actions that make Enemy Pie work: 1) spending the day with his enemy and 2) being nice to him.

*NOTE TO SCORERS: Any responses that do not include specific reference to the amount of time that should be spent (a day) should not be credited.*

*Examples:*

be nice to his enemy for a whole day  
spend the whole day with Jeremy and be nice  
be nice and play with him for a day  
play all day with Jeremy and be friendly

### 1 – Partial Comprehension

The response provides one action that Tom was told to do by his Dad.

*Examples:*

be nice  
spend the day with him  
play and be nice

### 0 – No Comprehension

The response does not provide an accurate action that Tom was told to do by his Dad.

*Examples:*

play with him (*Please note that this is not one of the things Tom's dad told him to do and is too vague to be considered as a paraphrase of either spending the day or being nice.*)  
stop being enemies (*Please note that Tom's dad did not tell him to stop being enemies with Jeremy, nor did he tell him to be his friend.*)  
invite him over for dinner  
eat Enemy Pie

## Enemy Pie, Item 9

---

9. What surprised Tom about the day he spent with Jeremy?

*Process: Make Straightforward Inferences*

---

### **1– Acceptable Response**

The response shows understanding that Tom had a positive experience with Jeremy. The response may indicate that he enjoyed spending time with Jeremy, that Jeremy wasn't as bad as Tom expected, or that they had become friends.

*Examples:*

He was actually having fun with Jeremy.

They were getting along.

Jeremy wasn't so bad after all.

Jeremy was nice.

They became friends.

It was a good day.

### **0 – Unacceptable Response**

The response does not accurately describe what surprised Tom.

*Examples:*

Tom was surprised.

Jeremy was going to eat the Enemy Pie.

## Enemy Pie, Item 14

---

14. Use what you have read to explain why Tom’s dad really made Enemy Pie.

*Process: Interpret and Integrate Ideas and Information*

---

### 1 – Acceptable Response

The response demonstrates understanding that Tom’s dad’s plan for Enemy Pie was for Tom and Jeremy to become friends.

*NOTE TO SCORERS: The response does not need to explicitly state that Tom’s dad made them spend time together to be awarded credit.*

*Examples:*

to make them be friends and not enemies

He wanted them to be friends.

to get them to play together and to make them friends

He wanted them to be friends so he got them to play with each other.

to play a trick for Tom to see that Jeremy was nice after all (*Please note that this is an acceptable paraphrase of the boys becoming friends.*)

### 0 – Unacceptable Response

The response does not provide an appropriate explanation for why Tom’s dad really made Enemy Pie. The response may indicate that Tom’s dad wanted the boys to spend time together without specific reference to the intended outcome, or it may refer generally to Tom having no enemies without reference to Tom and Jeremy’s relationship.

*Examples:*

He made Tom play with Jeremy.

So they would get to know each other.

He thought it would work and make Jeremy leave.

He made the pie for them all to share.

## Enemy Pie, Item 15

---

15. What kind of person is Tom's dad? Give an example of what he did in the story that shows this.

*Process: Interpret and Integrate Ideas and Information*

---

### 2 – Complete Comprehension

The response describes one plausible character trait of Tom's dad that is central to his role in the story (e.g., helpful, caring, nice, good, smart, clever, tricky, secretive). In addition, the response provides one example of Tom's dad's actions that is evidence of the character trait.

*NOTE TO SCORERS: Traits may be expressed as a longer description, rather than as a single word.*

*Examples:*

He was caring because he wanted to help his son make friends.

He was smart in how he found a way for the boys to like each other.

He was the kind of person who kept secrets. He kept Tom from finding out that Enemy Pie was just a normal pie.

He was nice. He wanted Tom and Jeremy to get along.

Tom's dad was kind. He thought of a plan for his son to make friends.

### 1 – Partial Comprehension

The response provides one plausible character trait of Tom's dad that is central to his role in the story (e.g., helpful, caring, smart, clever, tricky, secretive). Traits may be expressed as a longer description, rather than as a single word.

*Examples:*

He was caring.

He was nice.

He was a good person.

He was a good dad.

He cared about his son.

He wanted to help Tom.

