

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

Advanced
• Integrate ideas and information across texts to provide reasons and explanations.
High
• Make inferences and interpretations with text-based support.
Intermediate
• Make straightforward inferences.
Low
• Locate and retrieve information from different parts of the text.

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.

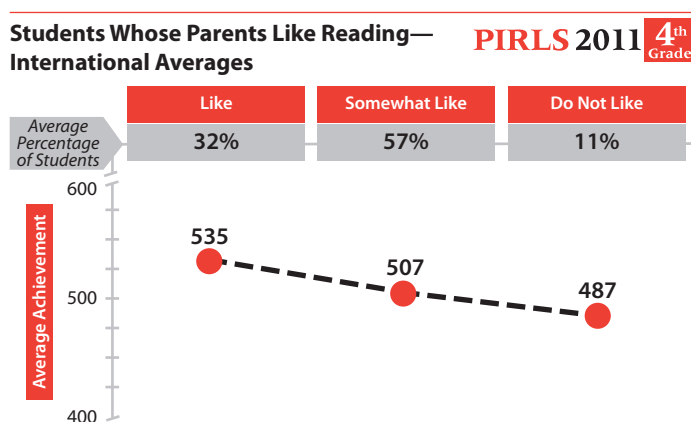
Generally, the PIRLS 2011 participants with the highest achievement overall also had the highest achievement in both reading processes. Nevertheless, many top-performing countries had a relative strength in the interpreting, integrating, and evaluating reading comprehension skills and strategies compared 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.

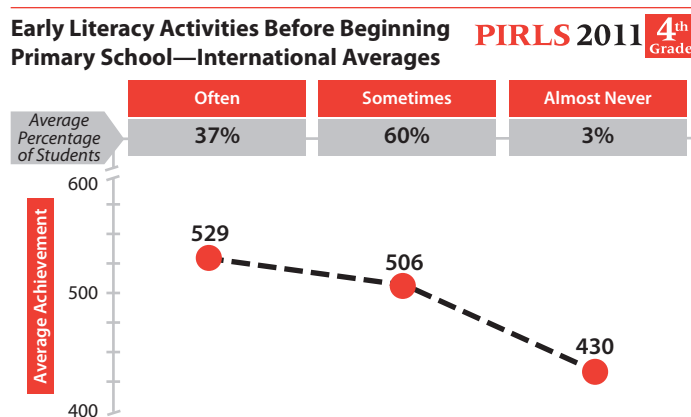
Children also had higher reading achievement by the fourth grade if their parents reported that their children started school able to do early literacy tasks (e.g., read some sentences and write some words).



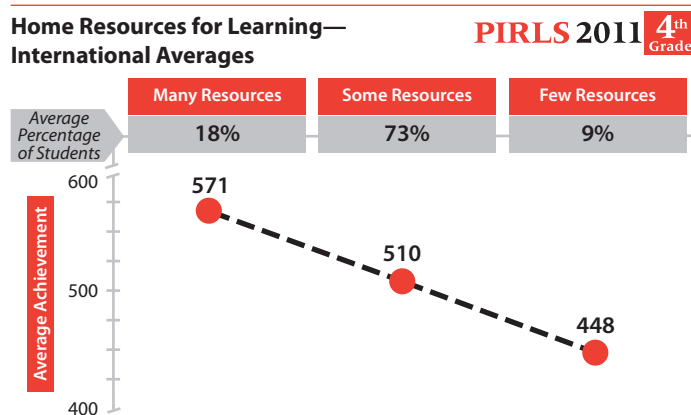
For most children, the home provides modeling and direct guidance in effective literacy practices. Young children who see adults and older children reading or using texts in different ways are learning to appreciate and use printed materials. PIRLS 2011 categorized students on the Parents Like Reading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



