Indicator Handbook for Primary Education: Abridged

Compiled by

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TABLE OF CONTENTS

OVERVIEW

This handbook presents education indicators commonly used by international organizations to characterize education systems and monitor progress towards increased educational attainment at the primary school level. The *EQUIP2 Indicator Handbook for Primary Education* was designed to assist USAID missions better understand which indicators are most useful for monitoring their own programs and to provide them a sense of relevance, reasonable rates of change, and patterns of change for the countries in which the missions are active. Each indicator comprises two components: a definition of the indicator, its purpose, data sources, and comments and limitations; and an overview of recent indicator trends in low- and middle-income countries.

Indicators described in this document provide quantitative, objectively verifiable means of measuring progress towards education goals and objectives. Many of these indicators provide a better understanding of the multiple purposes of education reform, such as increased access, improved efficiency, enhanced quality, measures of inputs, and measures of education outputs. EQUIP2 has arranged the indicators in the order most frequently encountered during the stages of an education system's reform.

Ultimately, the goal of most developing country education strategies is to increase literacy. Literacy rates show the accumulated achievement of primary education and literacy programs in imparting basic literacy skills to the population, thereby enabling people to apply such skills in daily life and continue learning and communicating using the written word. Literacy represents a potential for further intellectual growth and contribution to economic-socio-cultural development. Changes in literacy rates reflect long-term changes in a country's education attainment and are high-level indicators used to monitor objective progress towards this goal. Attainment rates are often used where literacy rates are not available or unreliable.

More direct objectives of an education strategy typically target one or more of three results in the education sector: increased access, equity, or quality. Access, or the level of popular participation in the education sector, is generally measured through intake, enrollment, and transition rates. Equity is measured by disaggregating an indicator by gender or other disadvantaged group and comparing it to the same indicator for the advantaged group. For gender equity, it is often convenient to construct male-female ratios or indexes.

Indicators of quality are more elusive. Two indicators have recently been put forward by the international community to measure quality: survival and completion rates. Survival rates, or the percentage of a cohort enrolled in first grade expected to reach a given successive grade, typically fifth, can be constructed from administrative data routinely collected by ministries of education. However, survival rates do not relate to the population (i.e., access), hence a country with very low enrollment rates may have high survival rates. The completion rate, or the ratio of the total number of students successfully completing a given grade of school to the total population of official school age for that grade, directly measures the attainment of a grade level for the population in a given year. This indicator is now being used by most international agencies, particularly The World Bank, as a preeminent indicator of both education coverage and quality. However, reliable estimates of single-age population, required for the denominator, are very difficult to obtain.

The results articulated in a country strategy may be achieved through a variety of reforms, processes, and inputs to the education sector. Of these activities, efforts to increase inputs such as financial resources, teachers, and textbooks are quantifiable. Many of the others can only be monitored through descriptive indicators.

A final class of indicators is often used to monitor how education systems relate to cohort flows: repetition, promotion, and dropout rates. These indicators, however, are interrelated—given two indicators, the third is calculated as a residual. Such indicators measure the internal efficiency of the education system and may also serve as diagnostic tools. Rising repetition rates in a country with

increasing enrollment can serve as an early warning sign of severe capacity constraints. Although it is tempting to use these indicators to measure progress towards an educational strategy, repetition and promotion are often manipulated through policy and other directives. For example, a country can mandate no repetition in primary grades. Hence, technically, repetition rates should drop to zero. Defacto, in most scenarios, drop-out rates soon rise dramatically as unprepared students fall further and further behind and leave the system.

When using any of these indicators, it is often difficult to determine what the reasonable targets are for changes in a system. To assist in this process, EQUIP2 provided statistical tables showing the average, maximum, and minimum values of indicators for developing countries grouped by region and country income level so that missions setting targets for a particular indicator, gross enrollment rate for example, very consciously know that the weighted average change in gross enrollment rate for low-income countries is one percentage point per year. Setting a target in excess of this amount, particularly in the absence of a fully funded universal primary education effort, might then be very difficult to attain.

