

Chapter **7**

Mapping the global literacy challenge

Enhancing the literacy skills and practices of all individuals worldwide is the overarching objective of the EFA literacy goal, with a particular focus on developing countries. Drawing upon an array of measures and assessments, this chapter highlights major trends and patterns of adult and youth literacy in different regions, nations and locales. Though the trends are positive, they are insufficient to meet the literacy goal.

Illiteracy remains prevalent among women, the elderly, in rural communities and among members of poor households. Opportunities for acquiring literacy are especially limited among socially excluded groups such as the indigenous, the nomadic, the migrant, the homeless, the internally displaced and people with disabilities. New, direct measures of literacy that go beyond conventional ones – which have been based largely on self-assessments, and expressed as a dichotomy between ‘illiterates’ and ‘literate’ – indicate that the scale and scope of the global literacy challenge are greater than previously thought.

An understanding of the states of literacy is essential if the Dakar EFA goals are to be met by 2015

Reducing significantly all forms of illiteracy and enabling young and old alike to enrich their literacy skills and practices are the core challenges raised by the EFA goal. To address these formidable challenges, national and international policy-makers must have state-of-the-art knowledge of where literacy has been more or less achieved, how it has been (and could be better) measured and monitored, and why certain groups have successfully acquired strong literacy competency while others have not. An understanding of the states of literacy is essential if stakeholders are to meet the Dakar EFA goals by 2015.

With these aims in mind, this chapter examines global, regional, national and subnational patterns of literacy, some over time.¹ It describes how literacy and illiteracy have been 'conventionally' assessed – as a dichotomy that is based on self-declaration, third-party opinion or educational proxy. It discusses serious concerns raised about the validity and comparability of conventional literacy data and pays particular attention to new assessment techniques. The chapter then summarizes major findings resulting from alternative measurement strategies, including those of direct assessments in developing countries and large-scale, comparative studies in developed countries.

Measuring and monitoring literacy

International compilations of literacy data

During the 1950s and 1960s, scholars and international organizations used comparative data on adult literacy as a means of assessing economic progress and national development.² Literacy statistics were considered an important indicator of the extent to which individuals could effectively participate in and benefit from a modernizing economy and society. A national literacy threshold, for example, was viewed as a critical condition for economic 'take-off' and modernization (Rostow, 1960). In international organizations, the 'great divide' between the 'literate' and 'illiterate' provided policy-makers with tools to pinpoint where and among which social groups policy measures and literacy programmes were most warranted. Indeed, 'eradicate illiteracy' became a rallying cry for the international community (Smyth, 2005).

In the 1950s, UNESCO addressed the growing demand for comparative data on literacy. An early publication, *Progress of Literacy in Various Countries* (1953), compiled figures from about thirty pre-Second World War national censuses. *World Illiteracy at Mid-Century* (1957) reported census data from over sixty countries, mainly gathered after 1945, and estimated illiteracy rates for all countries of the world. Subsequent publications updated national estimates and included projections of global and regional trends (UNESCO, 1970, 1978, 1980, 1988, 1995).

The first publications contributed to a standard definition of literacy, adopted by UNESCO's General Conference in 1958, as follows: 'A person is literate/illiterate who can/cannot with understanding both read and write a short simple statement on his [or her] everyday life.' This definition became a guidepost for national censuses and contributed to the generation of more comparable literacy statistics.

Thus, within this framework of measurement standards, literacy came to be viewed as a limited set of cognitive skills (typically, the abilities to read and write printed text), which individuals acquire in various ways (mainly at school, but also through literacy 'campaigns' and non-formal programmes) and which can be measured independently of the context in which they were acquired (see Chapter 6).

UNESCO publications on literacy consistently aimed at worldwide coverage. For policy-makers and analysts alike, the usefulness of such statistics outweighed doubts concerning their validity (do they measure what they purport to measure?) and comparability (can they be compared across and within nations?). The principal challenge for UNESCO was to ensure that published literacy data conveyed a reasonably accurate picture of global trends and regional patterns of illiteracy.

Compilations of illiteracy data reinforced the growing international consensus that illiteracy affected most countries and posed a serious problem with important social and economic ramifications.³ Literacy, on the other hand, presented a more ambiguous issue. How much literacy was needed? And what purposes of literacy should be targeted? In countries where almost all adults became literate (by conventional assessments), the challenge to 'eradicate illiteracy' evolved into more complex concerns: spreading 'functional literacy', assessing literacy as a continuum of skills, meeting everyone's basic

1. The chapter focuses on trends and patterns in literacy within and across societies, and only indirectly considers the impact of literacy-enhancing frameworks (e.g. schools, adult education programmes, literacy campaigns and 'literate environments') and broader societal forces that affected the development of literacy in the past. Chapter 8 includes a more systematic discussion of these issues.

2. See, for instance, Cipolla (1969), UNESCO (1957), McClelland (1961, 1966), Anderson and Bowman (1965, 1976).

3. Illiteracy was typically depicted as a scourge to be eradicated or a disease that unfortunates should be cured of. The highly negative connotations of illiteracy inadvertently stigmatized those with weak writing skills and contributed to a dichotomized concept as opposed to a notion of literacy as a spectrum.

learning needs and providing opportunities for lifelong learning.

In sum, the incidence of illiteracy – not literacy – remained the focal point of international policies until the late 1980s.⁴ While many in the international community acknowledged that literacy and numeracy deserved sustained attention, only after the Jomtien (1990) and Dakar (2000) conferences was the challenge to eradicate illiteracy placed within a broader context of meeting the basic learning needs of all children and adults (Smyth, 2005).

Measurement and monitoring approaches

Until quite recently, all cross-national literacy assessments were based on official national census figures. Alternative sources (e.g. demographic or economic surveys with limited literacy information, or specialized studies of literacy)⁵ were rarely used.

In practice, experts determined an individual's literacy level by one of three methods:

- Respondents reported their literacy level as part of a census questionnaire or survey instrument (self-declaration).
- Another individual – typically, the head of the household – reported on the literacy level of household members (third-party assessment).
- The number of years of schooling completed was used as a proxy measure to distinguish the 'literate' from the 'non-literate' (educational attainment proxy).

Each of these 'conventional' methods provided an estimate of the total number of 'literate' and 'illiterate' in a society. Interestingly, even if the method used included multiple categories to assess an individual's literacy skills, the reported data were usually collapsed into a simple dichotomy: literate or illiterate.

Adult literacy rates took national census figures on the number of 'literate' persons – typically above the age of 10 or 15 – and divided them by the total number of adults in that same age category. In most cases, overall rates were then disaggregated by sex, age and urban/rural residency. For decades these 'comparable' literacy rates provided a reasonable strategy for monitoring the prevalence of illiteracy across

nations, regions and selected social groups, as well as changes over time.⁶

Beginning in the 1980s, concerns about the credibility and comparability of census-based literacy statistics gained momentum (Box 7.1).⁷ Conventional methods for monitoring literacy, using indirect assessments to classify adults dichotomously, were seriously questioned. Since few countries had carefully measured individuals' actual skills in large or broad enough population samples, the validity and reliability of reported literacy levels were uncertain (Wagner, 2004).⁸

Since the 1980s, a variety of household-based surveys have been carried out in developing countries. Some have been directly related to literacy (see below); others (e.g. World Fertility Survey, Living Standards Measurement Study, and Demographic and Health Survey) have included some literacy-related questions. The advantages of these surveys included their cost-effectiveness, efficiency, timeliness and flexibility. The literacy-related surveys also had the advantage of being designed to investigate targeted – often disadvantaged – social groups or recent policy priorities. Some surveys included both direct tests of literacy skills and conventional indirect assessments, providing additional measuring and monitoring tools (Schaffner, 2005).⁹

Only in the past five years have international compilations of literacy statistics drawn upon household-based surveys. Almost 40% of official literacy rates in the statistical annex of this Report are based on household surveys. The limitations of census-based literacy estimates, the increasing availability and reliability of new data sources and the growing demand for comprehensive, up-to-date international literacy data are among the reasons for this shift.

Language diversity has always posed a special problem for assessing and comparing literacy levels within and across countries. In many

Until quite recently, all cross-national literacy assessments were based on official national census figures

4. See, for example, Bataille (1976), UNESCO Regional Office for Education in Africa (1983).

5. Both types of survey are typically based on household sampling designs and thus are referred to as 'household surveys'.

6. As Wagner (2004) notes, the notion of *monitoring*, from the Latin *monere*, means 'to warn' or to observe. Thus, to the extent that international statistics on literacy have been used in the past to gather sufficient information in order to judge whether there is a problem necessitating a warning, they have fulfilled a monitoring function. As self-assessments, assessments by others and proxy variables tell little about the actual literacy skills of individuals or groups, however, their use obscures the nature and extent of the problem being monitored.

7. In 1986, UNESCO and the United Nations Statistical Office held a joint seminar in Paris to discuss the use of household surveys to improve the collection of adult literacy statistics (see United Nations Statistical Office, 1989). Similar discussions ensued over the next two decades (see, for example, ILI/UNESCO, 1999, 2001, 2002a, 2002b).

8. While many specialists agree that exclusive reliance on traditional indirect measures of literacy may be flawed, there is renewed discussion of the utility of proxy measures, since they may be sufficient and cost less (Desjardins and Murray [in press]; Murray, 1997).

9. Household surveys are not without their shortcomings, including some of the problems listed above (Carr-Hill, 2005a).

Box 7.1 Determining literacy from census data

The widespread use of census data to estimate literacy (or illiteracy) is not without problems, both substantive and methodological. These problems – which vary from country to country and have diminished in recent years – include:

- *The paucity of census data:* This problem occurs particularly in countries with high literacy rates, since some have never included questions on literacy in their census surveys (e.g. the Netherlands, Sweden and Switzerland), and others discontinued their use at some point (e.g. Australia, Austria, Canada and New Zealand). Many developing countries, where illiteracy was understood to be widespread, have begun only in recent decades to include census provisions to measure its extent.
- *Widely diverging operational definitions:* Among current census definitions of literacy are those that classify a person as literate if they: ‘can read or write’ (e.g. in Bulgaria, El Salvador and Egypt); ‘can read a newspaper and write a simple letter’ (e.g. Pakistan); ‘can read and write, understanding the text, in any language having a written form’ (Azerbaijan); ‘can read and write or only read, no matter the language used’ (Turkmenistan); or ‘can both read and write with understanding in any language’ (India). In past censuses, the ability to sign one’s name was sometimes considered as sufficient evidence of literacy. Depending on the country, persons who could only read or only write might be classified as literate, illiterate or ‘semi-literate’ (UNESCO, 1953). Even within the same country, census definitions changed rapidly: for example, in each of Pakistan’s five national censuses a different definition of literacy was used (Choudhry, 2005). Overall, the evidence suggests that while operational definitions continue to vary, the extent of cross-national variation has decreased in recent years as international definitions have become institutionalized.
- *Varying definitions of ‘adult’ population:* Most censuses define the adult population as 15 years and older. Yet in some cases the lower age limits of the adult population have been set at 10, 7 or even 5 years. Persons of unknown age may or may not be included in the total count of literates and illiterates. There have even been instances in which no age limits were defined, meaning that even pre-verbal children were included (UNESCO, 1953). Another problem is infrequent censuses and reliance on outdated data. While censuses typically are conducted every ten years in developed countries, they are less frequent in many developing countries. Literacy statistics can thus be outdated by as much as two decades.
- *Indirect vs direct assessment:* Conventional measurement strategies do not directly assess the actual literacy skills and practices of the individuals studied. Rather, they rely on self-assessments or third-party assessments, which are indirect. As such, they provide inaccurate and, in many ways, incomplete depictions of literacy levels. They can also produce overestimations of literacy rates. As discussed below, direct assessments of reading and writing skills generally provide a more realistic picture of individual literacy levels and their distribution in society.
- *The validity of educational attainment as a proxy:* Many censuses consider years in school (typically, four or five years) as a valid proxy measure to determine literacy. As will be shown, estimating the number of illiterates/literates based on educational attainment is increasingly problematic. Some students attain ‘literacy’ (conventionally assessed) before completing four years in school; others remain ‘illiterate’ despite having completed five or more years of schooling.

10. Chapter 6 discussed current national policies regarding language and literacy assessment. The interrelationship of language and literacy issues is discussed more thoroughly in Chapter 8.

11. This section examines literacy trends and patterns, using data compiled by UNESCO from national literacy estimates based on conventional (i.e. dichotomous and indirect) assessments. Later sections examine findings resulting from other assessment methods.

12. Overall, the reliability and comparability of census data on literacy improved during this period and the number of countries compiling such information increased, enhancing the quality of UNESCO’s estimates. Nevertheless, beyond the problems noted in Box 7.1, analysing trends in (i) literacy rates or in numbers of illiterates entails collating data from several assessment exercises, which may have involved different methods and sources. Thus, the trends over time discussed in this section should be interpreted with caution, since the various segments of the trend line are not always strictly comparable.

contexts, the languages in which individuals’ literacy skills are measured touch upon sensitive and often controversial issues.¹⁰

The changing scale and scope of the global challenge¹¹

UNESCO’s first ‘global’ survey of literacy estimated that 44% of the world’s adults (15 years and older) – about 690–720 million people – lacked minimum literacy skills in a written language (UNESCO,

1957). Global illiteracy was concentrated in Asia (74%), particularly in China, Pakistan, India, Nepal, Afghanistan and Sri Lanka. The remainder of the world’s illiterate adults lived in Africa (15%), the Americas (7%), and in Europe, Oceania, and the former USSR (4%).

Subsequent assessments estimated that the overall number of illiterates increased from about 700 million in 1950 to 871 million in 1980 (Table 7.1). During the 1980s, the illiterate population stabilized, and it began to decrease in the 1990s – from 872 million in 1990 to 771 million today.¹²

Important trends concerning the world's illiterate population (Table 7.2) include:

- The vast majority of the illiterate population is concentrated in developing countries.
- The percentage living in South and West Asia, sub-Saharan Africa and the Arab States has increased since 1970, partly owing to population growth rates, while there has been a pronounced decline in East Asia and the Pacific, particularly due to the efforts and achievements of China.¹³
- Women continue to constitute a majority of the illiterate: their percentage has increased from 58% in 1960 to 64% today.
- Young adults (aged 15–24) comprise a decreasing minority: from about 20% in 1970 to 17% today.