He was clever. He made a pie. *(Please note that 'he made a pie' is not an appropriate example of Tom's dad's cleverness.)*

### 0 – No Comprehension

The response does not provide an appropriate description of Tom's dad's character. The response may provide a general character trait of Tom's dad that is not supported by the text, or a vague description that demonstrates limited comprehension of the story without further textual support.



*Examples:*

Tom's dad was mean.

He was confused. *(Please note that this response describes Tom in the story.)*

He was a cook. He baked a pie. *(Please note that 'he was a cook' is not a character description.)*

Or, the response may provide an example of Tom's dad's actions without providing a character trait.

*Examples:*

He made Tom think Enemy Pie would work.

He kept the recipe a secret.

He told Tom to play with Jeremy.

## Enemy Pie, Item 16

---

16. What lesson might you learn from this story?

*Process: Examine and Evaluate Content, Language, and Textual Elements*

---

### 1– Acceptable Response

The response provides an evaluation of the main message or theme of the story that acknowledges the importance of giving a relationship the chance to grow before deciding whether someone is your friend, or indicates that it is possible to change how you feel about someone.

*Examples:*

Don't judge someone before you know them.

You can make friends if you give it a chance.

Your enemy can become your friend.

Try to like your enemy. They might become your friend.

### 0 – Unacceptable Response

The response does not provide a plausible evaluation of the main message or theme of the story. The response may provide a main message that is too general, or may refer to a message that is not central to the story.

*Examples:*

Be nice to everyone.

You shouldn't have enemies. *(Please note that this is an inaccurate generalization of the main message.)*

Don't eat Enemy Pie.

It isn't nice to exclude someone from your party.

Text for “Discover the Fun of Day Hiking” can be found in the brochure located in the back of this publication.

# Discover the Fun of Day Hiking

**Looking for something fun and interesting  
to do at home or on holiday?**



One of the greatest ways to enjoy the outdoors is hiking, and day hiking is the most popular kind. It doesn't have to take much time or need any special equipment.

**Questions** Discover the Fun of Day Hiking



Take out the leaflet called **Discover the Fun of Day Hiking**. The questions in this section are about this leaflet.



Raise your hand if you do not have the leaflet.

1. What is the **main** message the leaflet gave you about hiking?

- (A) It is expensive and dangerous.
- (B) It is the best way to see animals.
- (C) It is healthy and fun.
- (D) It is only for experts.

2. Give **two** interesting things the leaflet said you might see on a day hike.



1.

2.

3. What are two things the leaflet told you to keep in mind when you are hiking in a **group**?



1.



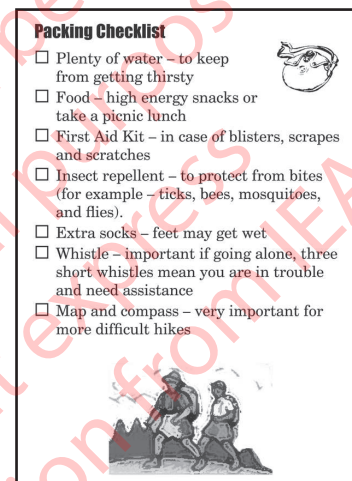
2.

★ **Correct Answer**

4. Which section of the leaflet told you to wear the right clothes for the weather?
- (A) Discover the Fun of Day Hiking
  - ★ (B) Planning Your Day Hike
  - (C) Packing Checklist
  - (D) Keeping Safe on Your Day Hike

Look at the section called *Packing Checklist*. Use it to answer Questions 5 and 6.

5. Why should you take extra socks on your hike?
- ★ (A) feet may get wet
  - (B) weather may get cold
  - (C) in case of blisters
  - (D) for a friend



6. What should you do if you get in trouble while on your hike?
- (A) have a high energy snack
  - ★ (B) blow your whistle three times
  - (C) put on more insect repellent
  - (D) yell for help as loud as you can

★ **Correct Answer**

Look at the section called *Keeping Safe*. Use it to answer Questions 7 and 8.

7. What should you do to avoid getting tired too soon?

- (A) start early
- (B) stay on hiking trails
- ★ (C) pace yourself
- (D) be careful where you walk

**Keeping Safe on Your Day Hike**

! **Start early.** This will give you plenty of time to enjoy your hike and still get back before dark.