Average annual changes across the period 1999 to 2002 are provided for regions and income groups. These tables provide general country indicator ranges and target-setting guidelines, although a fair amount of caution should be exercised. The extent to which a country can create education change depends on numerous factors not completely contained in a statistical table.

The following table maps the goal, result, or input and the associated indicators with their page numbers:

GOAL, RESULT, OR INPUT	INDICATOR	PAGE
ACCESS	APPARENT INTAKE RATE	3
	NET INTAKE RATE	5
	GROSS ENROLLMENT RATE	7
	NET ENROLLMENT RATE	9
	GENDER PARITY INDEXES FOR NET ENROLLMENT	11
INPUT	PERCENTAGE DISTRIBUTION OF PUBLIC CURRENT EXPENDITURE ON EDUCATION BY LEVEL	13
	PUBLIC EXPENDITURE ON EDUCATION AS PERCENTAGE OF TOTAL GOVERNMENT EXPENDITURE	15
	PUBLIC EXPENDITURE ON EDUCATION AS PERCENTAGE OF GROSS NATIONAL PRODUCT	17
	PUPIL-TEACHER RATIO	19
	PERCENTAGE OF FEMALE TEACHERS	21
EFFICIENCY	REPETITION RATE	23
QUALITY	SURVIVAL RATES BY GRADE	25
	COMPLETION RATE	27
LITERACY	ADULT LITERACY	29

Principle sources for the description and use of education indicators, as well as statistics provided in the document, are derived from UNESCO, The World Bank, and the Population Reference Bureau. The exact UNESCO language has been used in cases where explanations are extremely clear. Changes have been made in instances where terms were unclear or recent events have superceded an explanation. Summary information for Sub-Sahara Africa differs by source in some instances. EQUIP2 was able to explain most, but not all, of the differences, particularly those based on common data sources. The next version of this handbook will provide additional clarification.

APPARENT INTAKE RATE

Definition: Apparent intake rate is the total number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the population at the official primary school entrance age.
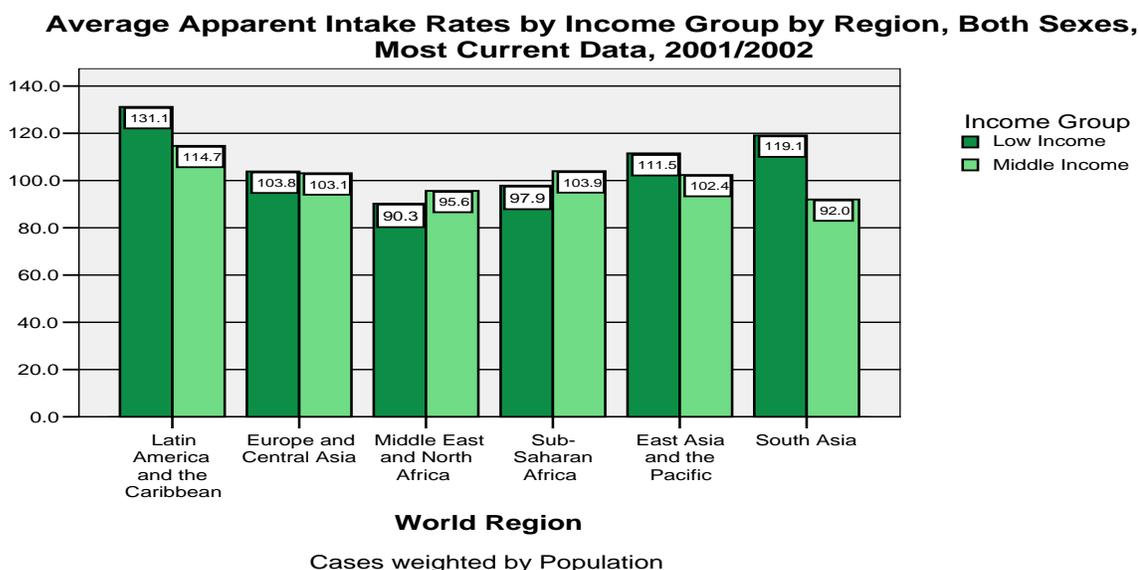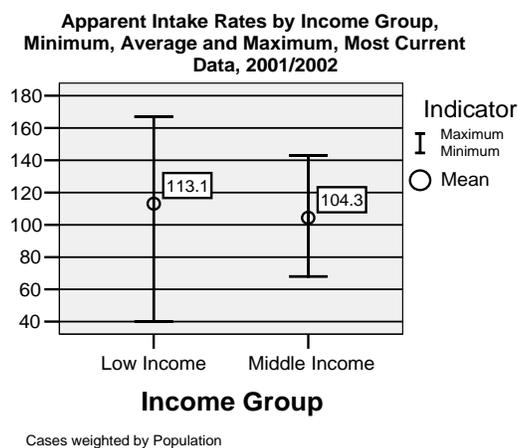
Purpose: The apparent intake rate indicates the general level of access to primary education. A rate of 100 percent indicates that a country is able, in principle, to provide its entire school entrance age population access to grade one. Intake rates also provide the most direct indicator of the effect of interventions on access to primary school.