The bulk of this chapter is devoted to the analysis of literacy in developing countries; the relatively small but persistent developed country challenge is addressed below in relation to the International Adult Literacy Survey (IALS), and again in Chapter 8.

Trends in literacy rates, 1950–2004

At the global level, the adult literacy rate increased throughout the post-1950 period: from 56% in 1950 to 70% in 1980, and to 82% in the most recent period (Table 7.3).¹⁴ While the more developed countries had already attained over 90% adult literacy rates in the 1950s, rates in developing countries then averaged lower than 50% but have since increased to over 75%. On average, the world literacy rate increased at a faster pace in the 1970s than in subsequent decades. Based on current projections, the adult literacy rate should reach about 86% in 2015 (see Chapter 2).

Adult literacy rates increased quite rapidly in regions where initial literacy rates were lowest, especially in the 1970s – doubling in sub-Saharan Africa, the Arab States, and South and West Asia from 1970 to 2000. The regional literacy rate in East Asia and the Pacific grew from 58% to 91%, while in Latin America and the Caribbean the increase was more moderate (74% to 90%), owing to the region's relatively high starting point.

13. According to official census estimates, the number of adults who had not mastered at least 1,500 characters in Chinese (the operational definition of illiteracy) declined from 320 million in 1949 to 230 million in 1982 and is now at 87 million (Zhang and Wang, 2005), though several scholars (e.g. Banister, 1987; Hagemann, 1988; Henze, 1987; Seeberg, 2000; World Bank, 1983) have questioned the accuracy of the statistics prior to the 1990s.

14. Past increases in the adult literacy rate did not translate into a reduction of the overall number of illiterates until the 1990s, due to continuing population growth.

Table 7.1: Global and regional trends in number of illiterates, 1950 to 2000–2004

	Adult illiterates (15 and over)					
	(millions)					
	1950	1960	1970	1980	1990	2000–2004
World	700	735	847	871	872	771
Developing countries	804	839	855	759
Developed and transition countries	43	32	17	12
<i>Selected regions</i>						
Sub-Saharan Africa	108	120	129	141
Arab States	...	19	48	55	63	65
East Asia and the Pacific	295	267	232	130
South and West Asia	301	344	382	381
Latin America and the Caribbean	43	44	42	38

Note: See the introduction to the statistical annex for a broader explanation of national literacy definitions, sources and years of data.

Sources: For 1950 and 1960: UNESCO (1978) Estimates and Projections of Illiteracy, CSR-E-29. Data refer to the 1972 assessment and are not necessarily comparable with data for subsequent years. For 1970 and 1980: UIS 2002 assessment based on the UN Population estimates and projections (2000 assessment). For 1990 and 2000–2004: data are from this Report's statistical annex, Table 2A.

Table 7.2: Percentage distribution of global illiterate population, by country development status, region, gender and age

	Adult illiterates (15 and over)					
	1950	1960	1970	1980	1990	2000–2004
Global estimate of illiterate population (in millions)	700	735	847	871	872	771
<i>Distribution (%)</i>						
Developing countries	94.9	96.3	98.1	98.4
Developed and transition countries	5.1	3.7	1.9	1.6
<i>Selected regions</i>						
Sub-Saharan Africa	12.8	13.8	14.8	18.3
Arab States	...	2.6	5.7	6.3	7.2	8.4
East Asia and the Pacific	34.8	30.7	26.6	16.9
South and West Asia	35.5	39.5	43.8	49.4
Latin America and the Caribbean	5.1	5.1	4.8	4.9
<i>Gender</i>						
Women	...	58.0	61.0	62.0	63.0	64.0
Men	...	42.0	39.0	38.0	37.0	36.0
<i>Age</i>						
Youth aged 15–24	19.8	19.1	17.9	17.2
All other adults (25+)	80.2	80.9	82.1	82.8

Sources: Same as Table 7.1.

Gender disparities in literacy, 1970–2004

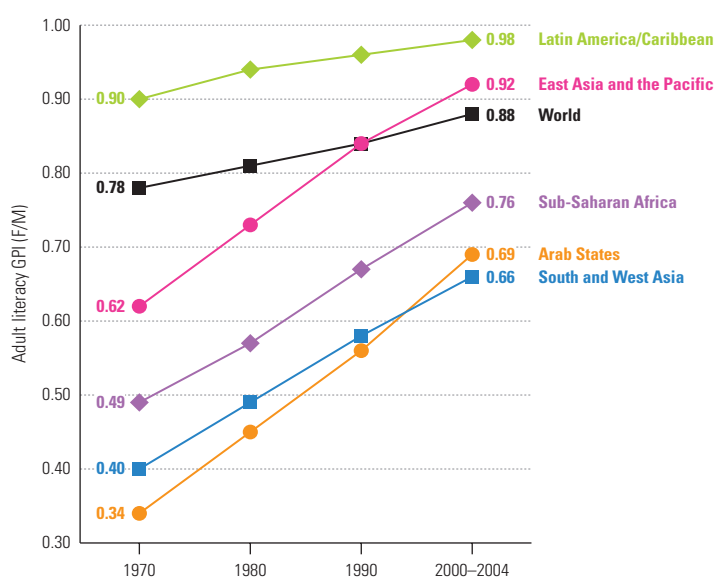
During the past three decades, women have comprised three-fifths or more of the adult illiterate population. However, this fact provides only partial information about gender disparities, since women may outnumber men because of differential mortality rates in older age groups. Thus, the gender parity index (GPI) is a preferable measure.¹⁵

15. The GPI calculates the ratio between female and male literacy rates. A GPI of 1.0 indicates gender parity; GPIs below or above 1.0 indicate that literacy rates are higher among men or women, respectively.

Table 7.3: Global and regional trends in adult literacy rates, 1950 to 2000–2004

	Adult literacy rates (%)						Increase in literacy rates (%)		
	1950	1960	1970	1980	1990	2000–2004	1970 to 1980	1980 to 1990	1990 to 2000–2004
World	55.7	60.7	63.4	69.7	75.4	81.9	9.9	8.2	8.5
Developing countries	47.7	58.0	67.0	76.4	21.6	15.6	14.0
Developed and transition countries	94.5	96.4	98.6	99.0	2.0	1.8	0.5
<i>Selected regions</i>									
Sub-Saharan Africa	27.8	37.8	49.9	59.7	36.0	32.1	19.6
Arab States	...	18.9	28.8	39.2	50.0	62.7	36.1	27.7	25.3
East Asia and the Pacific	57.5	70.3	81.8	91.4	22.3	16.4	11.7
South and West Asia	31.6	39.3	47.5	58.6	24.4	20.8	23.5
Latin America and the Caribbean	73.7	80.0	85.0	89.7	8.5	6.3	5.5

Sources: Same as Table 7.1.

Figure 7.1: Adult literacy rates: global and regional trends in gender parity, 1970 to 2000–2004

Sources: Same as Table 7.1.

Worldwide, gender disparities in literacy have declined significantly since 1970, with the GPI increasing from 0.78 to 0.88 (Figure 7.1). This reduction occurred in all regions, notably in the Arab States, South and West Asia, and sub-Saharan Africa. The GPIs in these three regions were below 0.50 in 1970 and are today all above 0.65. Adult literacy rates in Latin America and the Caribbean (GPI = 0.98) and East Asia and the Pacific (GPI = 0.92) are approaching gender parity.

Improvements in youth literacy

Recent progress towards mass literacy is especially marked among people aged 15 to 24: expanded access to formal schooling contributed to an increase in the global youth literacy rate from 75% to 88% between 1970 and 2000–2004 (Table 7.4). In developing countries, the respective figures were 66% and 85%. Almost all youth are now literate in East Asia and the Pacific, and in Latin America and the Caribbean. Nevertheless, more than 132 million young people worldwide are still unable to communicate in a written language.

Table 7.4: Youth literacy rates by country development status and region, 1970 to 2000–2004, with percent increases in each decade

	Youth literacy rates (%)				Increase in literacy rates (%)		
	1970	1980	1990	2000–2004	1970 to 1980	1980 to 1990	1990 to 2000–2004
World	74.7	80.2	84.3	87.5	7.4	5.1	3.8
Developing countries	66.0	74.4	80.9	85.0	12.7	8.7	5.1
Developed and transition countries	99.0	99.3	99.5	99.7	0.3	0.2	0.2
<i>Selected regions</i>							
Sub-Saharan Africa	41.3	54.3	67.5	72.0	31.5	24.3	6.6
Arab States	42.7	54.7	66.6	78.3	28.1	21.8	17.6
East Asia and the Pacific	83.2	91.3	95.4	97.9	9.7	4.5	2.6
South and West Asia	43.3	52.6	61.5	73.1	21.6	16.8	18.9
Latin America and the Caribbean	84.2	89.5	92.7	95.9	6.2	3.6	3.4

Sources: Same as Table 7.1.

Increases in youth literacy rates have, on average, been slower than for adult literacy rates, due to their higher starting point. In developing countries, the youth literacy rate increased during each of the past three decades by about thirteen, nine and five percentage points, respectively. The corresponding figures for the adult literacy rates were twenty-two, sixteen and fourteen percentage points. Gender disparities in youth literacy are less pronounced than in adult literacy, with a global GPI of 0.93 in 2000–2004.

Throughout the developing world, levels of youth literacy are higher than levels of adult literacy – a sign of future progress. Still, youth literacy rates vary considerably among countries with low adult literacy rates (Figure 7.2). In several cases, mainly in sub-Saharan Africa (e.g. Burkina Faso, the Niger and Mali), both adult and youth literacy levels are extremely low and improvements in literacy levels are expected to be slow. In many such contexts, young women have yet to acquire minimal literacy skills. For example, in Benin, Burkina Faso, Chad, Mali, the Niger and Yemen, the GPIs are below 0.60 for the younger generation (see statistical annex, Table 12).

Overall, considerable global progress in adult and youth literacy rates has occurred during the past fifty years. Nevertheless, the challenge to improve the quantity and quality of literacy worldwide has not diminished: indeed, unless progress is significantly accelerated, the 2015 targets fixed at Dakar will not be achieved (see Chapter 2). To better understand the enormous intra-regional variation in literacy trends and patterns, the next section presents evidence and analyses at the national and subnational levels.

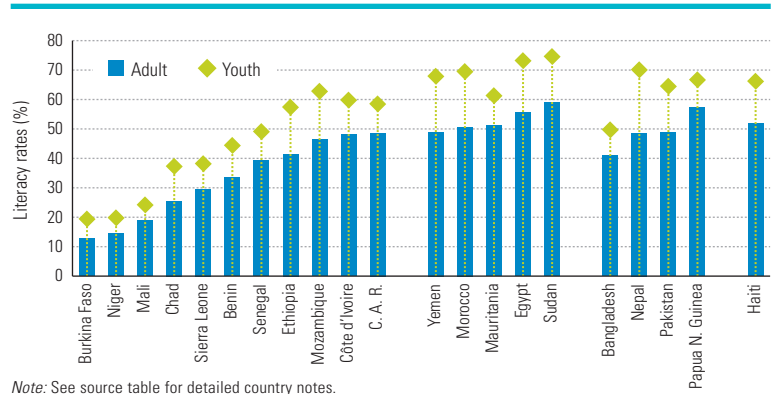
Where is the literacy challenge most pressing?

The vast majority of the 771 million adults who lack minimal literacy skills live in three regions: South and West Asia, East Asia and the Pacific, and sub-Saharan Africa. In fact, as Figure 7.3 shows, three-quarters of the world’s illiterate population live in just twelve countries.¹⁶

Since 1990, the illiterate population in eight of these twelve countries has decreased (Table 7.5),

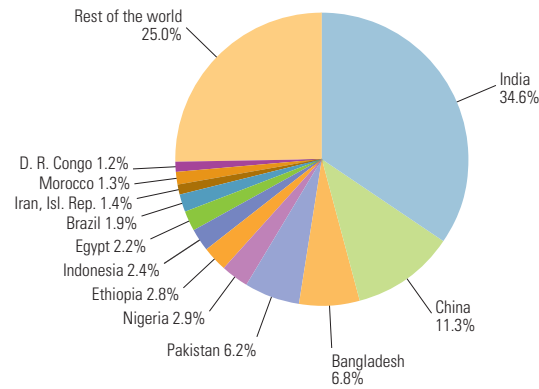
16. After these twelve countries, the largest illiterate populations in decreasing order of number of illiterates, are found in the Sudan, Nepal, Mexico, Algeria, the United Republic of Tanzania, Turkey, Mozambique, Ghana, Yemen, Viet Nam, the Niger, Burkina Faso, South Africa, Mali, Côte d'Ivoire, Kenya, Uganda and the Philippines, with an estimated 3–8 million each. Extrapolations from earlier literacy data indicate that Afghanistan and Iraq should also be on this list.

Figure 7.2: Youth and adult literacy rates for selected countries, 2000–2004



Note: See source table for detailed country notes.
Source: Statistical annex, Table 2A.

Figure 7.3: Distribution of global adult illiterate population, 2000–2004



Source: Statistical annex, Table 2A.

Table 7.5: Change in the illiterate population, 1990 to 2000–2004, in countries with the greatest numbers of illiterates

Country	Total		Share of world total		Change from 1990 to 2000–2004 (000)
	1990 (000)	2000–2004 (000)	1990 (%)	2000–2004 (%)	
India	272 279	267 002	31.2	34.6	-5 277
China	181 331	87 038	20.8	11.3	-94 293
Bangladesh	41 606	52 209	4.8	6.8	10 603
Pakistan	41 368	47 577	4.7	6.2	6 209
Nigeria	23 678	22 167	2.7	2.9	-1 511
Ethiopia	18 993	21 955	2.2	2.8	2 962
Indonesia	23 800	18 432	2.7	2.4	-5 368
Egypt	17 432	17 270	2.0	2.2	-162
Brazil	17 336	14 870	2.0	1.9	-2 466
Iran, Isl. Rep.	11 506	10 543	1.7	1.8	-963
Morocco	9 089	10 108	1.4	1.7	1 019
D.R. Congo	10 400	9 131	1.6	1.6	-1 269
Total	668 818	578 302	77.8	76.2	-90 516

Note: See source table for detailed country notes.
Source: Statistical annex, Table 2A.