! **Stay on hiking trails** unless you know the area.

! **Pace yourself.** Do not hike too quickly so that you can save your energy. When in a group, go only as fast as the slowest member.

! **Be careful where you are walking.** Watch out for things you might trip over like loose rocks, piles of leaves, and sticks. Take care through slippery areas. If you need to go into water, make sure you know how deep it is.

! **Look out for wildlife.**

Be careful where you put your feet, when you pick up sticks or rocks, and before you sit down. Never approach animals in the wild. They may look cute and harmless, but they can be unpredictable and very protective of their territory.



**IMPORTANT:** Tell someone about where you are going hiking and when you expect to return. This could help in case something happens and you get into trouble. Let him or her know when you get back.

8. Why is it important to tell someone when you plan to return from your hike?



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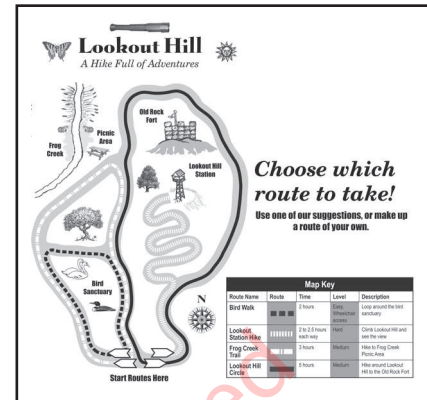
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★ Correct Answer

Use the information about the *Lookout Hill Hike* to answer Questions 9 through 12.

9. Which route would you choose if you wanted to take the shortest hike?

- ★ (A) Bird Walk
- (B) Lookout Station Hike
- (C) Frog Creek Trail
- (D) Lookout Hill Circle



10. Which kind of people would be most able to go on the Lookout Station Hike?

- (A) people who are in a hurry
- (B) people who have small children
- (C) people who like to watch birds
- ★ (D) people who are fit and strong

★ Correct Answer

11. What are **two** things you can learn by studying the map key?



1.

---

---



2.

---

---

12. Use the map of Lookout Hill and the map key to plan a hike.  
Check which route you would choose.

\_\_\_\_\_ Bird Walk

\_\_\_\_\_ Lookout Station Hike

\_\_\_\_\_ Frog Creek Trail

\_\_\_\_\_ Lookout Hill Circle

Give **two** reasons from the leaflet why you chose this route.



1.

---

---



2.

---

---

## Day Hiking, Item 2

---

2. Give two interesting things the leaflet said you might see on a day hike.

*Process: Focus on and Retrieve Explicitly Stated Information*

---

### 1 – Acceptable Response

The response lists two sights as mentioned in the text. See the list below for appropriate sights.

### 0 – Unacceptable Response

The response lists fewer than two sights as mentioned in the text. The response may be vague or inappropriate.

*Examples:*

New and exciting things.

First aid kit and new things.

### Appropriate Things You Might See on a Day Hike

*NOTE TO SCORERS: The response must provide two acceptable reasons from the list below.*

*Examples:*

Plants/Nature

Birds/ Animals/ Wildlife/ Nature

Caves

Waterfalls

Hidden valleys

Forts

Remains of buildings

Any of the locations on the map (e.g., lookout station, picnic area, frog creek)

Beautiful places

New places

Spectacular views



## Day Hiking, Item 3

---

3. What are two things the leaflet told you to keep in mind when you are hiking in a group?

*Process: Interpret and Integrate Ideas and Information*

---

### 2 – Complete Comprehension

The response states two suggestions for hiking in a group; one about the ability and the other about the interests of the group members.

*Examples of Ability:*

Everyone should be able to do it.

Go only as fast as the slowest person in the group.

Choose a hike that suits everybody. [ability]

*Examples of Interest:*

Choose a hike that suits everybody. [interest]

It should be fun and interesting for everyone.

Consider everyone when choosing where to go.

*NOTE TO SCORERS: Both correct responses can be expressed in the same sentence.*

*Note that “suits everybody” can only be used once: either for ability or interest.*

### 1 – Partial Comprehension

The response states only one suggestion for hiking in a group that takes into account either the ability or the interests of the group members.