Method of Computation: Divide the number of children who enter first grade for the first time, irrespective of age, by the population of the same age and multiply the result by 100. For example, in Uganda, where first grade has an official entry age of six years old, the apparent intake rate is calculated as total enrollment in the first year of primary school, regardless of age, divided by the total population of six year olds.

Data Sources and Periodicity: New entry data are recorded regularly by ministries of education and are available on a yearly basis. Population censuses are usually conducted at 10-year intervals. During non-census years, population estimates may be updated annually with vital registers; otherwise projections are used. Net intake rates may also be obtained from periodic sample surveys.

Data Trends: Apparent intake rates varied from 40 to well over 150 percent in low-income countries and from roughly 68 to 143 percent in middle-income countries, as shown in the chart Apparent Intake by Income Group, Minimum, Average and Maximum.

Average apparent intake rates exceeded 100 percent in many of the world's low- and middle-income countries. In contrast to net intake rates, which showed averages as low as 30 percent in some regions, average apparent intake rates were well above 90 percent worldwide, as shown in the chart Average Apparent Intake Rates by Income Group by Region, Both Sexes. This disparity may be evidence of late starting ages in some countries or an indication of data reliability issues surrounding age.

Apparent Intake Rates by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population

Average Apparent Intake Rates by Income Group by Region, Both Sexes, Most Current Data, 2001/2002

Cases weighted by Population

3

Annual changes in the apparent intake rate over the period between 1999 and 2002 were positive but fairly low, averaging 1.7 percentage points for low-income countries and only 0.3 percentage points for middle-income countries, as shown in the chart Annual Changes in Apparent Intake Rates by Income Group.

Apparent intake rates were higher for boys than girls across regions and income groups, with the exception of middle-income countries in East Asia and the Pacific. This disparity was particularly acute in low-income countries in the Middle East and North Africa, Sub-Saharan Africa, and South Asia, as shown in the chart Average Apparent Intake Rates by Region and Income Group by Sex.

Annual Changes in Apparent Intake Rates by Income Group, 1999-2002 (in Percentage Points)

		Average Annual Change
Income Group	Low Income	+ 1.7
	Middle Income	+ 0.3

All statistics weighted by population

Average Apparent Intake Rates by Region and Income Group by Sex, Most Current Data, 2001/2002
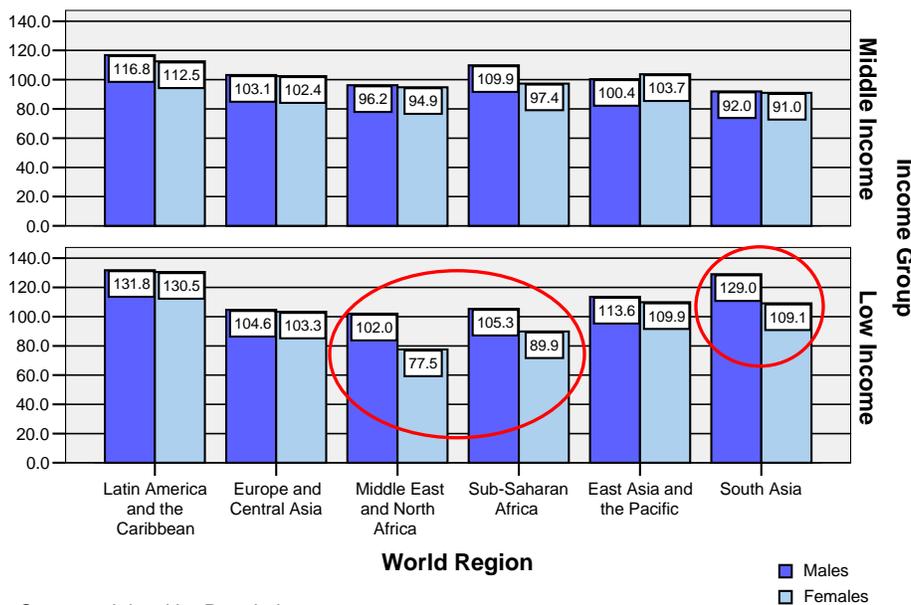
Cases weighted by Population