Adult literacy rates remain relatively low in South and West Asia, sub-Saharan Africa and the Arab States

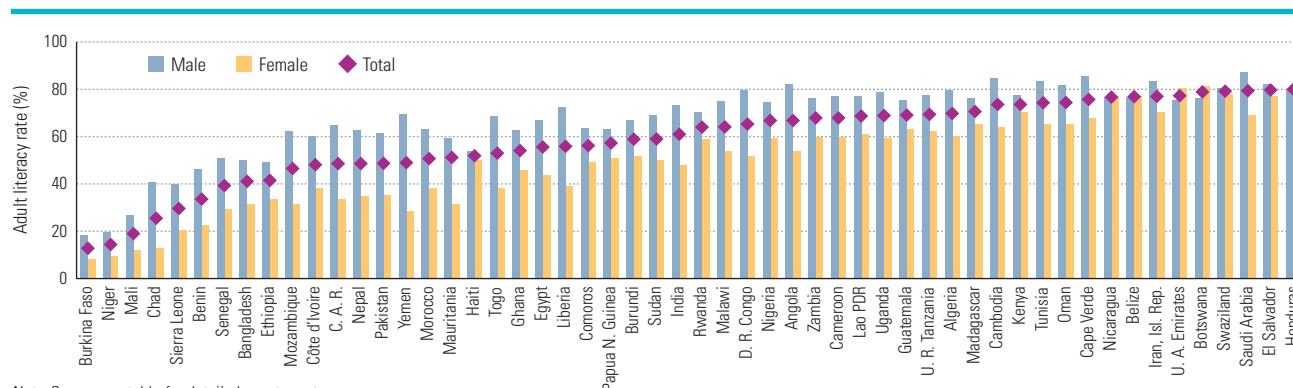
though only in China was the reduction very significant; Brazil, the Democratic Republic of the Congo, Egypt, India, Indonesia, Nigeria and the Islamic Republic of Iran recorded small decreases. By contrast, the illiterate populations in Bangladesh, Ethiopia, Morocco and Pakistan have increased since 1990, despite improvements in adult literacy rates, indicating that progress in the latter was insufficient to offset the effect of continuing population growth.

In which countries are adult literacy rates especially low?

While adult literacy rates have improved in all world regions, they remain relatively low (around 60%) in South and West Asia, sub-Saharan Africa and the Arab States. Within these regions there

are considerable differences in adult literacy rates. For example, in South and West Asia, rates are especially low in Bangladesh, Nepal and Pakistan, and quite high in the Maldives and Sri Lanka. In sub-Saharan Africa, literacy rates are extremely low in Benin, Burkina Faso, Chad, Mali, Mozambique, the Niger, Senegal and Sierra Leone, and relatively high in the Congo, Equatorial Guinea, Lesotho, Mauritius and Namibia. Literacy skills are very limited in Egypt, Mauritania, Morocco, Sudan and the Yemen, but more widespread in Bahrain, Jordan, Qatar and the Syrian Arab Republic. Figure 7.4 ranks the fifty-five countries that have the world's lowest adult literacy rates – ranging from 13% (Burkina Faso) to 80% (Honduras) – and are thus at risk of not meeting the 2015 goal.

Figure 7.4: Adult literacy rates by gender in fifty-five low-literacy developing countries, 2000–2004



Note: See source table for detailed country notes.

Source: Statistical annex, Table 2A.

Table 7.6: The literacy challenge compounded: many illiterates, low adult literacy rates, 2000–2004

	Adult literacy rate is < 63%	Adult literacy rate is > 63%
Number of illiterates is greater than 5 million	Bangladesh; Egypt; Ethiopia; Ghana; India; Morocco; Mozambique; Nepal; Pakistan; Sudan; Yemen	Afghanistan; ¹ Algeria; Brazil; China; D.R. Congo; Indonesia; Iraq; ² Iran, Isl. Rep.; Mexico; Nigeria; Turkey; U.R. Tanzania
Number of illiterates is between 1 and 5 million	Benin; Burkina Faso; Burundi; Central African Republic; Chad; Côte d'Ivoire; Haiti; Mali; Niger; Papua New Guinea; Senegal; Sierra Leone; Togo	Angola; Cambodia; Cameroon; Guatemala; Kenya; Madagascar; Malawi; Malaysia; Myanmar; Peru; Rwanda; Saudi Arabia; South Africa; Syrian A.R.; Tunisia; Uganda; Zambia
Number of illiterates is less than 1 million	Comoros; Liberia; Mauritania	Bahrain; Belize; Bolivia; Botswana; Cape Verde; Congo; Dominican Republic; El Salvador; Equatorial Guinea; Honduras; Jamaica; Jordan; Kuwait; Lao PDR; Lesotho; Libyan A.J.; Malta; Mauritius; Namibia; Nicaragua; Oman; Qatar; Suriname; Swaziland; U.A. Emirates; Vanuatu

Note: The figure of 63% to distinguish between high and low adult literacy rates is based on an examination of the distribution of all countries with rates below 95% and a calculation of the median. See source table for detailed country notes.

1. Data for Afghanistan based on estimates from CIA (2005).

2. Data for Iraq based on estimates from UNDP (2004c).

Source: Statistical annex, Table 2A.

By comparing the size of each country's illiterate population with its overall adult literacy rate, countries with especially significant literacy challenges can be identified. India, Bangladesh, Ethiopia, Egypt, Ghana, Morocco, Mozambique, Nepal, Pakistan, the Sudan and Yemen fall into this category, with relatively large numbers of illiterates (more than 5 million) and relatively low adult literacy rates (less than 63%) (Table 7.6). By contrast, countries such as Burkina Faso, Chad, Côte d'Ivoire, Haiti, the Niger, Papua New Guinea and Senegal have low literacy levels, but also have smaller illiterate populations (1–5 million).

The link with poverty

The magnitude of the literacy challenge facing many countries today is further complicated by the strong links between illiteracy and poverty. For example, there is a significant negative correlation between

measures of poverty and the adult literacy rate, at both the international level (Figure 7.5) and at the subnational level in countries such as India (Figure 7.6); that is, where poverty rates are higher, literacy rates tend to be lower. Noteworthy exceptions include countries such as the Islamic Republic of Iran, Morocco and Tunisia, which have relatively low poverty and literacy rates.

Where poverty rates are higher, literacy rates tend to be lower

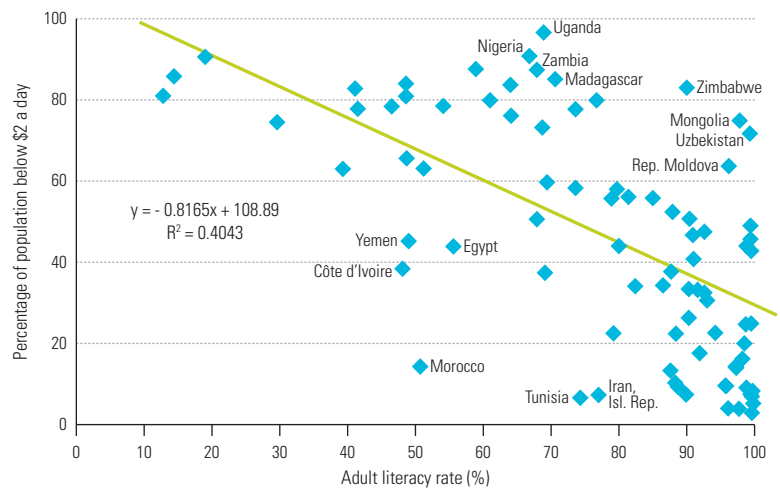
Table 7.7 provides additional evidence of the illiteracy–poverty link by reporting estimates of per

Table 7.7: The literacy challenge compounded: links to poverty

	Gross national income per capita, 2003 (in PPP US\$)	Percent of population living below US\$2 a day (most recent figures)	Belongs to HIPC countries
Number of illiterates is greater than 5 million and adult literacy rate is < 63%			
Bangladesh	1 870	83	
Egypt	3 940	44	
Ethiopia	710	78	X
Ghana	2 190	79	X
India	2 880	81	
Morocco	3 940	14	
Mozambique	1 060	78	X
Nepal	1 420	81	
Pakistan	2 040	66	
Sudan	1 760	–	X
Yemen	820	45	
Number of illiterates is greater than 5 million and adult literacy rate is > 63%			
Algeria	5 930	15	
Brazil	7 510	22	
China	4 980	–	
D.R. Congo	660	–	X
Indonesia	3 210	52	
Iran, Isl. Rep.	7 000	7	
Mexico	8 980	26	
Nigeria	900	91	
Turkey	6 710	10	
Number of illiterates is between 1 and 5 million and adult literacy rate is < 63%			
Burkina Faso	1 170	81	X
Côte d'Ivoire	1 400	38	X
Mali	960	91	X
Niger	830	86	X

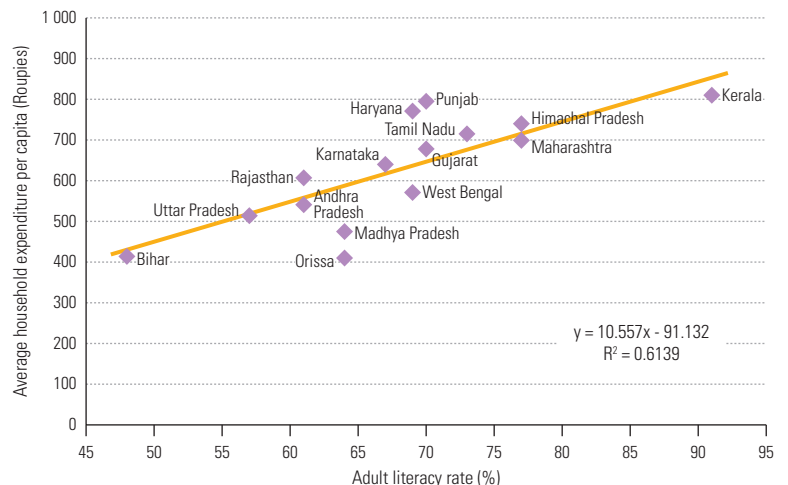
Note: The categorization of countries in this table is based on Table 7.6. Source: World Bank Development Indicators Database (<http://www1.worldbank.org/prem/poverty/data/>, accessed April 2005).

Figure 7.5: Literacy rate and poverty



Sources: Statistical annex, Table 2A, and World Bank Development Indicators Database (<http://www1.worldbank.org/prem/poverty/data/>, accessed April 2005).

Figure 7.6: Relationship between adult literacy and average household expenditure in India, by selected states



Source: Drèze and Sen (2002).

capita income and poverty rates for countries with large illiterate populations and low adult literacy rates. This table illustrates that illiteracy tends to prevail in low-income, often heavily indebted countries with widespread household poverty.

Social and demographic disparities in literacy rates

Gender

Gender disparities are either non-existent or minimal in countries with adult literacy rates at 95% or above. In almost all other countries, men have better reading and writing skills than women. On average, the literacy gaps between adult men and women are largest in South and West Asia (70% vs 46%), the Arab States (73% vs 51%) and sub-Saharan Africa (68% vs 52%). The gap between the female and male literacy rates is considerably greater in countries where the overall adult literacy rate is lower (Figure 7.4).¹⁷

Interestingly, literacy disparities favouring young women over young men (aged 15–24) occur in an increasing number of countries. For example, the GPIs in Botswana, Honduras, Jamaica, Malta, Nicaragua and the United Arab Emirates are above 1.03 for the younger age group. Overall, the number of countries (with relevant data) for which the GPI favours young women over young men increased from fifteen to twenty-two between 1990 and 2000–2004. This trend is more pronounced in Latin America and

the Caribbean, in eastern and southern Africa, and in countries with higher literacy rates.¹⁸

Age

In all countries, literacy rates vary across age groups. Typically, individuals aged 15–34 have higher literacy levels than those aged 45 and older, reflecting in large part the expansion of mass schooling throughout the world. In some countries, there are small decreases in literacy rates among younger age groups and then sharp declines among older age groups, especially after the age of 45. In other cases, the decline in literacy rates across age groups is fairly linear. Unsurprisingly, age disparities are smaller in high-literacy countries and larger in low-literacy countries. In countries with comparatively low literacy levels (e.g. Angola, Burundi, the Gambia, the Lao People’s Democratic Republic, Nepal, Pakistan, Rwanda and Zambia), the literacy rate among 25- to 34-year-olds is twice that of those aged 65 and older.

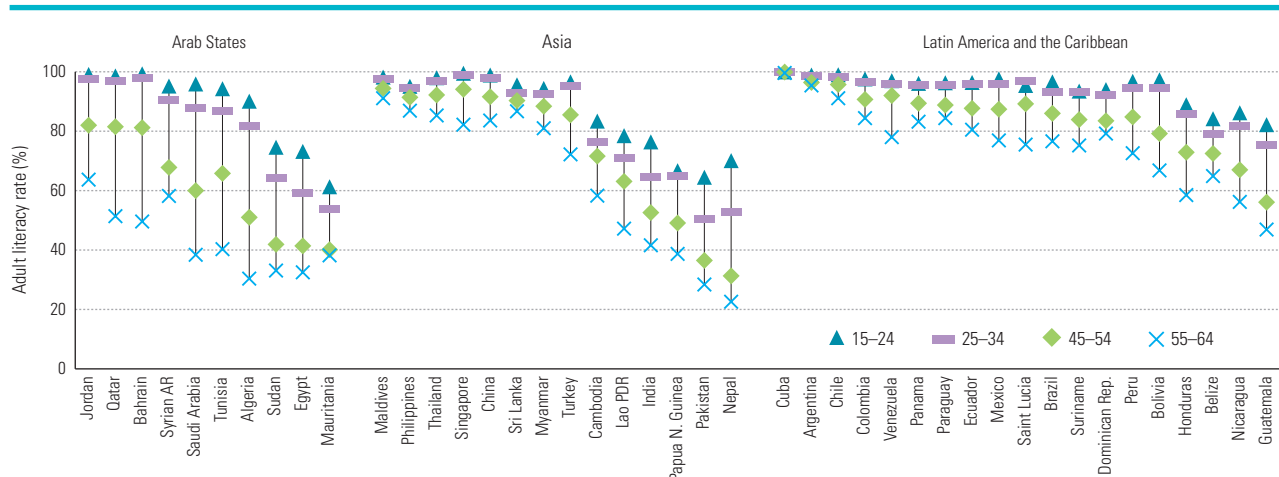
Further evidence of age disparities in adult literacy can be seen in Figure 7.7, which plots literacy rates among four select age groups in several developing regions. Age disparities in adult literacy tend to be more prominent in the Arab States than in Asia or in Latin America and the Caribbean.