### 0 – No Comprehension

The response does not provide an accurate or acceptable suggestion for hiking in a group. It may provide a general suggestion for hiking not specific to being in a group, or a suggestion about being in a group that does not come from the leaflet.

*Examples:*

Pack a first aid kit.

Stay in your group.

Always tell someone when you plan to be finished with your hike.

## Day Hiking, Item 8

---

8. Why is it important to tell someone when you plan to return from your hike?

*Process: Make Straightforward Inferences*

---

### 1 – Acceptable Response

The response demonstrates understanding that someone can help you in case something happens (e.g., you get into trouble or lost) and you don't return on time.

*Examples:*

Because if you are not back in time someone will know there is something wrong and will find help.

In case you get lost.

### 0 – Unacceptable Response

The response may provide a reason that does not show an understanding of the potential danger if the hiker does not return on time (lost or in trouble), or it may provide an inaccurate or inappropriate reason.

*Examples:*

So they will know when you will return.

So they know where you are.

So they will know you are not lost.

## Day Hiking, Item 11

---

11. What are two things you can learn by studying the map key?

*Process: Examine and Evaluate Content, Language, and Textual Elements*

---

### 2 – Complete Comprehension

The response includes any two pieces of information that can be learned by studying the map key, either specific or general, as listed below.

### 1 – Partial Comprehension

The response includes only one thing that can be learned by studying the map key, either specific or general, as listed below.

### 0 – No Comprehension

The response does not include any accurate or relevant information that can be learned by studying the map key, either specific or general.

*Examples:*

How to use a map.

Where to start the routes.

## Things That Can Be Learned by Studying the Map Key

*NOTE TO SCORERS: The response must provide two acceptable reasons from the list below.*

### *Examples:*

time it takes for each hike

the difficulty level of each hike

symbols for each trail (route to take/which way to go/where it is)

a description of each hike

which hike is right for me/the best place to go

which is shortest, longest, or most challenging (or any specific facts about a particular hike from the table)

## Day Hiking, Item 12

---

12. Use the map of Lookout Hill and the map key to plan a hike.

Check which route you would choose.

Bird Walk

Lookout Station

Frog Creek

Lookout Hill Circle

Give two reasons from the leaflet why you chose this route.

*Process: Interpret and Integrate Ideas and Information*

---

### 2 – Complete Comprehension

*NOTE TO SCORERS: You will need to rely on the text and features of the map and map key to determine whether a reason is appropriate for a chosen route.*

The response indicates the selection of a route and provides two reasons related to the text for choosing the route. Note that the reasons must be appropriate for the chosen route or routes (e.g., “I like wildlife” would not be appropriate for the Lookout Station). Reasons may refer specifically to the text in the map key or may refer to features of the map.

### *Examples:*

Bird Walk. It is the easiest and shortest walk and you get to watch birds.

Lookout Station. I think it would have the best views and it is the most challenging hike.

Frog Creek Trail. You can take a picnic lunch. You can stop and see the birds at the bird sanctuary on the way.

Lookout Hill Circle. You can make a loop past the old fort. It is longer so you can enjoy more sights.

### 1 – Partial Comprehension

The response indicates the selection of a route and provides only one reason for choosing the route.

OR, it may provide two reasons that essentially refer to the same feature.

*Example:*

Bird Walk. It takes two hours. It is the shortest.

### 0 – No Comprehension

The response may or may not indicate the selection of a route. The reason for choosing the route is too general, vague, inaccurate, or not appropriate for the selection.

*Examples:*

I like to walk.

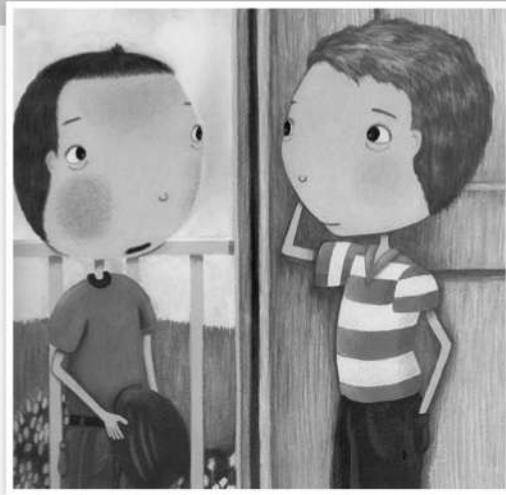
It looks interesting/fun.