Comments and Limitations: Reliable estimates of net intake require accurate estimates of new entrants by age. This indicator can be distorted by an incorrect distinction between new entrants and repeaters in the first grade, which often occurs for under-age pupils who find it necessary to repeat the first grade at a more mature age. Finally, under-reporting of new entrant levels may occur when ministries fail to include all schools in the country.

Reliable estimates of the net intake rate also require reliable estimates of the eligible population of primary school entrance age. Issues related to the reliability of population estimates are discussed under the heading Population Estimates Used in Education Statistics.

NET INTAKE RATE

Definition: Net intake rate is the number of new entrants in the first grade of primary education who are of the official primary school entrance age, expressed as a percentage of the population of the same age.

Purpose: The net intake rate shows the level of access to primary education of the eligible population of primary school entrance age. Low net intake rates may be either the result of low overall participation in the education system or an indication of a tendency for children to start at a late age in a particular country.

Method of Computation: Divide the number of children of official primary school entrance age who enter the first grade for the first time by the population of the same age and multiply the result by 100. For example, in Uganda, where first grade has an official entry age of six years old, the net intake rate is calculated as total enrollment of six year olds in first grade divided by the total population of six year olds.

Data Sources and Periodicity: New entry data are recorded regularly by ministries of education and are available on a yearly basis. Population censuses are usually conducted at 10-year intervals. During non-census years, population estimates may be updated annually with vital registers; projections are used, otherwise. Net intake rates may also be obtained from periodic sample surveys.

Data Trends: Net intake rates from UNESCO varied from 20 to nearly 100 percent. The variation was nearly as great in middle-income countries as in low-income countries, as shown in the chart Net Intake Rates by Income Group, Minimum, Average and Maximum. Some of this variation may have been due to data quality issues. Obtaining reliable data on enrollment by age and single age population estimates can be problematic, as discussed under the heading Population Estimates Used in Education Statistics.