Six countries in eastern and southern Africa (Angola, the Democratic Republic of the Congo, Zambia, the United Republic of Tanzania, Madagascar and Kenya) have lower literacy rates among 15- to 24-year-olds than among 25- to

17. Among developing countries, there are several interesting exceptions to the tendency for female literacy rates to be lower than those for men. For example, in Brazil, Colombia, Honduras, Jamaica, Lesotho, Malta, Nicaragua, the Philippines, Saint Lucia and Seychelles, the differences between the male and the female literacy rates are either insignificant or favour women (see Chapter 2).

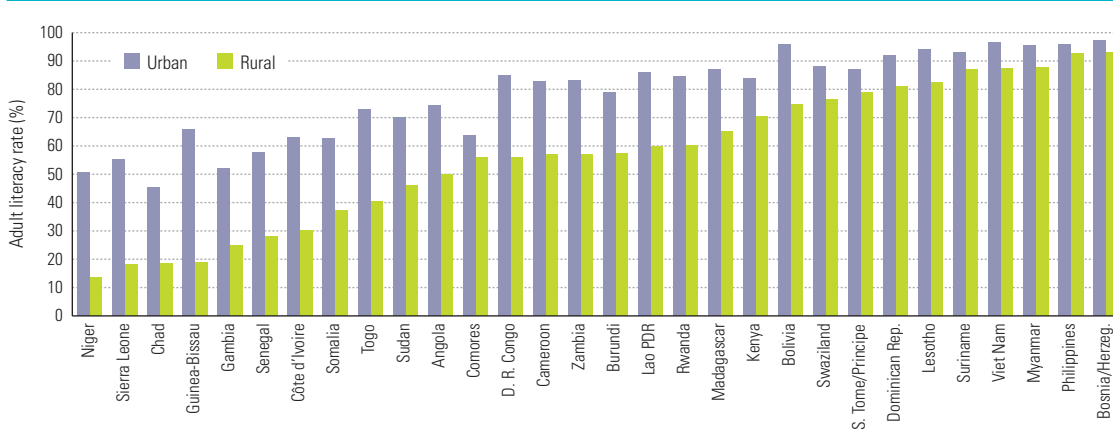
18. This emergent tendency of gender disparities in favour of young women should be examined in relation to similar tendencies in educational achievement and educational attainment, including primary completion rates.

Figure 7.7: Literacy rates for selected age groups, 2000–2004



Source: UNICEF Multiple Indicator Cluster Surveys (MICS) 2000, taken from Carr-Hill (2005a).

Figure 7.8: Adult literacy rates by urban/rural residence, 2000–2004



Note: Only includes countries with an adult literacy rate lower than 95%.
 Source: UNICEF MICS 2000, taken from Carr-Hill (2005a).

34-year-olds. This exceptional pattern is mainly prevalent among younger men.¹⁹ Apparently, severe political and economic conditions contributed to this literacy decline, including armed conflict, unemployment, rising household costs of schooling and perceptions of limited future income prospects from becoming literate (see Chapter 8).

Geographical disparities

Rural residents have lower literacy levels than urban residents, whether measured from census data (e.g. Wagner, 2000) or from household data (Figure 7.8).²⁰ The disparities between urban and rural populations tend to be greater in those poorer countries in which overall literacy rates are comparatively low. In large measure, the influence of urbanization on literacy acquisition and retention reflects differences in access to formal schooling, higher-quality education and non-formal education programmes. Urban residents, in contrast to rural residents, tend also to reside in more literate environments, which

are more demanding of literacy skills in written languages, and which offer greater rewards to those who possess them (see Chapter 8).

Regional or provincial differences in literacy are particularly prevalent in countries with large illiterate populations. For example, census figures for Pakistan report an adult literacy rate of 72% in urban areas (e.g. the Islamabad Capital Territory), as compared with 44% in rural areas such as Baluchistan and Sindh (Choudhry, 2005). This rural/urban ratio of 0.61, while relatively low, has nearly doubled since 1972, when it stood at just 0.34. In Ethiopia, regional disparities in literacy rates range from 83% in the Addis Ababa region to 25% in the Amhara region. The overall literacy rate in rural Ethiopia is estimated at 23%, only one-third of the urban rate of 74% (Shenkut, 2005). In Morocco, rural–urban literacy disparities are extensive and compounded by gender (Table 7.8).

In Morocco, rural-urban literacy disparities are extensive and compounded by gender

Table 7.8: Morocco: Adult literacy rates by gender and urban/rural residence, 1990/91 and 1998/99

		Adult literacy rate			GPI (F/M)
		%			
		Total	Male	Female	
All country	1990/91	45.3	60.5	31.7	0.52
	1998/99	51.7	66.2	38.1	0.58
Urban	1990/91	63.3	76.5	51.4	0.67
	1998/99	66.3	79.0	54.5	0.69
Rural	1990/91	28.2	45.3	12.8	0.28
	1998/99	33.1	50.1	17.0	0.34
Rural/urban ratio	1990/91	0.45	0.59	0.25	0.42
	1998/99	0.50	0.63	0.31	0.49

Source: Direction de la Statistique, cited in Bougroum et al. (2005).

19. These analyses draw upon data from the UNICEF Multiple Indicator Cluster Surveys (MICS), carried out in 2000; literacy figures are based on the respondent’s self-assessment of his/her ability to read easily or with difficulty a letter or a newspaper.

20. Census definitions of ‘urban’ and ‘rural’ areas vary considerably and increasingly add a third category – ‘peri-urban’ or ‘suburban’ – to further distinguish geographical entities in contrast to urban and rural areas. Many countries define an urban area in terms of (minimum) population size, a definition which varies from country to country: ranging from at least 1,000 and 2,000 residents (in Canada and Bolivia, respectively) to 10,000 (Spain) and 20,000 (Turkey), up to at least 50,000 residents (Republic of Korea). In other countries, where the status of an ‘urban area’ involves a binding legal decision approved through legislative or bureaucratic processes, definitions also vary. This lack of definitional uniformity confounds comparisons of urban literacy rates across countries and weakens comparative accounts of urban–rural literacy gaps.

In India, adult literacy rates in 2001 varied from 91% in the state of Kerala to 48% in Bihar

These disparities improved only slightly during the 1990s. Similar trends can be found in Iraq, where, for example, 72% of the women in the Baghdad area are literate, compared to 46% in the northern region (UNDP, 2004d).

In China, regional variation has been, and continues to be, widespread (Ross et al., 2005). Illiteracy is concentrated in the country's rural, western regions, which have high percentages of minority populations and lower levels of economic development.²¹ China's most literate areas are the three urban municipalities of Shanghai, Beijing and Tianjin, the economically developed Guangdong province, and the three north-east provinces, which benefited from rapid industrialization in the past.

Among states in India, adult literacy rates in 2001 varied from 91% in the state of Kerala to 48% in Bihar (Biswal and Govinda, 2005). Variations were even more pronounced at the district level: according to the 2001 census, in about one-fifth of all 591 districts²² less than half of the adult population was literate; another one-fifth of the districts have literacy rates in the range of 50% to 60%; 29% of districts have literacy rates in the 60% to 70% range; and the remaining districts have literacy rates over 70% (Biswal and Govinda, 2005).

Additional insights are gained by going beyond the traditional urban-rural dichotomy. Indeed, in many developing countries *intra-urban* and *intra-rural* differences in literacy rates can be as significant, if not more so, than urban-rural differences. In China, for example, the China Adult Literacy Survey found substantial differences in the literacy skills of native and migrant workers in five cities (Giles et al., 2003).²³ Literacy levels among urban-resident men and women were, on average, one-quarter of a standard deviation higher than among migrant men and women.

In other countries, intra-urban literacy disparities follow 'core-periphery' patterns, with central urban districts having higher literacy rates than peripheral ones, where poor families and migrants reside. In Egypt, for example, rural migrants with weak literacy skills flocked to Cairo and peri-urban areas seeking employment, but usually found themselves in substandard housing, working long hours in the informal sector with little access to training, credit or community safety nets; opportunities for literacy acquisition or skills upgrading were severely limited (Iskandar, 2005). In addition, many residents of urban peripheries live in unauthorized or illegal

areas, which are typically excluded from the sampling frame of household surveys (Carr-Hill, 2005a). In such cases, the literacy rate of urban areas may be inflated due to the undercounting of poor or rural migrant populations.

The urban-rural dichotomy also masks important *rural-based differences* between regions. For example, the rural literacy rate in southern (Upper) Egypt (47%) is considerably lower than that of northern (Lower) Egypt (62%) (Iskandar, 2005).²⁴ Nomadic populations (such as the Bedouin in Arab States) tend to have lower literacy levels, lower enrolment and higher drop-out rates than other rural populations (Hammoud, 2005). Likewise, children of pastoralists in the arid and semi-arid regions of Kenya have significantly lower enrolment rates than children in other rural regions (Bunyi, 2005).

In sum, urban-rural disparities in literacy rates apparently mask as much as they reveal. The evidence, although limited, suggests that geographical disparities in literacy are considerably more complex than conventionally portrayed.

Household wealth and poverty

The links between poverty and illiteracy, previously examined at the national level, can also be studied at the household level. Considerable evidence suggests that household socio-economic status is strongly associated with literacy acquisition and retention. People who live (or have grown up) in low-income households, and lack sufficient nutritional intake or access to clean water, are less likely to acquire and use literacy skills.

Adult literacy rates by household wealth quintiles²⁵ in thirty developing countries show that literacy rates are lower in the poorer quintiles and higher in the richer quintiles (see Carr-Hill, 2005a).²⁶ Furthermore, as Figure 7.9 shows, disparities in adult literacy rates between households belonging to the poorest and richest

24. In contrast, there is only a slight difference between the *urban* literacy rates of these two regions in Egypt (80% vs 82%).

25. Recognizing the difficulties of comparing household assets across and within countries (due to differences in climate, infrastructure and cultural notions about ownership), the UNICEF MICS surveys grouped possessed assets into a measure of household wealth, then divided this into quintile scores. These scores measure the *relative wealth* (or relative poverty) of the household; in other words, regardless of the country, all those living in households belonging to a certain quintile are in the same *relative* position within their own country, even though their income levels or assets may differ greatly.

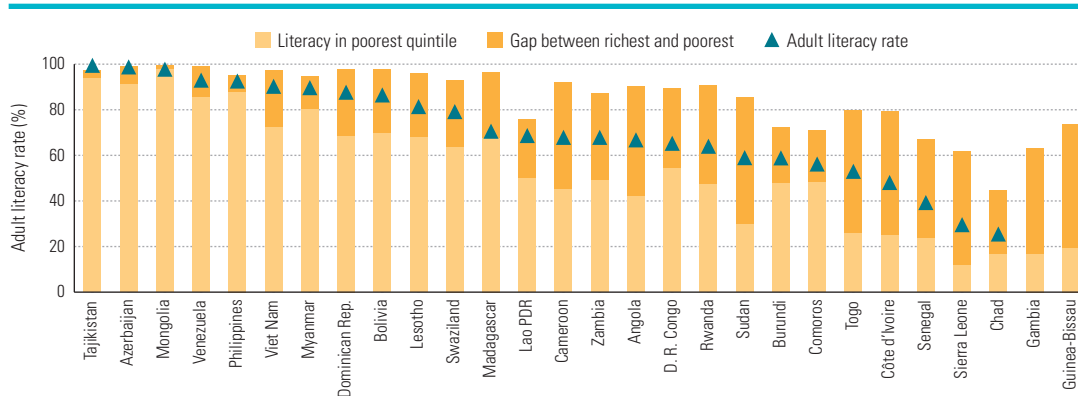
26. In Chad, Guinea, Madagascar, Sao Tome and Principe, the Lao People's Democratic Republic and Myanmar the relationship between poverty/wealth and literacy was negative but not linear.

21. In 2000, the national literacy rate was 93.3%, whereas in Tibet, Qinghai, Gansu, Guizhou and Ningxia, the rates were, respectively, 67.5%, 81.9%, 85.7%, 86.1% and 86.6%.

22. The 2001 census of India was conducted in 591 districts out of the total 593 districts (Biswal and Govinda, 2005).

23. The China Adult Literacy Survey was a direct assessment of literacy skills among men and women, from 15 to 60 years of age, residing in Shanghai, Shenyang, Xian, Wuhan and Fuzhou.

Figure 7.9: Comparison of adult literacy rates by poorest and richest wealth quintiles



Note: The official adult literacy rates for Guinea-Bissau and the Gambia were not available.
 Source: UNICEF MICS 2000, taken from Carr-Hill (2005a).

quintiles are quite large, especially where the overall literacy rate is low. In countries such as Côte d'Ivoire, Guinea-Bissau, Rwanda, Senegal, Sierra Leone, the Sudan and Togo, the literacy gap between the poorest and wealthiest households is more than forty percentage points. Even in countries where the overall rate is above 90%, literacy disparities by household wealth exist (e.g. Azerbaijan, the Philippines and Venezuela).²⁷

The literacy gaps between the poorest and richest quintiles are nearly always greater for women than for men.²⁸ In other words, women who reside in wealthier households acquire much stronger literacy skills than women in poorer households. These wealth/poverty differences are less significant for men.

Literacy and schooling

Literacy rates increase significantly as the levels of completed schooling increase. The very strong relationship between educational attainment and literacy obtains in both developing and developed countries.²⁹ How many years of schooling are needed to acquire and sustain basic literacy skills? In the past, many asserted that minimal literacy was achieved among individuals who completed at least four to five years of primary

27. The literacy gap between the poorest and richest households tends to decrease as a country's literacy rate approaches 100% (the 'ceiling effect'). This strong negative association between a country's overall literacy rate and the disparities by wealth is apparent in the Carr-Hill (2005a) study.