Bird Walk. It is the longest hike.

I can enjoy nature.

I can get some exercise.

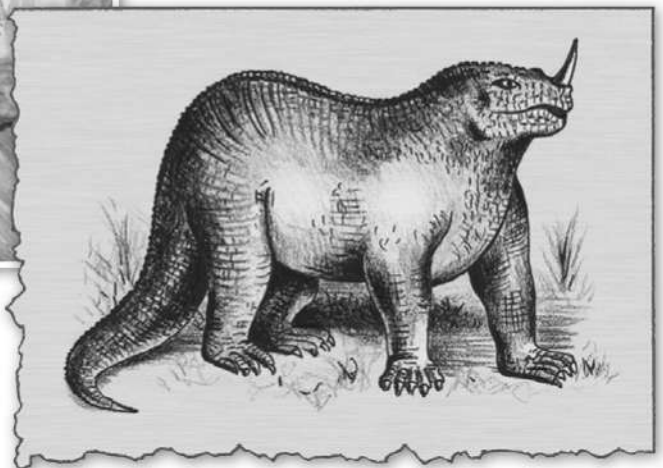
# PIRLS 2011



# Reader



Text for "The Giant Tooth Mystery" can be found in the PIRLS Reader booklet in the back of the publication.



**TIMSS & PIRLS**  
International Study Center  
Lynch School of Education, Boston College

## Questions The Giant Tooth Mystery

1. What is a fossil?
- (A) the surface of rocks and cliffs
  - (B) the bones of a giant
  - (C) the remains of very old living things
  - (D) the teeth of elephants

2. According to the article, why did some people long ago believe in giants?



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3. Where did Bernard Palissy find fossils?

- (A) on the cliffs
- (B) in the clay
- (C) by a river
- (D) on a path

★ Correct Answer

4. What was Bernard Palissy's new idea?



5. Why was Bernard Palissy put into prison?

- ★  (A) People were not open to new ideas.
- (B) He copied his ideas from Gideon Mantell.
- (C) He left tiny fossils in his pottery.
- (D) Studying fossils was forbidden in France.

6. Who found the fossil tooth in England?



- (A) Bernard Palissy
- ★  (B) Mary Ann Mantell
- (C) Richard Owen
- (D) Gideon Mantell

★ Correct Answer

7. What did Gideon Mantell know about reptiles that made the fossil tooth puzzling?

- (A) Reptiles had no teeth.
- (B) Reptiles were found under rocks.
- (C) Reptiles lived long ago.
- ★ (D) Reptiles gulped their food.

8. Gideon Mantell thought the tooth might have belonged to different types of animals. Complete the table to show what made him think this.

Type of animal	What made him think this
A plant eater	The tooth was flat with ridges.
 A giant creature	
 A reptile	

★ Correct Answer



9. Why did Gideon Mantell take the tooth to a museum?

- (A) to ask if the fossil belonged to the museum
- (B) to prove that he was a fossil expert
- ★  (C) to hear what scientists thought of his idea
- (D) to compare the tooth with others in the museum

10. A scientist showed Gideon Mantell an iguana tooth. Why was this important to Gideon Mantell?



---

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11. What did Gideon Mantell use when trying to figure out what the *Iguanodon* looked like?

- ★  (A) bones he collected
- (B) ideas from other scientists
- (C) pictures in books
- (D) teeth from other reptiles

★ Correct Answer

12. Look at the two pictures of the *Iguanodon*. What do they help you to understand?




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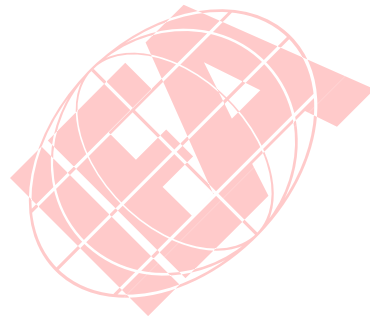
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13. Later discoveries proved that Gideon Mantell was wrong about what the *Iguanodon* looked like. Fill in the blanks to complete the table.