Low-income countries in the Middle East and North Africa and Sub-Saharan Africa showed very low average net intake rates, as shown in the chart Average Net Intake Rates by Income Group by Region, Both Sexes. In contrast, these regions had high apperent intake rates, suggesting that
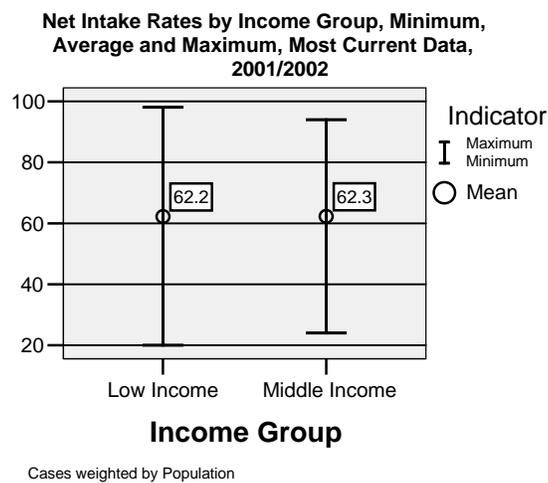
Net Intake Rates by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population
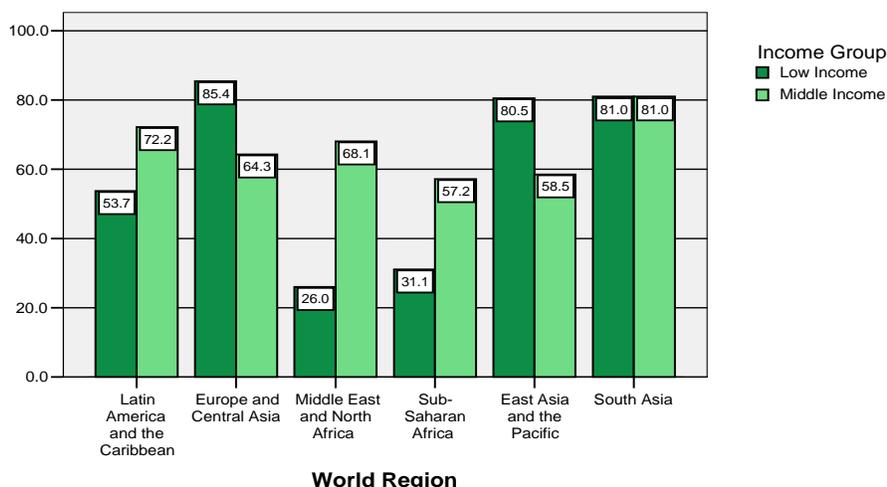
children tend to enroll late in these countries. Average net intake rates exceeded 80 percent in low-income countries in Europe and Central Asia, East Asia and the Pacific, and South Asia. In these regions, the net intake rate in the low-income countries exceeded that of the middle-income countries.

Average Net Intake Rates by Income Group by Region, Both Sexes, Most Current Data, 2001/2002

Cases weighted by Population

5

During the period from 1999 to 2002, the net intake rates increased at an average of one and two percentage points for low- and middle-income countries, respectively, as shown in the chart Annual Changes in Net Intake Rates by Income Group.

There was a tendency for the net intake rate to be lower for boys than girls in most regions and income levels, but the disparity, in contrast to gross enrollment rates, was quite small, as shown in the chart Average Net Intake Rates by Region and Income Group by Sex.

Annual Changes in Net Intake Rates by Income Group, 1999-2002 (in Percentage Points)

		Average Annual Change
Income Group	Low Income	+1.0
	Middle Income	+2.3

All statistics weighted by population

Average Net Intake Rates by Region and Income Group by Sex, Most Current Data, 2001/2002
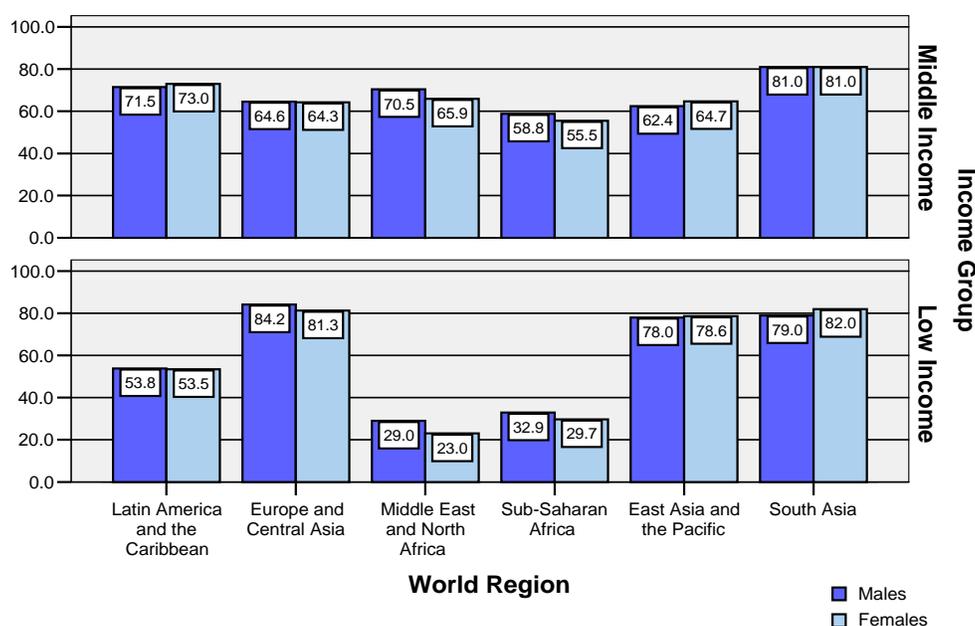
Cases weighted by Population