28. Three exceptions are Chad, the Niger and Sierra Leone, where the gap is greater among men than women.

29. Indeed, the fact that census experts and statisticians have used the number of years of schooling as a proxy variable for individual literacy is due to the implicit assumption that the two processes are closely intertwined.

schooling.³⁰ According to a recent report on education in Latin America (Chile Ministry of Education and UNESCO/OREALC, 2002), functional literacy requires at least six to seven years of schooling. Census data in many countries showed that 90% literacy levels were found (based on self-declarations) among those with four to six years of primary schooling. Such findings became the basis for setting a specific educational threshold to estimate the number of literates/illiterates.

In fact, the impact of completed schooling on self-declared literacy is more immediate and more varied than previously thought. Figure 7.10 reports adult literacy rates by three school attainment levels (no schooling, one to three years of schooling and four to six years) in over thirty developing countries and shows that:

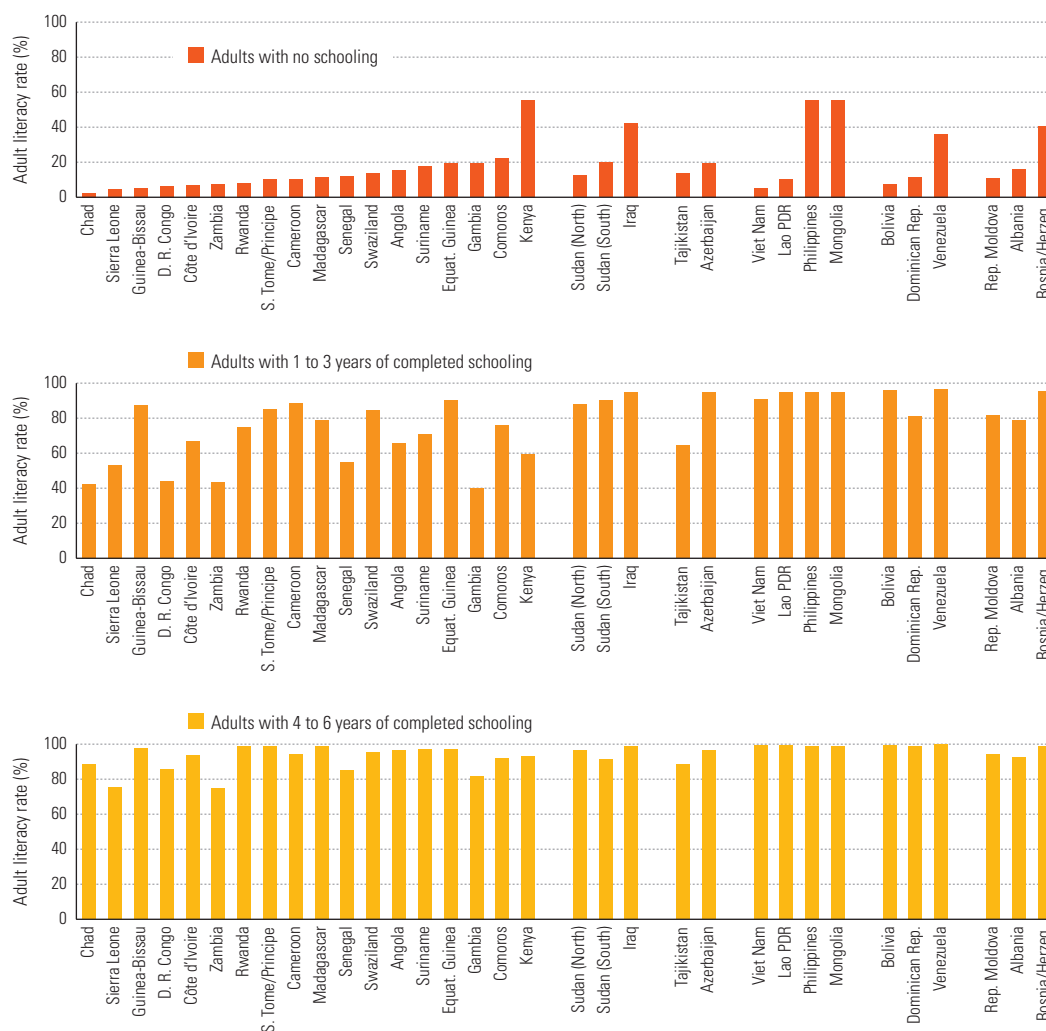
- The sharpest increase in literacy is between adults with 'no schooling' and those reporting having completed only one to three years of primary education.
- In some countries (e.g. Albania, the Democratic Republic of the Congo, the Niger, Senegal, Sierra Leone, Sudan and Zambia), many individuals who completed four to six years of schooling remain illiterate.
- A relatively high percentage of respondents indicate that they can easily read a letter or a newspaper (i.e. are 'literate') even though they either never attended primary school or did not complete the first grade.

No firm conclusions can be drawn from these analyses, but they reinforce the notion that the quality of schooling matters for literacy and that uniform schooling thresholds warrant caution.

Literacy rates increase significantly as the levels of completed schooling increase

30. The apparent origins of this assertion can be traced back to the 1920s when certificates of literacy were required for residents of the State of New York who wished to exercise their right to vote. A committee was appointed to devise a reading test, the successful completion of which entitled a resident to a literacy certificate. The committee concluded that a voter's ability to comprehend what they read and to write intelligibly corresponded to the median achievement of Grade 4 pupils in city schools (UNESCO, 1957).

Figure 7.10: Adult literacy rates by three educational levels: no schooling, 1–3 years of schooling and 4–6 years of schooling, 2000



Source: UNICEF MICS 2000, taken from Carr-Hill (2005a).

Each additional year of schooling above zero can have a lasting effect on reducing illiteracy

Overall, the tentative conclusion is that each additional year of schooling above zero can have a lasting effect on reducing illiteracy, as conventionally assessed.³¹ This conclusion, however, needs further confirmation in at least two respects. First, there may be doubts about the accuracy of self-reports of years of schooling completed: some respondents may have conflated *attended* years of schooling with

completed years of schooling. Additional analyses of literacy rates by single years of primary schooling indicate that there is a relatively steep gradient between those with one year, two years, three years and four years of schooling in almost all sampled countries.³² This pattern holds for both men and women. Second, it is important to carefully examine whether the effect of additional years of schooling remains after controlling for other variables such as sex, age and wealth (see below).

31. Alternative explanations to consider: (a) many low-schooled and 'illiterate' individuals have been excluded from the household-based sampling frame; (b) schooling refers to years completed, not years attended; high repetition rates or interrupted schooling might mask literacy gains among those who complete few years of school; and (c) according to cultural norms, everyone who attends school is considered literate, and schooled individuals should not refer to themselves as illiterates.

32. The exceptional cases, in which literacy rates do not increase with each and every year of formal schooling (between Grades 1 and 4), include Azerbaijan, and to a lesser extent, Cameroon, Comoros, Lesotho and Sierra Leone.

Which background characteristics are most associated with literacy?

Based on multivariate and multilevel analyses, this section explores the importance of gender, age, household size, area of residence, school experience, highest grade completed and wealth quintile on self-assessed literacy in twenty-eight developing countries, using the UNICEF Multiple Indicator Cluster Surveys database (Carr-Hill, 2005a).³³ In nearly all countries, key socio-demographic variables are highly predictive of illiteracy, with a substantial degree of variation explained in nearly every country context (Table 7.9).

In particular, the pattern of results confirms earlier findings and indicates that, net of other factors:

- Women are significantly less likely to be literate than men.
- Age is nearly always a significant factor, with older people more likely to be illiterate than younger people (this relationship is weaker than the association with gender).
- In most countries household size was not associated with literacy; however, in a limited number of cases, individuals living in larger households are less likely to be literate.
- Individuals from wealthier households are more likely to be literate than those from poorer households, but the strength and significance of this association vary.
- Urban residents are more likely to be literate than rural residents, although this factor is weaker than others.
- Whether or not an individual *ever went to school* has the strongest and most significant effect on literacy. Between the remaining two school variables – grouped years of schooling (e.g. 0, 1–3, 4–6) and the highest grade achieved – the latter is more important than the former.³⁴

Finally, this pattern of results is not substantially altered when multilevel models are analysed for each country, which shows that the factors associated with individual-level literacy assessments are not substantively different at the household and ‘sampling’ cluster levels (Carr-Hill, 2005a).³⁵

33. Multilevel models are used because different factors may be more or less significant depending on the unit of analysis that is, individual, household or country.

34. For further elucidation of the influence of each educational variable on self-assessed literacy, see Carr-Hill (2005a).

Table 7.9: Factors significantly associated with adult literacy rates in twenty-eight developing countries: results from multivariate analyses, 2000

Socio-demographic factor	Number of countries in which factor is significantly related to adult literacy rate		Number of countries in which factor is unrelated to adult literacy rate
	Positive association	Negative association	
Male	23	0	5
Age	1	20	7
Household size	4	7	17
Resides in urban area	16	3	9
Completed at least one year of schooling	26	0	2
Grouped levels of formal schooling	17	3	8
Highest grade completed	24	1	3
Wealth quintile of household	18	1	9

Source: UNICEF MICS 2000, taken from Carr-Hill (2005a).

Literacy in excluded groups

The present section focuses on a set of groups that – for complex social, cultural or political reasons – have been excluded from mainstream society and whose skills and practices in written languages remain severely restricted.³⁶ Such social exclusion may be due to disability, to ascribed characteristics such as ethnicity, caste or religion (in addition to gender and age), or to ‘acquired’ characteristics such as poverty, migration, displacement or incarceration. For example, in relatively closed caste societies such as Nepal, a number of types of ascribed attributes – including caste (e.g. Dalit), ethnicity (e.g. Janajati) and religion (e.g. Muslim) – act as barriers (in addition to those of gender and rural residence) to literacy acquisition (Table 7.10).

Exclusion from a society’s mainstream may result from a lack of recognition or respect for a certain group’s cultural heritage, or from negative stereotypes that characterize group members as in some way inferior, primitive, backward or

Urban residents are more likely to be literate than rural residents

35. Household surveys using third-party assessments of literacy may be biased since a single respondent (typically the head of household) may provide inaccurate literacy assessments about other household members. Multilevel analyses of literacy (i.e. for individuals, households and sampling ‘clusters’) found that: (a) the sign, size and statistical significance of coefficients associated with major independent variables were similar at the household and ‘cluster’ levels to those at the individual level (see Carr-Hill, 2005a) (this is to be expected given the large sample sizes involved); and (b) comparisons of the variances attributable to each of the three levels show that household-level variance is always smaller than both that attributable to the individual and to the cluster. This suggests, though it does not confirm, that the aforementioned household-level bias is relatively small.

36. Although most literature refers to the Minorities at Risk (MAR) data set (<http://www.cidcm.umd.edu/inscr/mar/>) – which estimates that approximately 900 million people worldwide (or 1 in 7) are subject to some form of exclusion – the MAR definition of excluded groups is not consistent with the one used here.

Table 7.10: Nepalese adult literacy rates by caste/ethnicity, 1991 and 2001

Caste/Ethnicity*	Literacy rate for those aged 6 years and over (%)		Increase in literacy rate (percentage points)
	1991	2001	
Hill/Terai B/C+	53.1	67.5	14.4
Terai Middle Caste	29.6	41.7	12.1
Dalit	22.6	33.8	11.2
Janajati	39.9	53.6	13.6
Religious minorities	23.1	34.5	11.3
Others	25.6	50.1	24.5
Total	40.1	53.7	13.7

* 'Hill/Terai B/C+' refers to upper castes; 'Dalit' refers to twenty-two 'untouchable' caste groups; and 'Janajati' to sixty indigenous groups.
 Source: Koirala and Aryal (2005).

from, census- or household-based literacy assessments (Carr-Hill, 2005a). The homeless, illegal migrants and street children, for example, cannot easily access public services, including education, and are excluded from household-based samples. Another neglected population is the institutionalized – be they in care facilities, on military bases or in prisons (see Box 7.2, on prisoners). Additional examples of undercounted and excluded groups (whose numbers vary considerably among different societies) include internally displaced persons and refugees, as well as nomadic, pastoralist and highly mobile populations.

Even when such excluded groups are included in literacy assessments, response rates are often low, owing to a variety of factors including security concerns, transportation difficulties and unstable households due to HIV/AIDS, immigration or natural disasters. In Asia, Latin America and sub-Saharan Africa, poor households in peri-urban areas are widely under-represented in national censuses. Unstable or hard-to-reach households impede

Discrimination towards members of excluded groups can trap them in a cycle of illiteracy

uncivilized. Subtle or overt discrimination towards members of these groups often results in reduced access to formal education and literacy programmes, thereby trapping them in a cycle of illiteracy. Yet, knowledge about the literacy levels of these groups is limited since they often go undetected in, or omitted

Box 7.2 Prisoners

There are approximately 10 million individuals incarcerated worldwide. Countries with the largest prison populations are the United States, China, the Russian Federation, Brazil, India, Ukraine, Mexico and South Africa (International Centre for Prison Studies, 2005). Prisoners, as a group, have had limited learning opportunities and often belong to socially disenfranchised groups prior to incarceration. Prison populations tend to be disproportionately poor and male. Unsurprisingly, the educational levels of inmates are lower than national averages. In Canada, for example, more than eight out of ten prisoners have not completed secondary school. In the United Kingdom and Portugal, a majority of prisoners have obtained no more than a primary-school education. In Romania and Brazil, a majority of prisoners are illiterate or have not completed primary school. Finally, foreigners and national minorities are overrepresented in prison populations. In Malaysia, Saudi Arabia and the European Union, over a quarter of all prisoners are foreign nationals (European Offenders Employment Forum, 2003).