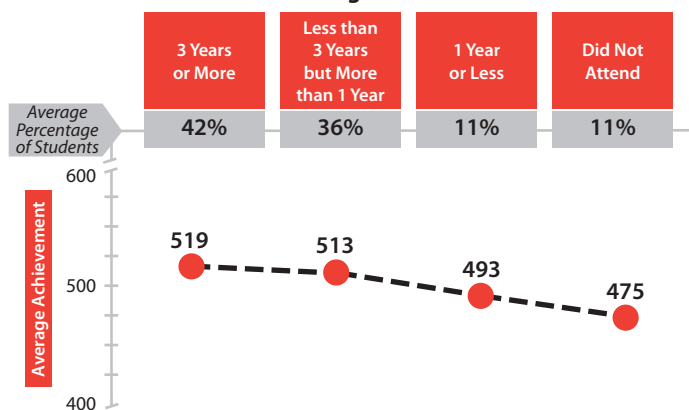
Of course, home resources also can play an important role in acquiring reading literacy skills. PIRLS used the parents' reports on the availability of key home resources to create the Home Resources for Learning scale, including parents' education, parents' occupation, books in the home, and study supports. 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**.

Students Attended Preprimary Education—International Averages

PIRLS 2011 4th 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.

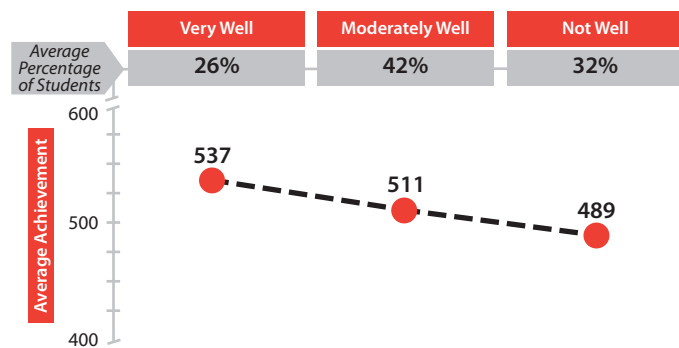
According to the *PIRLS 2011 Encyclopedia*, some countries already have mandatory preprimary education and some have nearly 100 percent enrollment even though attendance is not mandatory. Of course, school policies of entering primary school at older ages permit opportunities for more years of preschool 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 4th Grade

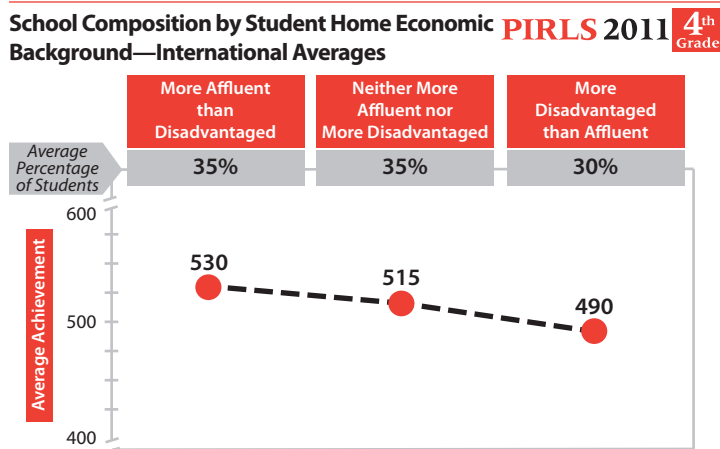


Successful Schools Tend to Be Well-resourced

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

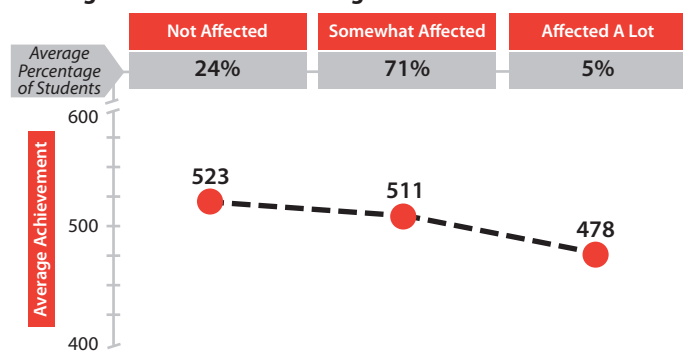


more students from affluent than from economically disadvantaged homes, and these students had the highest average achievement. At the other end of the range, 30 percent of students attended schools with relatively more students from economically disadvantaged homes, and these students had the lowest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