Comments and Limitations: Reliable estimates of net intake require accurate estimates of new entrants by age. Age-specific estimates of new entry can be over- or under-reported, either because ages are not known or because they were misreported by the parent or administrator. This indicator can also be distorted by an incorrect distinction between new entrants and repeaters in the first grade. This occurs especially often for under-aged pupils who repeat the first grade at the official entrance age. Under-reporting of new entrant levels may occur when ministries fail to include all schools in the country.

Reliable estimates of the net intake rate also require reliable estimates of the eligible population of primary school entrance age. Issues related to the reliability of population estimates are discussed under the heading Population Estimates Used in Education Statistics.

GROSS ENROLLMENT RATE

Definition: Gross enrollment rate is the total enrollment in primary school, regardless of age, in a given year, expressed as a percentage of the official school-age population for primary school.
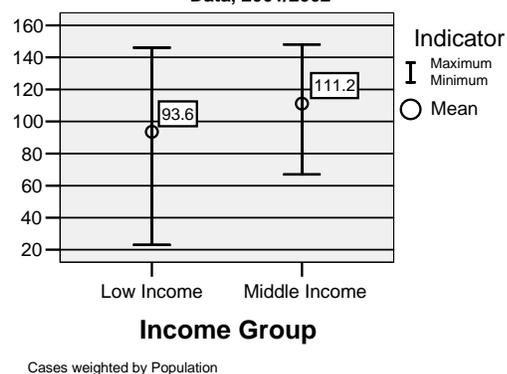
Purpose: The gross enrollment rate shows the general level of participation in formal schooling by the childhood population. A gross enrollment rate value of 100 percent indicates that a country is, in principle, able to accommodate all of its school-aged population.

Calculation Method: Divide the number of pupils enrolled in a primary school, regardless of age, by the official school-age population for that level and multiply the result by 100. For example, in Uganda, primary school consists of grades one through seven with an official starting age of six years old. Gross enrollment rate is calculated as total enrollment in grade one through grade seven, divided by the total population of six to 12 year olds.

Data Sources and Periodicity: Enrollment data are recorded regularly by ministries of education and are available on a yearly basis. Population censuses are usually conducted at 10-year intervals. Household surveys such as the Demographic and Health Survey and its EdData component and the Multiple Indicator Cluster Survey may be used to estimate net and gross attendance ratios. These surveys obtain information about whether the children in the household regularly attend school. The Demographic and Health Survey and other sample surveys are generally conducted at three- to five-year intervals.

Data Trends: Primary gross enrollment rates ranged from 23 to 146 percent, as shown in the chart Primary Gross Enrollment Rates by Income Group, Minimum, Average and Maximum. Very high gross enrollment rates usually occur when a substantial barrier to entry, such as cost, is eliminated, resulting in a large proportion of children entering school at a late age or returning to school after having dropped out; or there are large errors in the population estimates of school-age children. As with most education statistics, there was greater gross enrollment rate variability in low-income countries than in middle-income countries.

Primary Gross Enrollment Rates by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population

Average Primary Gross Enrollment Rates by Income Group by Region, Both Sexes, Most Current Data, 2001/2002