	What Gideon Mantell thought the <i>Iguanodon</i> looked like	What scientists today think the <i>Iguanodon</i> looked like
	The <i>Iguanodon</i> walked on four legs.	
		The <i>Iguanodon</i> had a spike on its thumb.
	The <i>Iguanodon</i> was 100 feet long.	

14. What were found that showed Gideon was wrong about what the *Iguanodon* looked like?

- (A) more fossil teeth
- (B) scientific drawings
- (C) living *Iguanodons*
- ★ (D) whole skeletons



★ Correct Answer

## Giant Tooth Mystery, Item 2

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2. According to the article, why did some people long ago believe in giants?

*Process: Make Straightforward Inferences*

---

### 1 – Acceptable Response

The response demonstrates understanding that people long ago believed in giants because they found huge bones/skeletons/fossils.

*NOTE TO SCORERS: Some students use the word ‘giant’ as a synonym for ‘big’ or ‘huge’. Such responses should be credited only where the meaning is made clear.*

*Examples:*

They found bones too big to belong to something they knew.

They found giant bones that were too big to be from the biggest hippo.

They found really big bones.

The bones were so big they must be from giants.

### 0 – Unacceptable Response

The response does not demonstrate understanding that people long ago believe in giants because they found huge bones/skeletons/fossils.

*Examples:*

Giants are really big.

They found giant bones. *(Please note that the use of ‘giant’ is ambiguous.)*

They found things that must belong to giants.

They found dinosaur bones.

They found bones from giants.

## Giant Tooth Mystery, Item 4

---

4. What was Bernard Palissy’s new idea?

*Process: Interpret and Integrate Ideas and Information*

---

### 1 – Acceptable Response

The response demonstrates understanding that Palissy’s new idea was that some fossils belonged to animals that no longer lived on earth, had completely disappeared, or were extinct.

*Examples:*

Fossils could be from extinct animals.

Some belonged to creatures no longer living on earth.

His idea was that some animals had completely disappeared!

## 0 – Unacceptable Response

The response does not demonstrate understanding of Palissy’s new idea. It might relate to Palissy’s idea that fossils once belonged to living creatures, or may state a fact about Palissy’s work.

### *Examples:*

Fossils were from the remains of living creatures.

Reptiles were extinct.

He found fossils in his clay.

He was a famous pottery maker.

He studied fossils.

## Giant Tooth Mystery, Item 8

8. Gideon Mantell thought the tooth might have belonged to different types of animals. Complete the table to show what made him think this.

Type of animal	What made him think this
A plant eater	The tooth was flat with ridges
A giant creature	
A reptile	

*Process: Interpret and Integrate Ideas and Information*

*NOTE TO SCORERS: Each of the two parts of this item will be scored separately in its own 1-point coding block.*

The entire item, with acceptable responses for each of the two parts and the corresponding coding blocks, should look like this:

Type of animal	What made him think this	
<b>A plant eater</b>	<b>The tooth was flat with ridges</b>	
<b>A giant creature</b>	The response identifies the large size of the fossil tooth (as big as an elephant’s tooth)	<div style="border: 1px solid black; padding: 2px; display: inline-block; text-align: center;">1</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; text-align: center;">0</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; text-align: center;">8</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; text-align: center;">9</div>
<b>A reptile</b>	The response indicates that: 1) the rock in which it was found was the kind of rock where reptile fossils were found/it was found where reptiles had lived, OR 2) the fossil tooth was similar to/looked like an iguana/reptile tooth	<div style="border: 1px solid black; padding: 2px; display: inline-block; text-align: center;">1</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; text-align: center;">0</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; text-align: center;">8</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; text-align: center;">9</div>

## A GIANT CREATURE

### 1 – Acceptable Response

The response shows understanding of the characteristics that indicate the fossil tooth could belong to a giant creature.