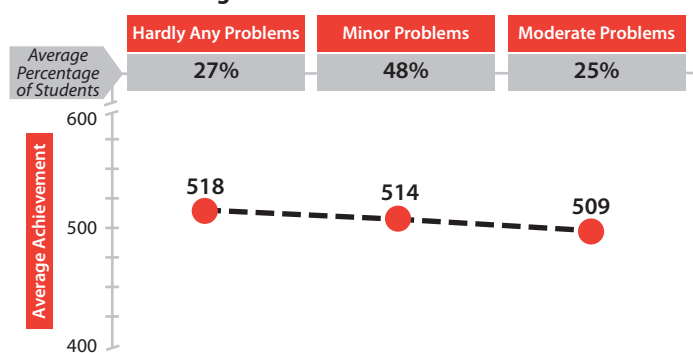
Many countries were fortunate to have very few, if any, students in schools where instruction was **Affected A Lot** by resource shortages. However, this was a crucial problem in some countries. On average, reading achievement for students in such poorly-resourced schools was substantially lower (by 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 4th Grade



Teacher Working Conditions— International Averages

PIRLS 2011 4th 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.

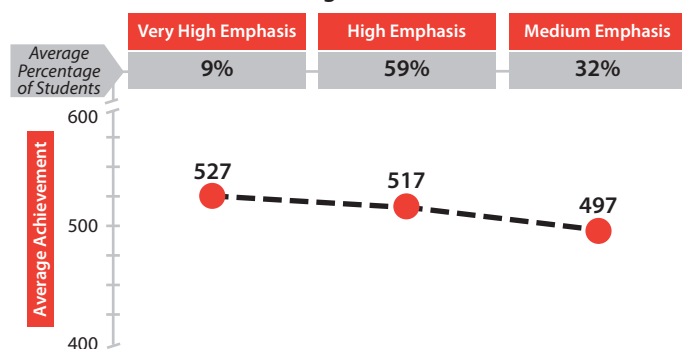
On average, there was a direct correspondence between average reading achievement and principals' reports, with higher emphasis on academic success related to higher average reading achievement. However, across the fourth grade countries, nine percent of the students attended schools where the principal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

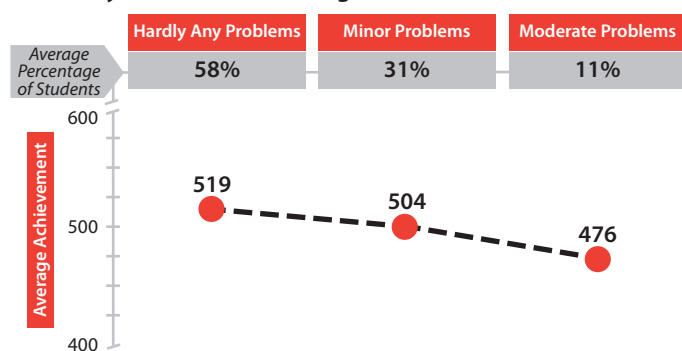
In contrast, schools with discipline and safety problems are not conducive to high achievement. Students who attended schools with disorderly environments and who reported more frequent bullying had much lower achievement than their counterparts in safe and orderly schools. The sense of security that 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.

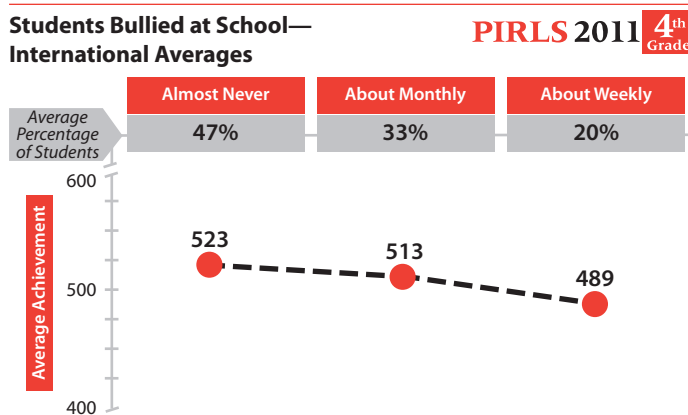
Principals' School Emphasis on Academic Success—International Averages **PIRLS 2011** 4th Grade



Principals' Problems with School Discipline and Safety—International Averages **PIRLS 2011** 4th 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.