International data on prison-based literacy or educational programmes are difficult to obtain and rarely comparable. Multiple actors are involved in such programmes, including trainers from the Ministry of Education, social workers, religious workers and volunteers. Literacy provision for prisoners is fraught with challenges. Prison-based educational activities tend to be organized by volunteers or on an ad hoc basis by community associations, NGOs, religious groups and civil society organizations. Literacy or basic skills classes are usually not provided in the mother tongue. In some countries (e.g. United Kingdom, New Zealand and South Africa), prisoners are charged for courses, which acts as an additional disincentive. In other places (e.g. Brazil, France, New Delhi), while authorities claim educational opportunities are available to all prisoners, actual participation rates in such programmes vary greatly (Hanemann and Mauch, 2005). Unlike 'conventional' adult literacy programmes, educational activities in prison rarely meet minimum requirements for successful learning (de Maeyer, 2005). Conditions of overcrowding, lack of classroom space and inappropriate literacy materials are not conducive either to learning or to practising literacy skills.

the measurement and monitoring of literacy, since lists of sampled households become quickly out of date.³⁷ The context in which the assessment occurs (e.g. crowded, cramped or noisy homes) can also reduce data quality. On the other hand, if respondents are requested to come to assessment centres – where ‘standard’ conditions prevail – response rates decline. Adjustments can be made for some of these problems, but literacy assessments of excluded groups are rarely complete or of high quality.

Indigenous peoples³⁸

There are approximately 300 to 350 million indigenous people, who speak between 4,000 and 5,000 languages, live in more than 70 countries and account for 5% of the world’s population (UNDP, 2004a).³⁹ Over 60% of indigenous or tribal peoples live in Asia, about 17% in Latin America, and the remainder in Africa, Europe and North America (UNDP, 2004a). India, for example, is home to 90 million indigenous people (about 8% of its population), who belong to some 400 tribal groups (UIE, 1999). Large indigenous populations reside particularly in Mexico, Bolivia, Peru, Ecuador, Guatemala, Canada and the United States (UNDP, 2004a). Many other indigenous communities are scattered throughout Oceania, in particular Papua New Guinea.

More often than not, population censuses disregard, or are not allowed to assess, the ethnicity of their populations, thereby limiting knowledge on these groups’ literacy and

educational circumstances.⁴⁰ Available evidence suggests that significant disparities exist between indigenous and non-indigenous populations. For example, the national literacy rate in Ecuador was 91% (based on 2001 census figures), but was only 72% for indigenous groups (Torres, 2005). In Bangladesh, only 18% of indigenous peoples were literate (1991 census figures), as compared to the national figure of 40% (Rao and Robinson-Pant, 2003). In Namibia, the adult literacy rate among the San population is approximately 20%, as compared to the 95% rate among the Afrikaans population (UNDP, 2004a). Viet Nam has a national literacy rate of 87%, but it has a literacy rate of only 4% for some indigenous groups such as the Lolos. Nepal’s Dalit population has a significantly lower adult literacy rate than the rest of the population (Table 7.10).⁴¹ According to the 1996 Adult Literacy Survey in New Zealand, significantly higher percentages of Maoris than non-Maoris scored below the minimum level required to meet the ‘complex demands of everyday life and work’ in prose, document and quantitative literacy.⁴² Literacy rates among the Roma in Central Europe are lower than those of majority populations (Ringold et al., 2004).

There are also substantial literacy gender gaps among indigenous peoples. In Cambodia, for example, the literacy rate among indigenous communities in the Ratanakiri and Mondulakiri provinces is a mere 2% for women, but 20% for men. In Viet Nam, the lowest literacy rates are found among indigenous girls and women (UNESCO/PROAP, 2001). In Rajasthan, India, the literacy rate among indigenous women was 8%, compared to 39% among indigenous men (Rao and Robinson-Pant, 2003). Likewise, female literacy rates among Peruvian and Bolivian indigenous populations are much lower than those for men (UNESCO/OREALC, 2004).

No (or limited) access to formal schooling has clearly resulted in lower literacy levels among indigenous populations. Ecuador’s indigenous population (aged 24 and older) has completed, on average, 3.3 years of formal schooling; the corresponding figure for the non-indigenous population is 7.3 (Torres, 2005). Seventeen per cent of Canada’s indigenous 15- to 49-year-olds reported no formal schooling or less than Grade 9 as their highest level of education, in contrast to 6% in the non-indigenous population. Disparities in educational attainment were even larger among older age groups according to Ningwakwe (2002). Recent census figures in Australia indicate

In Namibia, the adult literacy rate among the San population is approximately 20%, as compared to the 95% rate among the Afrikaans population

37. Such households may include: elderly household heads with young children, grandparent households; large households with unrelated fostered or orphaned children attached; child-headed households; single-parent, mother- or father-headed households; cluster foster care – where a group of children is cared for formally or informally by neighbouring adult households; children in subservient, exploited or abusive fostering relationships; itinerant, displaced or homeless children; neglected, displaced children in groups or gangs (Hunter and Fall, 1998).

38. Indigenous peoples are descendants of the original inhabitants of a region, prior to colonization, who have maintained some or all of their linguistic, cultural and organizational characteristics. International organizations including the United Nations, the International Labour Office and the World Bank have applied the following four criteria to distinguish indigenous peoples:

- They usually live within or maintain an attachment to geographically distinct ancestral territories.
- They tend to maintain distinct social, economic and political institutions within their territories.
- They typically aspire to remain distinct culturally, geographically and institutionally, rather than to assimilate fully into national society.
- They self-identify as indigenous or tribal (UNDP, 2005).

Self-identification is regarded as a fundamental criterion for determining an indigenous status, which is being claimed by many ‘politically marginalized, territorially based ethnic groups ... who are culturally distinct from the majority populations of the states where they live’ (Minority Rights Group website, 2003, cited in Rao and Robinson-Pant, 2003).

39. Indigenous groups account for approximately two-thirds of the world’s 6,700 mostly oral languages (Skutnabb-Kangas, 2001).

40. Important exceptions include Bolivia, Brazil, Mexico and Peru. Namibia is the only country to calculate the human development index by linguistic group (UNDP, 2004a). Indigenous organizations repeatedly emphasize that data collection and data disaggregation are critical tools for advocacy and policy development concerning indigenous issues such as literacy (see, for instance, <http://www.unhcr.ch/indigenous/forum.htm>).

41. The National Dalit Commission defines as *Dalit* those communities which, by virtue of caste-based discrimination and ‘untouchability’, are less developed in the social, economic, educational, political and religious spheres and are deprived of human dignity and social justice (UNDP, 2004a).

42. Percentages of Maoris who scored below the minimum level were: in prose literacy, 67%; in document literacy, 72%; and in quantitative literacy or numeracy, 72%. The respective figures for non-Maoris were 42%, 47% and 46% (Statistics New Zealand [Te Tari Tatau], <http://www.stats.govt.nz/>, accessed 16 February 2005.)

that 3% of indigenous adults never attended school, compared with only 1% of non-indigenous adults (Australian Bureau of Statistics, 2003). Roma throughout Europe have attended school less than non-Roma (Ringold et al., 2003) (Box 7.3).

Box 7.3 Roma in Spain

Roma have lived in Spain for over six centuries but still remain excluded from society. The Spanish Roma community numbers approximately 650,000, half of whom are under 18, out of a total population of 40 million inhabitants. Levels of education attainment among Roma children have been low due to late commencement of schooling, irregular attendance and early drop-out rates. Since 1994, however, there have been improvements in primary school attendance, with more than 90% of Roma children officially entering infant or primary schools. Increasingly, Roma families are deciding themselves to send their children to school, rather than being directed to do so by social services. While growing numbers of Roma youth are enrolled in secondary education, their need to support their families and assume adult responsibilities continues to result in high drop-out rates

Source: Vélaz de Medrano (2005).

a means of sedentarization and settlement (Kratli, 2000). The development of boarding schools and hostels (e.g. in Kenya) represents another strategy to reach these children. The issue of cultural opportunities lost through such programmes has been recognized, but there has been little systematic response to these communities' needs (Carr-Hill, 2005a).

Migrants

Worldwide, migration has grown dramatically in recent decades. According to the International Organization for Migration, the number of international migrants has increased from 76 million in 1960 to over 185 million today, with a wider range of sending and receiving countries (UNDP, 2004a). Economic betterment remains the overwhelming motive for the massive migration from the South to the North. The break-up of the former Soviet Union, greater economic interdependence, cheaper and more accessible transportation, and increases in refugees and displaced persons due to wars and political conflicts have also been significant factors.

Internal migrant flows typically exceed international flows. In China, for example, over 120 million rural residents had moved into urban areas, whereas 'only' 550,000 Chinese nationals were living and working abroad (International Organization for Migration, 2005). Internal migration also predominates in Bangladesh, Cambodia, Ethiopia, India, Mongolia, Pakistan, Viet Nam and most of sub-Saharan Africa (International Organization for Migration, 2005).⁴³

Migration flows tend to raise the demand for literacy skills among both the migrants and those family members who remain behind. For example, male Senegalese migrants living in France write home to their families, using French. Then their wives, many of whom cannot read French, must often ask others in their communities to translate their husbands' letters for them. Today, as the cost of international calls decreases, mobile phones are increasingly being used by migrant families to send short written messages, a factor that appears to be adding to the demand for literacy.

Yet it is difficult to generalize about the varying literacy situations and learning needs of heterogeneous migrant populations. For example, between 500,000 and 1 million adults in the United Kingdom do not speak English as their first language (Department for Education and Skills, 2001). Their literacy skills and second-

Migration flows raise the demand for literacy skills among both the migrants and those family members who remain behind

Nomadic or pastoralist populations

Nomads or pastoralists, who number in the tens of millions, are geographically mobile groups found primarily in the African drylands, the Middle East and parts of Asia. In Nigeria, for example, approximately 10 million people (8% of the total population), including about 3.6 million school-aged children, are pastoralist nomads or members of migrant fishing communities. The National Commission for Nomadic Education, Nigeria, has estimated that, in 1990, the literacy rate among Nigerian nomads was 0.02%, and among migrant fishermen, 2%. In the Afar region of Ethiopia, the literacy rate for adults was 25% in 1999, but only 8% in the rural pastoralist areas (Carr-Hill, 2005b).

In general, the mobile lifestyles of nomadic groups have hindered their access to education (Ezeomah, 1997). The low population density and the high cost of providing formal schooling to nomadic and pastoralist children has led many countries such as Mongolia to use education as

43. Figures for internal migration should be treated with caution since movement into cities in most countries is neither well regulated nor visible.

language levels vary by country of origin, as well as gender. Among Somali in the United Kingdom, 90% of men, but only 60% of women, can read in Somali. Yet most language courses assume that participants are already literate in their mother tongue or that illiterate immigrant adults can be taught to read and write in English at the same time as acquiring skills in first languages (Martinez Nateras, 2003).

Literacy training for international migrants can be impeded by a variety of factors, including instruction in a foreign language, lack of programmatic flexibility, and the location and provision of the courses. The problematic legal status of migrants – and their fear of deportation – can act as powerful deterrents to participating in literacy courses. Many of these issues also apply to internal migrants, who face considerable difficulties when moving from one region to another. A literate migrant from a rural community might become ‘illiterate’ in an urban community that uses different written languages and more technologically advanced communication systems. For instance, in practical terms, the literacy ability of rural Tamils who move to New Delhi will worsen if they cannot read and write in Hindi. In some countries, internal migrants who live in impoverished urban areas face long-term insecurity and therefore have little incentive to invest in long-term learning programmes. Thus, even if the provision and management of urban-based literacy programmes are easier than rural-based ones, there may be little uptake (Sharma et al., 2002).

Persons with disabilities

Over 600 million people (about 10% of the world’s population) – two-thirds of whom live in low-income countries – have a disability of one form or another. The World Health Organization (WHO) points out that health risks such as poverty, malnutrition, armed conflict and natural disasters – together with increased life expectancy in industrial countries – will increase the number of people with disabilities (WHO, 2005). The OECD has established three categories of disability: disabilities for which there is substantive normative agreement (e.g. blindness, deafness and severe intellectual impairment); disabilities that are manifested as learning difficulties; and disabilities that are the result of socio-economic, cultural and linguistic disadvantages.⁴⁴ The UN is addressing these multiple needs by drafting a

Convention on the Protection and Promotion of the Rights and Dignity of Persons with Disabilities.

People with disabilities are often invisible in official statistics. It is estimated that about 35% of all out-of-school children have disabilities (Erickson, 2005) and that fewer than 2% of children with a disability are enrolled in school (Disability Awareness in Action [DAA], 2001). In Africa, more than 90% of all disabled children have never gone to school (Balescut, 2005). In Canada and Australia, more than 40% of disabled children have only completed primary education (DAA, 1998).

Gender also influences the relationship between disabilities and illiteracy: limited data suggest that gender disparities in literacy rates are greater for people with disabilities (DAA, 1994). In 1998, for example, a large proportion of blind and other disabled girls in South Asia remained illiterate, while the general rate of literacy among women increased considerably in all South Asian countries. In India in the same year, more than 95% of disabled male children received no education. Educational exclusion is thought to be higher among disabled female children (DAA, 1998).

There is little comparative information regarding the literacy achievements of students with disabilities. National assessments in the United States suggest that only half of the students who receive special education services participated in the National Assessment of Educational Progress (NAEP) and even fewer participate in state-wide testing (Elliot et al., 1995).

Towards an expanded understanding of literacy

The global challenge of literacy is much greater, both quantitatively and qualitatively, than the analysis so far presented in this chapter would seem to imply. The results are based almost exclusively on conventional indirect assessments and a dichotomy between ‘literate’ and ‘illiterate’, which are now considered to be quite inaccurate, and overly simplistic, so that large-scale adult literacy surveys no longer rely on them.

The present section highlights alternative measures and assessments of literacy and seeks to demonstrate the value of ‘non-conventional’ approaches that:

- incorporate direct (rather than indirect) assessments of literacy;

People with disabilities are often invisible in official statistics

44. This framework should be applied cautiously; it runs the risk of enabling authorities to claim to be addressing the different needs of these categories, while only skimming the surface of each. Without careful attention to the range of individual needs represented by each category, categorization can serve to exclude the most needy (Erickson, 2005).

- measure literacy with ordinal or continuous scales (rather than as dichotomies); and/or
- conceive of literacy as a multidimensional (rather than a uni-dimensional) phenomenon.