Type of animal	What made him think this
A plant eater	The tooth was flat with ridges
A giant creature	The response identifies the large size of the fossil tooth (as big as an elephant's tooth)
A reptile	The response indicates that: 1) the rock in which it was found was the kind of rock where reptile fossils were found/it was found where reptiles had lived, OR 2) the fossil tooth was similar to/looked like an iguana/reptile tooth

### 0 – Unacceptable Response

The response does not show understanding of the characteristics that indicate the fossil tooth could belong to a giant creature. The response may refer to the text at the beginning of the passage about fossils in general, rather than to Gideon's hypotheses about the fossil tooth.

*Examples:*

Some thought the big bones came from large animals.

It was worn down.

It looked like an elephant's tooth. *(Please note that this is an inaccurate response. The text states, "it looked nothing like an elephant's tooth.")*

## A REPTILE

### 1 – Acceptable Response

The response shows understanding of the characteristics that indicate the fossil tooth could belong to a reptile.

Type of animal	What made him think this
A plant eater	The tooth was flat with ridges
A giant creature	The response identifies the large size of the fossil tooth (as big as an elephant's tooth)
A reptile	The response indicates that: 1) the rock in which it was found was the kind of rock where reptile fossils were found/it was found where reptiles had lived, OR 2) the fossil tooth was similar to/looked like an iguana/reptile tooth

## 0 – Unacceptable Response

The response does not show understanding of the characteristics that indicate the fossil tooth could belong to a reptile.

### *Examples:*

It eats plants.

Reptiles gulped their food.

## Giant Tooth Mystery, Item 10

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10. A scientist showed Gideon Mantell an iguana tooth. Why was this important to Gideon Mantell?

### *Process: Interpret and Integrate Ideas and Information*

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## 1 – Acceptable Response

The response demonstrates understanding that the iguana tooth provided evidence that supported Gideon Mantell's theory that the fossil tooth might have belonged to a giant reptile.

### *Examples:*

The iguana tooth showed his fossil could be from a reptile.

It helped him find out what type of animal the tooth belonged to.

The tooth proved he was right.

It gave him proof for what he thought all along.

Or, the response demonstrates a more general understanding that the iguana tooth looked like the fossil tooth.

### *Examples:*

The iguana tooth looked like the fossil tooth.

He could see that they looked the same.

He could tell it was the same one.

He had spent years looking for a matching tooth.

It was flat and had ridges.

## 0 – Unacceptable Response

The response does not demonstrate understanding of the significance of the iguana tooth.

### *Examples:*

He wanted to be famous.

He thought it would be interesting to see an iguana's tooth.

He wanted to learn more about reptiles.

It showed he was clever. *(Please note that this response is too vague as it focuses on*

*his personal characteristics rather than his discovery.)*

He wanted to compare the teeth. *(Please note that this response fails to indicate the significance of the comparison.)*

## Giant Tooth Mystery, Item 12

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12. Look at the two pictures of the Iguanodon. What do they help you to understand?

*Process: Examine and Evaluate Content, Language, and Textual Elements*

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### 2 – Complete Comprehension

The response demonstrates understanding that the pictures show the changes in scientific ideas, or that the pictures show different people's ideas about the Iguanodon.

*Examples:*

that scientists today think the Iguanodon looked different than Gideon Mantell did

To show how people's ideas about what the Iguanodon looked like changed.

To show that different people had different ideas about what it looked like.

how different the ideas were

Gideon Mantell thought the bones showed the Iguanodon walked on all four legs, but later scientists changed their minds.

Or, the response indicates that the pictures illustrate the mistakes that Gideon Mantell or other people might have made.

*Examples:*

To show that Gideon got some things wrong.

that people sometimes make mistakes

### 1 – Partial Comprehension

The response demonstrates a more general understanding that the Iguanodons looked different in the two pictures.

*Example:*

To show they look different.

Or, the response describes a difference between the two pictures without reference to changes in scientific ideas or what different people might have believed.

*Example:*

One has 4 legs, the other has 2.

Or, the response provides an explicit reference to one of the pictures without reference to changes in scientific ideas or what different people might have believed.

*Example:*

That Gideon thought it had a horn.



## 0 – No Comprehension

The response does not demonstrate understanding of the purpose of the illustrations. The response may describe a specific feature from one of the pictures, or give a description of what the illustrations have in common.

Or, the response may provide an inaccurate interpretation that the Iguanodon itself changed in appearance over time, rather than people's ideas.