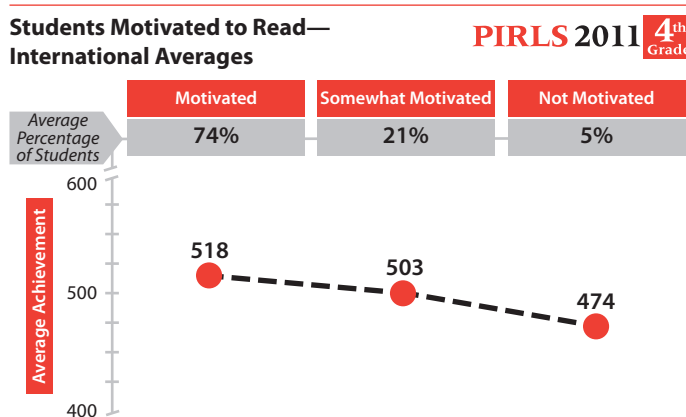
The PIRLS 2011 Teacher Career Satisfaction scale was positively related to average reading achievement, in that, internationally, students with **Satisfied** teachers (54%) had higher achievement than those with teachers that were

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

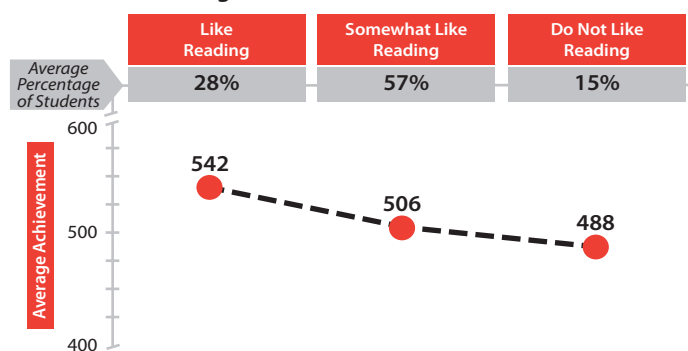
Each successive PIRLS assessment has shown a strong positive relationship within countries between student attitudes toward reading and their reading achievement. The relationship is bidirectional, with attitudes and achievement mutually influencing each other. Because spending time reading is so fundamental 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 4th Grade



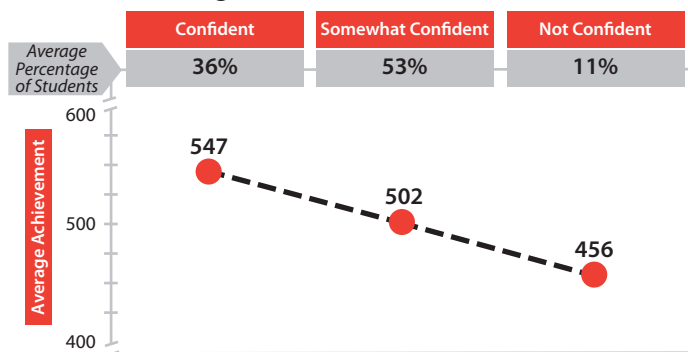
It seems, however, that although many students understand the value of reading, on average, substantially fewer reported liking it—only about one-fourth. The Students Like Reading scale was based on students’ degree of agreement with six statements, such as “I read only if I have to” (reverse coded), “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 4th 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%).

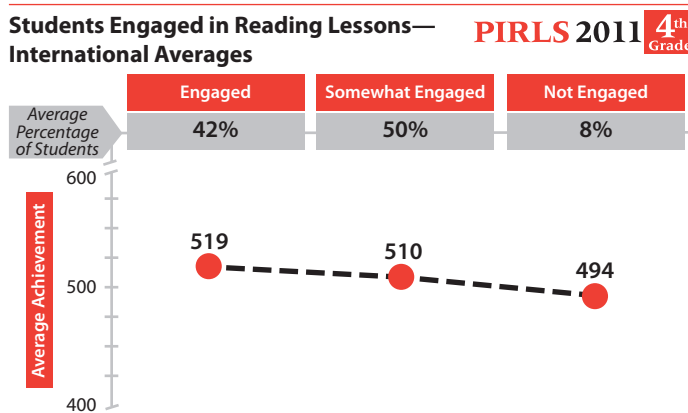
Engaging Instruction Related to Higher Reading Achievement

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.