It is important to note that these more recent and 'non-conventional' studies of literacy still have much in common with previous research. For instance, recent comparative assessments continue to view literacy as a set of cognitive skills acquired by individuals, that can be measured independently of the context in which the acquisition process occurred. The change in approach is more one of nuance – a growing emphasis on the application of literacy skills in everyday life or, 'how adults use printed and written information [such as news stories, editorials, poems, forms, books, maps, transportation schedules and job applications] to function in society' (OECD/HRDC, 1997). While the notion of *functional literacy* has been disseminated widely since the 1970s, it is only now being practically assessed with multiple dimensions, each measured along continuous scales.

Direct assessments of literacy in developing countries

For over a decade, calls have circulated for improved literacy measures, especially for developing countries, (e.g. Terry, 2003; United Nations Statistical Office, 1989; Wagner, 2005). So, too, has the recognition that such measurement strategies must be simpler and cheaper than those used in OECD countries (Wagner, 2003). Yet, until recently, there was little consensus about how best to measure and monitor literacy in the developing world.

Concurrently, various countries and agencies have carried out household surveys with direct assessments of literacy (Table 7.11 and Box 7.4). These assessments evolved in a decentralized fashion, frequently under severe resource constraints. Not surprisingly, the resulting reports vary in quality, and often provide limited information about the survey's design and implementation (Schaffner, 2005).

Despite these limitations, these studies clearly show that indirect assessments usually overstate 'true' literacy levels. In Morocco, while 45% of sampled respondents reported being literate (self-assessment), only 33% demonstrated a basic literacy competence and only 24% demonstrated a full competence. In Bangladesh, only 83% of those who indicated they could read actually achieved the minimal reading level when

Table 7.11: Developing country household-based surveys with direct literacy assessments

Survey	Year*
Zimbabwe Literacy Survey	1986
Kenya Literacy Survey	1988
Ghana Living Standards Measurement Survey	1988–89
Morocco Literacy Survey	1991–92
Bangladesh: Assessment of Basic Learning Skills	1992
Botswana: National Survey on Literacy	1993
U.R. Tanzania Human Resource Survey	1993
Namibia: Adult Literacy in Ondangwa and Windhoek	1994
Indonesia Family Life Survey (Wave 3)	2000
Ethiopia Demographic and Health Survey	2000
Nicaragua Demographic and Health Survey	2001
Lao PDR National Literacy Survey	2001
Ghana Household and School Survey	2003
<i>Additional household surveys with direct assessments</i>	
Jamaica National Literacy Survey	1994
Trinidad and Tobago National Literacy Survey	1995
Jamaica Adult Literacy Survey	1999
Chile International Adult Literacy Survey	1998
Malta National Literacy Survey	1999
Cambodia National Literacy Survey	1999
Bermuda Population Census	2000

* Note: The year indicates the year of the survey, not the year of survey-based reports/publications.

Sources: General: Schaffner (2005). See also Chilisa (2003); Knight and Sabot (1990); Bangladesh: Greaney et al. (1998); Bermuda: Blum et al. (2001); Botswana: Commeyras and Chilisa (2001); Cambodia: ACCU (1999); Chile: Blum et al. (2001); Ethiopia: <http://www.measuredhs.com>; Ghana: Operations Evaluation Department (2004); World Bank (1999); Indonesia: Strauss et al. (2004); Jamaica: Statistical Institute of Jamaica (1995); Lao PDR: Lao People's Democratic Republic, Ministry of Education, Department of Non-formal Education (2004); Malta: Mifsud et al. (2000a, 2000b); Morocco: Lavy et al. (1995); Namibia: Namibia Ministry of Education and Culture and University of Namibia (1994); Nicaragua: <http://www.measuredhs.com>; U. R. Tanzania: <http://www.worldbank.org/html/prdp/lsm/country/tza/tanzdocs.html>; Trinidad and Tobago: St Bernard and Salim (1995); Zimbabwe and Kenya: United Nations Statistical Office (1989).

asked to complete a simple test. In the United Republic of Tanzania, household reports tended to overstate literacy rates (Schaffner, 2005).

The upward bias of indirectly assessed literacy tends to be greater among individuals with few years of schooling. In the Demographic and Health Surveys⁴⁵ conducted in Ethiopia (2000) and Nicaragua (2001), there was a strong tendency for conventional assessments to overstate literacy

45. The Demographic and Health Survey (DHS) programme, funded by the United States Agency for International Development (USAID) and administered by ORC Macro, has implemented nearly 200 household surveys in over seventy countries since 1984 (<http://www.measuredhs.com>). Most DHS instruments prior to 2000 collected only household reports on literacy. After a significant revision of the model questionnaire in 2000, DHS instruments now contain simple direct assessments of reading skills. Respondents are asked to read a simple sentence in their mother tongue, and the interviewer records whether the respondent was able to read some, all, or none of the sentences. Sentences include: 'Parents love their children', 'Farming is hard work', 'The child is reading a book', and 'Children work hard at school.' According to DHS documents, the process of revising the questionnaires involved a large number of experts and users from a variety of international organizations.

Indirect assessments usually overstate 'true' literacy levels

Box 7.4 Direct assessments of 'literacy as skills'

Many view literacy as the possession of skills related to the interpretation or use of written language and symbols. Yet conceptions of 'literacy as skills' differ as regards the types and levels of skills individuals must possess in order to be considered literate. Direct assessments of literacy typically involve a two-stage approach: first, skill domains are identified and then the skills are categorized into literacy levels.

Determining skill domains necessitates choices about whether the required skills relate to:

- reading, writing, oral or written mathematical calculations, or the interpretation of visual information other than words;
- tasks commonly performed in school contexts or in everyday life;
- the use of 'any' written language (including various mother tongues), or only the use of a specific official, national or international language.

Then, within each skill domain, individuals are categorized into one of several skill levels or categories. For example, those who are able to identify letters and sound out words, read aloud a simple sentence, or read a letter with understanding, may be placed in the respective categories of 'pre-literate', 'basic literacy' and 'functional literacy'. Those who cannot complete any of these tasks may be labelled 'illiterate'. Alternative strategies view literacy as a continuum and measure literacy levels with a continuous score in each skill domain.

Some important lessons from direct assessments of literacy skills:

- The key skill domains to assess literacy are: reading/writing in the official language, reading/writing in the local language, oral mathematics and written mathematics. These six domains constitute distinct competencies.

- Interpreting results about a particular literacy skill based only on a single test item is extremely problematic. Several questions should be used to measure each skill domain.
- Sorting respondents into a small number of clearly defined categories of skill levels appears more useful than assessments aimed at giving respondents continuous cognitive skill scores.
- Determining whether individuals can 'decode' a written language by having them read aloud a simple sentence can be done simply and with reasonable accuracy. By contrast, attempts to assess higher skill levels involving comprehension and interpretation of prose or documents are more problematic, especially if comparability across countries or ethno-linguistic groups is sought. In short, the quality, ease and comparability of direct literacy assessments decrease as the level and range of literacy skills to be measured increases.
- Establishing a clear protocol for test administration, which minimizes the amount of discretion on the part of interviewers or test administrators, is important. So too is extensive pre-testing in local contexts.

Source: Schaffner (2005).

Among Ethiopian women with one year of schooling, 59% were considered literate by household assessments, while only 27% passed a simple reading test

among minimally schooled populations. Among Ethiopian women with one year of schooling, 59% were considered literate by household assessments, while only 27% passed a simple reading test. Among Ethiopian men with one year of schooling, the literacy rate was 65% based on household assessments, but only 33% based on direct assessments. In Nicaragua, indirectly assessed literacy rates were higher than directly assessed rates in all education groups. Though the differences were smaller than in Ethiopia, they were especially high for individuals with only a few years of schooling. This tendency, however, is not universal: in Botswana, for example, it was

found that only 2% of those who said they could read or write in English or Setswana failed the related direct test (Schaffner, 2005).

In short, the extent to which indirect literacy assessments overstate actual reading and writing skills varies from country to country. The evidence suggests that these biases are larger in countries where educational attainment is lower and school quality weaker. Additionally, in those countries where conventional assessments tend to greatly overstate actual literacy levels, the overstatement is greater for men than for women. This is true even when the direct assessment is based on simple measures of rudimentary reading skills.

Box 7.5 Literacy surveys in Botswana and Brazil

■ Several attempts to include literacy-related questions in **Botswana's** national censuses of 1981 and 1991 were rejected on the grounds that the census questionnaire would be too long. The first national survey to establish the literacy rate in Botswana was carried out in 1993 and covered a total population of 1.5 million people (46% male and 54% female). In the survey, 'objective literacy' was defined as 'the ability to read and write in either Setswana, English, or both; and the ability to carry out simple mathematical computations'. 'Ability' was ascertained through the results of literacy tests, and respondents who scored above 50% were categorized as literate. The second national literacy survey, carried out ten years later, expanded the target group to cover all citizens aged 10 to 70. The total population estimated from this second survey was 1.9 million (47% male, 53% female). A total of 7,280 households (46% rural and 55% urban) were selected for the survey, with a response rate of 94%. The two national literacy surveys constitute a milestone in the effort to provide a reliable database for politicians and decision-makers, as well as managers of the Botswana National Literary Programme. They mirror an innovative policy to systematically monitor the evolution of literacy in the country. Botswana's policy now is that literacy surveys are to be conducted every ten years, when new National Population Census data are available.

■ In **Brazil**, surveys of the literacy levels of the adult population based on skills testing are conducted at the initiative of the National Functional Literacy Index (NFLI). With the objective of fomenting a debate and public engagement in the literacy issue, NFLI has been divulging, ever since 2001, the results of annual household surveys done with sample groups representing the Brazilian population, aged 15 to 64 (Masagão Ribeiro, 2003; Fonseca, 2004). Four surveys have been carried out: two for reading and writing, and two for mathematics. Besides skills testing, detailed questionnaires have been administered on reading, writing and mathematics practices in various contexts: home, work, religious, community participation and continuing education. NFLI uses a comprehensive concept of literacy, understood as the skills involved in the use of written language and numeric calculation, and its actual use in social practices, by individuals, social groups and societies, as well as the meaning those individuals and groups attribute to the development of those skills and practices.

Sources: Masagão Ribeiro and Gomes Batista (2005); Hanemann (2005a).

Direct assessments show that there is no uniform educational threshold at which 90% of adults achieve literacy

Direct assessments of literacy also challenge assumptions about the number of school years needed for literacy skills to be acquired and retained. As discussed above, sorting individuals into 'literate' and 'illiterate' categories based on the completion of a predetermined educational threshold (say, four, five or six years) is a highly inaccurate procedure. Direct assessments of literacy carried out in different contexts show that there is no uniform educational threshold at which 90% of adults achieve literacy. In some cases, the vast majority of adults attain basic literacy after four years of schooling, and, in others, only after nine years, reflecting in large measure the quality of schooling they receive. In short, direct assessments of literacy indicate that: (a) a standard educational attainment proxy for literacy across developing countries does not exist; and (b) educational thresholds for widespread literacy tend to be *higher* than previously assumed.

Large-scale comparative surveys of adult literacy

The International Adult Literacy Survey (IALS) represents the largest comparative survey of adult literacy ever undertaken. Carried out in three phases (1994, 1996 and 1998), in some twenty developed countries,⁴⁶ it incorporates each of the aforementioned 'non-conventional' components (Box 7.6).

The findings indicate the extent to which significant segments of the adult populations in many developed countries possess only low levels of literacy skills (such as being able to read and understand newspapers and brochures) that many consider necessary for productive

46. The first survey took place in 1994 and covered nine countries: Canada (English- and French-speaking), France, Germany, Ireland, the Netherlands, Poland, Sweden, Switzerland (German- and French-speaking regions) and the United States, with France withdrawing from the survey in November 1994. A second study was conducted in 1996, which included samples from Austria, the Flemish Community of Belgium, New Zealand and the United Kingdom. A third round of data collection (1998) was carried out in Chile, the Czech Republic, Denmark, Finland, Hungary, Italy, Norway and the Italian-speaking region of Switzerland (OECD/HRDC, 1997; OECD/Statistics Canada, 1995, 2000).

Box 7.6 Literacy assessment in the International Adult Literacy Survey

Nationally representative samples of adults aged 16–65 responded to two questionnaires: one measuring literacy knowledge and skills in three domains (prose, document and quantitative literacy) and the other asking for background information on education, labour force participation, income, language proficiencies and literacy practices. Trained interviewers carried out the two phases of the survey at the respondent's home, which typically took about forty-five minutes to complete the background questions and sixty minutes for the literacy tasks. In each literacy domain, IALS developed a series of tasks, which were intended to minimize cultural and linguistic differences, and which became the basis for placing individuals on a continuous scale ranging from 0 to 500 points. Scores on this scale were categorized into five literacy levels: from levels 1 and 2, for individuals with relatively poor literacy skills, to levels 4 and 5, where individuals command higher-order information-processing skills. Literacy ability was defined as the point in each domain where an individual has an 80% chance of successful completion of a set of tasks of varying difficulty.

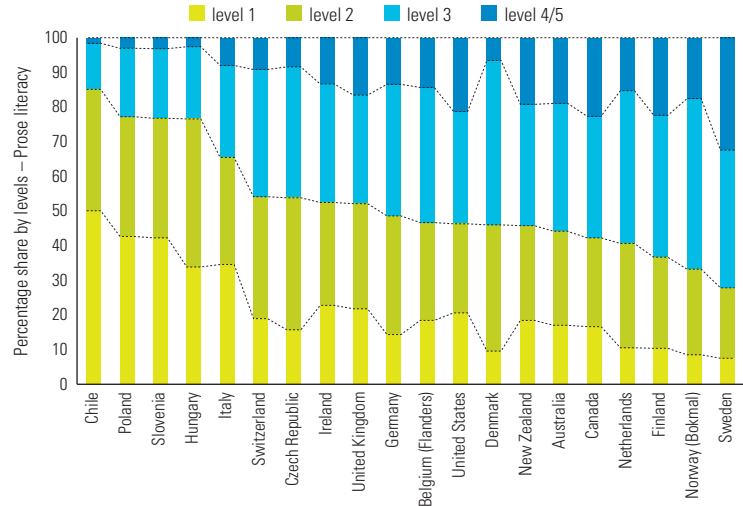
Source: OECD/Statistics Canada (2000).

employment and prosperity in knowledge-based societies (Figure 7.11). Even in the Nordic countries, where most adults performed well in all three literacy areas (prose, document and quantitative), there were significant proportions whose skill levels were barely above the minimal threshold. In other areas, notably in Eastern Europe and Chile, more than two-thirds of adults aged 15–65 have relatively weak literacy and numeracy skills, and literacy levels tend to be distributed in a highly unequal manner. (See the map *Literacy challenges in selected countries*, p. 184)

A more recent comparative adult literacy project, the Adult Literacy and Life Skills Survey (ALL), was conducted in six countries in 2003.⁴⁷ Like IALS, the ALL survey defined literacy and numeracy in functional terms and described the distribution of these skills among adults in

47. Participating countries were Bermuda, Canada, Italy, Norway, Switzerland and the United States. Adults surveyed ranged in age from 16 to 65 (Statistics Canada/OECD, 2005). Currently, a second phase of ALL is underway.

