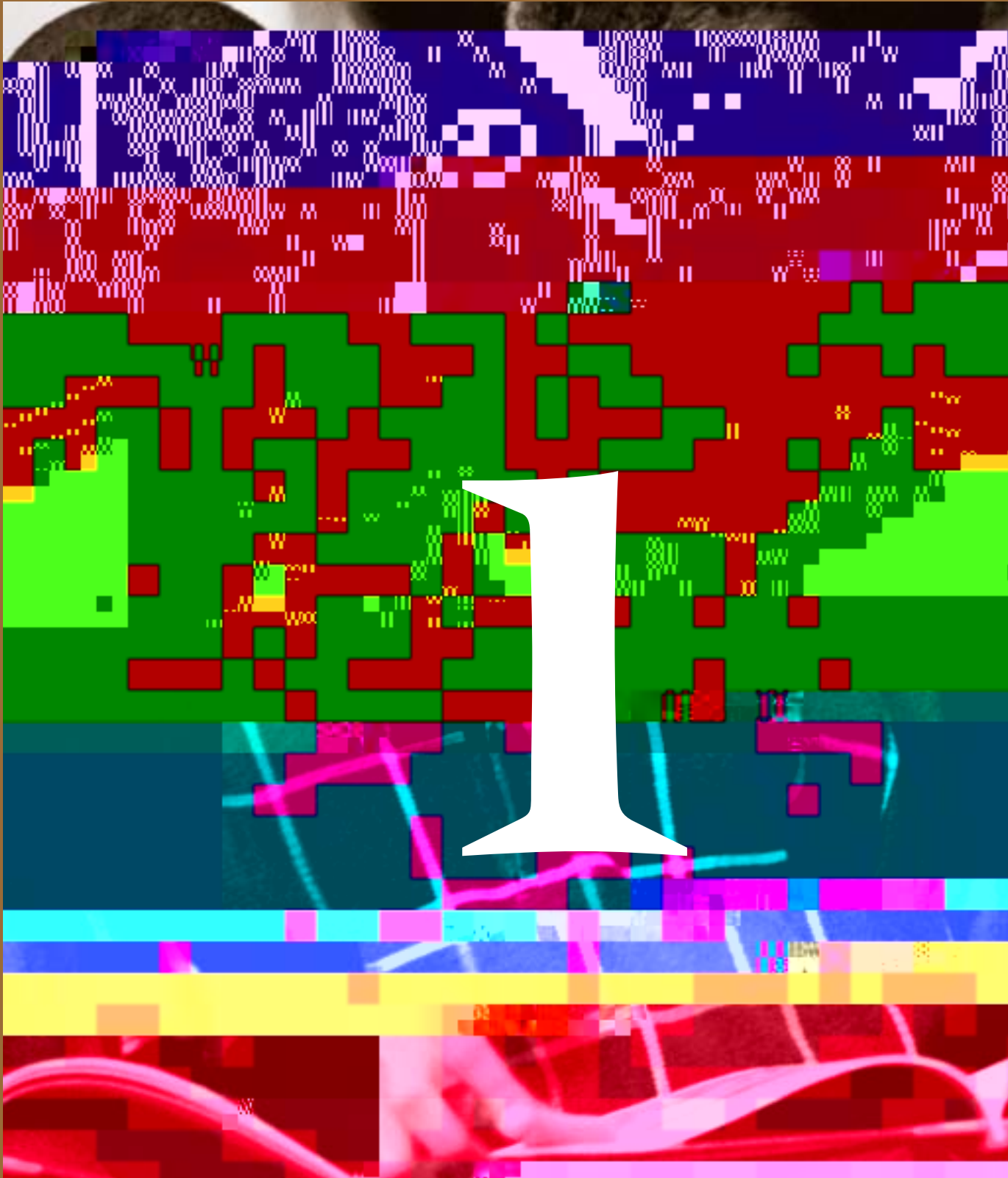


# PIRLS

## **Chapter 1**



# Chapter 1

## International Student Achievement in Reading

*Chapter 1 summarizes reading achievement at the fourth grade for each of the countries that participated in PIRLS 2001. The average and range in performance are presented for participating countries, and gender differences also are provided.*

## H D C D ffe Read Ac e e ?

Exhibit 1.1 presents the distribution of student achievement in reading for the 35 countries that participated in PIRLS 2001. Countries are shown in decreasing order of average (mean) scale score, together with an indication of whether the country average is significantly higher or lower than the international average.<sup>1</sup>

and the next higher- or lower-performing country, but the range in performance across the 35 countries was very large. Across countries, achievement in reading literacy ranged from an average of 561 for Sweden to 327 for Belize. The dark boxes at the midpoints of the distributions show the 95 percent confidence intervals around the average achievement in each country.<sup>3</sup>

Achievement for each country is shown for the 25th and 75th percentiles as well as for the 5th and 95th percentiles.<sup>4</sup> Each percentile point indicates the percentages of students performing below and above that point on the scale. For example, 25 percent of the fourth-grade students in each country performed below the 25th percentile for that country, and 75 percent performed above the 25th percentile. The range between the 25th and 75th percentiles represents performance by the middle half of the students. In most countries, the range of performance for the middle group was around 100 scale-score points. In contrast, performance at the 5th and 95th percentiles represents the extremes in both lower and higher achievement. The range of performance between these two score points, which includes 90 percent of the population, was 200 to 300 points in most countries – approximately the same as the difference in average performance across countries.