### *Examples:*

To show what they looked like.

They help you understand how the Iguanodon changed over the years.

They show me they ate plants.

They had 4 legs.

## Giant Tooth Mystery, Item 13

13. Later discoveries proved that Gideon Mantell was wrong about what the Iguanodon looked like. Fill in the blanks to complete the table.

What Gideon Mantell thought the Iguanodon looked like	What scientists today think the Iguanodon looked like
The Iguanodon walked on four legs	
	The Iguanodon had a spike on its thumb
The Iguanodon was 100 feet long	

*Process: Interpret and Integrate Ideas and Information*

*NOTE TO SCORERS: Each of the three parts of this item will be scored separately in its own 1-point coding block.*

The entire item, with acceptable responses for each of the three parts and the corresponding coding blocks, should look like this:

What Gideon Mantell thought the Iguanodon looked like	What scientists today think the Iguanodon looked like					
The Iguanodon walked on four legs	The Iguanodon (sometimes) walked/ stood on two/hind legs	→ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td></tr><tr><td>0</td></tr><tr><td>8</td></tr><tr><td>9</td></tr></table>	1	0	8	9
1						
0						
8						
9						
The Iguanodon had a horn (on its head/face/nose) OR, the spike was on its head/face/nose	The Iguanodon had a spike on its thumb	→ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td></tr><tr><td>0</td></tr><tr><td>8</td></tr><tr><td>9</td></tr></table>	1	0	8	9
1						
0						
8						
9						
The Iguanodon was 100 feet long	The Iguanodon was 30 feet (9 metres) long	→ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td></tr><tr><td>0</td></tr><tr><td>8</td></tr><tr><td>9</td></tr></table>	1	0	8	9
1						
0						
8						
9						

### 1 – Acceptable Response

The response shows understanding of the difference in the way that Gideon Mantell and scientists today think the Iguanodon walked or stood.

What Gideon Mantell thought the Iguanodon looked like	What scientists today think the Iguanodon looked like
<b>The Iguanodon walked on four legs</b>	The Iguanodon (sometimes) walked/ stood on two/hind legs
The Iguanodon had a horn (on its head/face/nose) OR, the spike was on its head/face/nose	<b>The Iguanodon had a spike on its thumb</b>
<b>The Iguanodon was 100 feet long</b>	The Iguanodon was 30 feet (9 metres) long

### 0 – Unacceptable Response

The response does not show understanding of the way scientists today think the Iguanodon walked or stood.

*Examples:*

two

It stood.

### 1 – Acceptable Response

The response shows understanding of the difference in where Gideon Mantell and scientists today think the Iguanodon had a spike.

What Gideon Mantell thought the Iguanodon looked like	What scientists today think the Iguanodon looked like
<b>The Iguanodon walked on four legs</b>	The Iguanodon (sometimes) walked/ stood on two/hind legs
The Iguanodon had a horn (on its head/face/nose) OR, the spike was on its head/face/nose	<b>The Iguanodon had a spike on its thumb</b>
<b>The Iguanodon was 100 feet long</b>	The Iguanodon was 30 feet (9 metres) long

### 0 – Unacceptable Response

The response does not show understanding of where Gideon Mantell thought the Iguanodon had a spike.

*Examples:*

horn on its thumb

spike on its back

did not have a spike on its thumb

### 1 – Acceptable Response

The response shows understanding of the difference in what Mantell and scientists today think was the length of the Iguanodon.

<b>What Gideon Mantell thought the Iguanodon looked like</b>	<b>What scientists today think the Iguanodon looked like</b>
<b>The Iguanodon walked on four legs</b>	The Iguanodon (sometimes) walked/ stood on two/hind legs
The Iguanodon had a horn (on its head/face/nose) OR, the spike was on its head/face/nose	<b>The Iguanodon had a spike on its thumb</b>
<b>The Iguanodon was 100 feet long</b>	The Iguanodon was 30 feet (9 metres) long

### 0 – Unacceptable Response

The response does not show understanding of how long scientists today think the Iguanodon was.

*Examples:*

It was not 100 feet long.

5 feet long



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Lynch School of Education, Boston College

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