Figure 7.11: Distribution of adults by level of prose literacy proficiency, 1994–1998



Note: The figure shows the distribution of adults by level of prose literacy proficiency, defined as the ability to understand and use information from texts such as news articles or fiction. Results were categorized into five different levels (1 being the lowest and 5 the highest), based on an analysis of the skills represented by the type of tasks successfully completed by the reader. Countries are listed in ascending order based on mean results for prose literacy.
Source: OECD/Statistics Canada (2000).

each participating country.⁴⁸ The basic findings from the ALL survey are very similar to those from IALS.

Much of the distribution of literacy and numeracy skills among adults in industrialized countries is related to the distribution of completed schooling in each country (Somers, 2005).⁴⁹ However, the level of literacy skills of individuals with low levels of education varies greatly from country to country, while individuals with high levels of schooling have fairly high literacy skills no matter what their country. Countries with large immigrant populations, many linguistic minorities, low labour force participation rates and limited access to adult education were more likely to have adult literacy skills dip below the levels expected based on completed schooling (Somers, 2005). Thus, improving school quality for the least advantaged socio-economic groups, offering high-quality language training to immigrants and their children (as well as to other linguistic minorities),

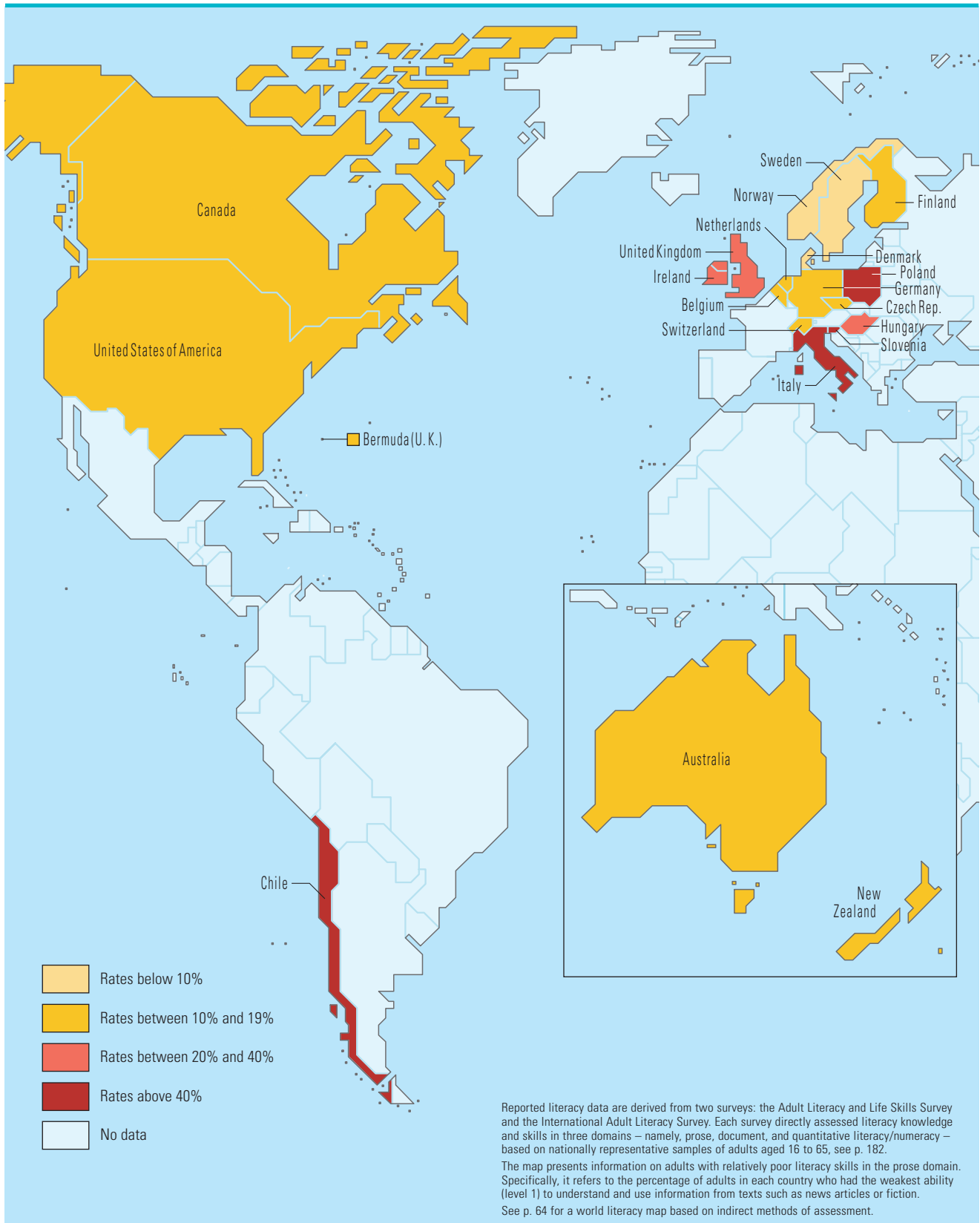
Even in the Nordic countries, there were significant proportions whose skill levels were barely above the minimal threshold

48. Literacy was defined as the knowledge and skills needed to understand and use information from text and other written formats. Numeracy was defined as the knowledge and skills necessary to manage mathematical demands of diverse situations.

49. The shape and strength of the relationship between educational attainment and literacy varies by literacy component and country.

Literacy challenges in selected countries and territories

Percentage of adults aged 16 to 65 with very poor skills in prose literacy



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by UNESCO.

Based on United Nations map

improving access to affordable training options for adults and publicizing the importance of lifelong learning, are all ways to improve the levels and equitable distribution of adult literacy in developed countries.

Adult literacy in urban China

In December 2001, an IALS-like survey designed to assess the literacy skills of urban Chinese workers (including migrants) was carried out in five cities, as part of a labour force survey (see Giles et al., 2003). The China Adult Literacy Survey (CALs) measured prose, document and quantitative literacy, using a continuous-scale approach, and represented the first survey of its kind in China.⁵⁰ Among other things, CALs reported the skill levels of different subpopulations in the urban Chinese labour force, by gender, migrant status and region, and underscored areas in which migrants and women are discriminated against in the labour market. In addition to identifying mechanisms for increasing opportunities for lifelong learning, CALs noted important policy implications regarding adult skill training, especially for disadvantaged groups in the labour market (Ross et al., 2005).

The Literacy Assessment and Monitoring Programme

The Literacy Assessment and Monitoring Programme (LAMP) is a cross-national and comparable direct literacy assessment project, mainly for developing countries, being designed by the UNESCO Institute for Statistics (UIS). The overall aim is twofold: first, to provide reliable and comparable estimates of the levels and distribution of functional literacy and numeracy skills; and, second, to contribute to national and international policy needs and decision-making processes. When fully implemented, LAMP surveys are intended to replace indirect assessments of literacy in censuses or household surveys. Plans are for LAMP surveys to be piloted in several countries (El Salvador, Kenya, Mongolia, Morocco and the Niger) towards the end of 2005, after which LAMP will be expanded to other countries.

A critical assessment

Alternative literacy assessments have expanded the conventional classification system beyond the literate/illiterate dichotomy by directly measuring literacy in multiple domains, using ordinal or continuous scales. These assessments have enabled comparisons within and across countries over time. In contrast to self-declarations and third-party assessments, direct literacy assessments provide literacy stakeholders with more accurate information on literacy trends and patterns. Moreover, countries involved in large-scale surveys such as IALS and LAMP benefit from capacity-building, given the design, implementation and dissemination demands of such surveys. Supporters of such literacy surveys recognize that there are trade-offs from such a complex and costly assessment exercises: the need for substantial human and financial resources; the time needed for item development, data collection and report preparation; and the complexity of the methodologies employed.

A common critique of large-scale, alternative assessments is their high costs (including hidden costs to national governments) and the limited sense of 'ownership' by local and national agencies.⁵¹ Others raise concerns over language and translation issues (Blum et al., 2001) and note problems with sampling frames, operational definitions and response rates (Carey, 2000). The time required to run large-scale assessments does not always permit governments and decision-makers to respond to literacy needs with timely policies.⁵²

Some critics question key assumptions inherent in existing or proposed literacy assessments like IALS and LAMP. For example, some scholars dispute whether a common measurement instrument can be developed to compare individuals from different education systems, using standard translation and psychometric scaling techniques (Goldstein, 2004). Others argue that cross-national literacy assessments assume incorrectly that literacy skills and practices have the same meaning across cultures, and that attempts to ground literacy survey items in real-life situations across

Direct literacy assessments provide more accurate information on literacy trends and patterns

50. The China Adult Literacy Survey was developed with the support of the World Bank, the Chinese Academy of Social Sciences, the University of Michigan and Michigan State University. The study was conducted in the same cities that were part of the China Urban Labour Study, in 2001. The Chinese team drew upon the IALS project at Statistics Canada for a part of the study. (For a detailed explanation of the survey, see Giles et al., 2003.)

51. Cost estimates of the IALS surveys run into the tens of millions of US dollars. The cost of a national literacy survey in Zimbabwe in 1989 was estimated at US\$100,000 (Wagner, 2003).

52. Wagner (2003) suggests three parameters should be considered when developing assessment tools in developing countries: smaller, quicker and cheaper.

Box 7.7 Implications for measuring and monitoring literacy

The measurement and monitoring of literacy and illiteracy has evolved considerably during the past fifty years. Today, more than ever, it is important to:

- clarify what is meant by 'literacy', including distinguishing among different types and levels of literacy;
- improve the measurement of literacy in both developing and developed countries, in part by moving away from census-based data to survey-based data;
- strengthen the direct assessment of literacy skills and practices;
- enhance technical capacities for measuring and monitoring adult literacy in developing countries.

From the perspective of the global monitoring of literacy, the present infrastructure for measuring and assessing literacy is inadequate. Proposals put forth by the UIS, in particular the LAMP strategy, while achieving considerable scientific rigour and cross-case comparability, raise difficult feasibility questions. As such, they contribute very little to monitoring progress towards the EFA literacy goal and, more broadly, to expanding literate environments and sustaining literacy competencies and practices. There is value in staking out – and legitimizing – a middle territory, one which goes beyond conventional approaches to measuring literacy and provides a feasible strategy for examining progress towards a significant improvement in adult literacy rates by 2015.

Tentatively, the *EFA Global Monitoring Report* calls for the construction of several types of self-standing literacy modules that would:

- address concerns of national policy-makers as well as those of international monitoring agencies by offering multiple measurement and assessment strategies;
- be easily incorporated into ongoing household surveys (e.g. on living standards, the labour force and consumption) carried out in developing countries;
- measure literacy and numeracy in the entire adult population (aged 15+);
- minimize the exclusion of groups often excluded from literacy surveys;
- constitute a relatively short (20- to 30-minutes) but sophisticated assessment tool, building on the accumulation of expertise in this field.

This is in line with new initiatives undertaken by the UIS to provide literacy assessment tools complementary to LAMP. In particular, there is considerable value in the Literacy Questionnaire Module Project, which consists of about ten questions for monitoring literacy trends that can be attached to existing surveys (either census or household surveys). Items on self-declaration, use of literacy skills, literacy environment and languages, along with two or three simple tests, would be included.

countries have been unsuccessful (Street, 2005). Yet another criticism is that IALS-like literacy tests neglect the cultural specificity of literacy skills and practices and inadvertently incorporate cultural biases (Hamilton and Barton, 2000; Street, 1996).

Overall, the development of comparable international statistics on literacy to monitor progress (or the lack thereof) poses special problems, which will continue to be debated among scholars, donors and policy-makers.

In response to earlier concerns over the validity, reliability and comparability of existing literacy data, new methods and data sources have been developed. There is considerable consensus (Box 7.7) that conventional assessments must be complemented with more detailed and nuanced literacy information. Indeed, to fully appreciate and address the enormous challenges of illiteracy, stakeholders and analysts must insist on feasible, timely, affordable *and* scientifically robust assessments of literacy.

Some literacy tests neglect the cultural specificity of literacy skills and practices and inadvertently incorporate cultural biases

Global literacy: the emerging challenge

This chapter has shown that adult literacy rates, as conventionally measured, have been steadily rising over the past decades, but that enormous challenges remain, especially in South and West Asia, the Arab States and sub-Saharan Africa. It has also shown that conventional measures of literacy overestimate the actual reading and writing skills of adults worldwide and therefore understate the global literacy challenge. More direct literacy assessments are needed more regularly, in order to allow countries to make informed decisions about alternative literacy policies; but these assessments must be relatively simple and inexpensive to obtain.

Moreover, the demand for improved literacy skills, beyond a necessary minimal level, is growing, especially in the wake of economic globalization, increasing internal and international migration, rapid technological change (including for information and communication technology) and the shift towards knowledge-based societies. These global trends imply an increased need to focus on reducing illiteracy, particularly for poor countries and for excluded groups everywhere – the EFA literacy goal – but also a need to continuously upgrade the quality of literacy skills of all adults. Chapter 8 will explore the broader social context for literacy, as well as how various factors have influenced changes in literacy throughout history. ■