Exhibit 1.2 compares overall mean achievement among individual countries. This figure shows whether or not the differences in average achievement between pairs of countries are statistically significant. Selecting a country of interest and reading across the table, a triangle pointing up indicates significantly higher performance than the comparison country listed across the top; absence of a symbol indicates no significant difference in performance; and a triangle pointing down indicates significantly lower performance.

The data in Exhibit 1.2 further illustrate that, when ordered by average achievement, adjacent countries often did not significantly differ from each other, although the differences in achievement between the high-performing and low-performing countries were very large. Because of this wide range in perform-

**PIRLS found substantial differences in performance across and within countries.**

3 See the “IRT Scaling and Data Analysis” section of Appendix A for more details about calculating standard errors and confidence intervals for the PIRLS statistics.

4 Tables of the percentile values and standard deviations for all countries are presented in Appendix B.



Figure 1.2: Mean Achievement in Reading Literacy



SOURCE: IEA Progress in International Reading Literacy Study (PIRLS) 2001.

● Achievement in reading literacy  
▼ Achievement in reading literacy





darkened). In all countries, girls had significantly higher achievement than boys. Italy had an 8-point difference and all other countries had differences of 11 points or more. The international average was 20 points. Countries with a difference of 25 points or more included Moldova (25 points), New Zealand, Iran, and Belize (27 points), and Kuwait (48 points).

Exhibit 1.4 provides information on gender differences in reading achievement among students with high performance compared to those in the middle of the achievement distribution. For each country, score levels were computed for the highest-scoring 25 percent of students, called the upper quartile; for the top-scoring 50 percent of students, called the median (or top half) level; and for the top-scoring 75 percent, comprising students reaching the lower quartile and higher. The percentages of girls and boys in each country reaching each of the three levels were computed. For equitable performance, 25 percent each of girls and boys should have reached the upper quartile, 50 percent each the median level, and 75 percent each the lower quartile.

On average, across countries, significantly more girls than boys reached each quartile of their country's achievement distribution. More specifically, 29 percent of girls compared with 21 percent of boys reached the upper quartile, 55 percent compared with 45 percent reached the median level, and 79 percent compared with 71 percent reached the lower quartile. By subtraction, it can be determined that fewer boys (8 percent, on average) than girls reach the lowest quartile of achievement, and that 29 percent of boys are below the lowest quartile compared to 21 percent of girls. Statistically significant gender differences favoring girls at each quartile were consistent across countries, with only a few exceptions (Italy and the United States at the upper quartile, France at the median level, and Colombia and Morocco at the lower quartile).



Figure 1.3: Average Reading Achievement by Gender

	48 (0.9)	545 (2.6)	●	52 (0.9)	537 (2.7)	8 (2.5)
	48 (0.9)	531 (2.7)	●	52 (0.9)	520 (3.0)	11 (3.3)
	50 (1.2)	428 (5.1)	●	50 (1.2)	416 (4.7)	12 (4.3)
2a		49				



**Table 1.4: Performance of Grade 5 Students in Reading**

Country	Score (SD)	Proficiency Level	Country	Score (SD)	Proficiency Level	Country	Score (SD)	Proficiency Level	Country	Score (SD)	Proficiency Level					
Algeria	28 (2.3)	●	Bahrain	22 (2.0)	●	Chile	54 (2.7)	●	Costa Rica	46 (2.8)	●	Cuba	78 (2.5)	●	Dominican Republic	72 (2.9)
Armenia	29 (2.1)	●	Belize	21 (1.9)	●	Colombia	55 (2.0)	●	Czechia	45 (2.1)	●	Cyprus	80 (1.8)	●	Ecuador	71 (2.2)
Australia	30 (1.7)	●	Bolivia	20 (1.7)	●	Costa Rica	55 (2.1)	●	Dominican Republic	44 (2.4)	●	Egypt	79 (1.7)	●	El Salvador	70 (2.3)
* Austria	29 (1.5)	●	Brazil	21 (1.5)	●	Cuba	54 (1.7)	●	Czechia	46 (1.5)	●	Egypt	79 (1.1)	●	Guatemala	71 (1.2)
Bahrain	28 (2.3)	●	Bulgaria	22 (1.9)	●	Dominican Republic	52 (2.5)	●	Ecuador	48 (2.5)	●	El Salvador	77 (2.1)	●	Honduras	74 (2.5)
Belgium	30 (1.7)	●	Burkina Faso	20 (1.5)	●	Ecuador	55 (1.9)	●	El Salvador	45 (2.1)	●	Guatemala	80 (1.4)	●	Hungary	71 (1.7)
Bolivia	27 (1.8)	●	Burkina Faso	23 (1.5)	●	El Salvador	54 (1.9)	●	El Salvador	46 (2.2)	●	Hungary	79 (1.7)	●	Indonesia	72 (1.8)
<sup>2a</sup> Brazil	29 (1.8)	●	Burkina Faso	21 (1.5)	●	El Salvador	55 (2.2)	●	El Salvador	45 (2.0)	●	Hungary	79 (1.6)	●	Kenya	71 (1.7)
Brazil	27 (1.4)	●	Burkina Faso	23 (1.5)	●	El Salvador	52 (1.9)	●	El Salvador	48 (1.8)	●	Hungary	77 (1.4)	●	Lebanon	73 (1.7)
Bulgaria	28 (1.5)	●	Burkina Faso	22 (1.2)	●	El Salvador	54 (1.5)	●	El Salvador	46 (1.6)	●	Hungary	78 (1.2)	●	Malaysia	72 (1.5)
<sup>2a</sup> Burkina Faso	29 (2.1)	●	Burkina Faso	21 (2.1)	●	El Salvador	55 (2.5)	●								

SOURCE: IEA Progress in International Reading Literacy Study (PIRLS), 2001.