Cases weighted by Population
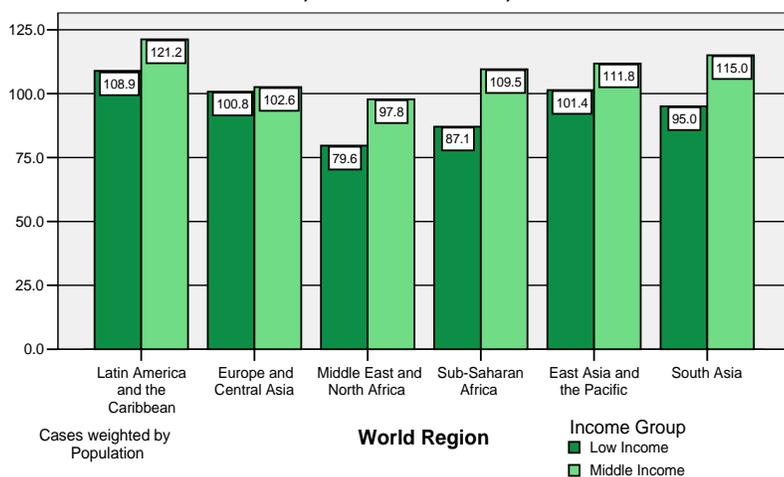
Gross enrollment rates for primary education were well in excess of 100 percent in all middle-income countries except in North Africa and the Middle East. Average gross enrollment rates in low-income countries were lower in all regions compared to middle-income countries, as shown in the chart Average Primary Gross Enrollment Rates by Income Rate by Region, Both Sexes. It should be noted that the averages masked very large variations in these rates from country to country.

The annual change in gross enrollment rate between 1999 and 2002 was very low, averaging 1.5 percentage points in low-income countries and 0.3 percentage points in middle-income countries, as shown in the chart Annual Changes in Primary Enrollment Rates by Income Group.

		Average Annual Change
Income Group	Low-Income	1.5
	Middle-Income	0.3

All statistics weighted by population

Gross enrollment rates in primary education were higher in all regions for boys than for girls. This disparity was particularly acute in low-income countries in the Middle East and North Africa, Sub-Saharan Africa, and South Asia, as shown by the chart Average Primary Gross Enrollment Rates by Region by Sex.

Average Primary Gross Enrollment Rates by Region by Sex, Most Current Data, 2001/2002
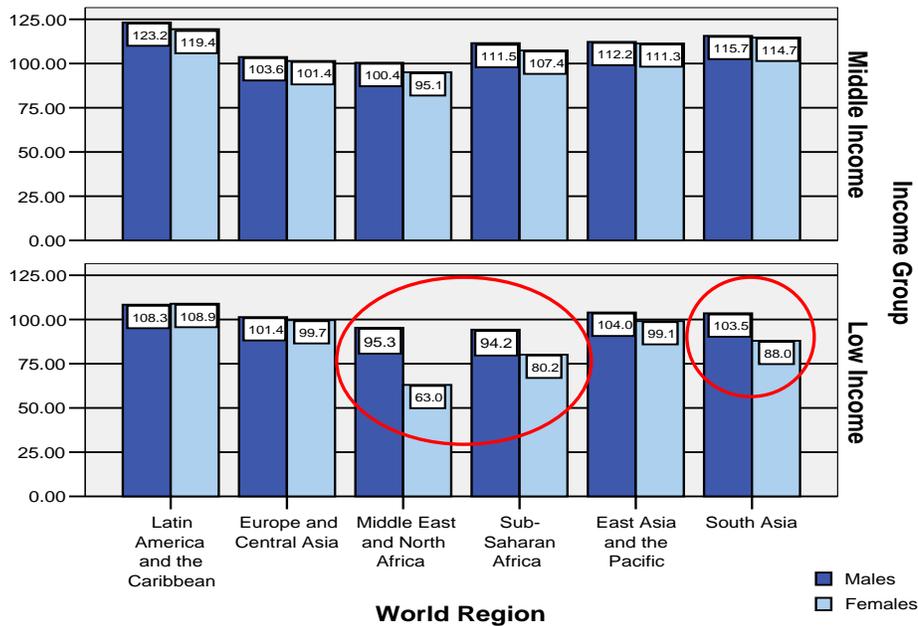
Cases weighted by Population

Comments and Limitations: Reliable estimates of gross enrollment rate require reliable estimates of gross enrollment and school-age population. Errors occur when enrollment levels are under- or over-reported. Over-reporting of enrollment levels may occur if administrators have a financial incentive to do so. Under-reporting of enrollment may occur when ministries fail to include all schools in the country, particularly private schools.

Reliable estimates of gross enrollment rate also require reliable estimates of the school-age population. Issues relating to the reliability of population estimates are discussed under Population Estimates Used in Education Statistics.
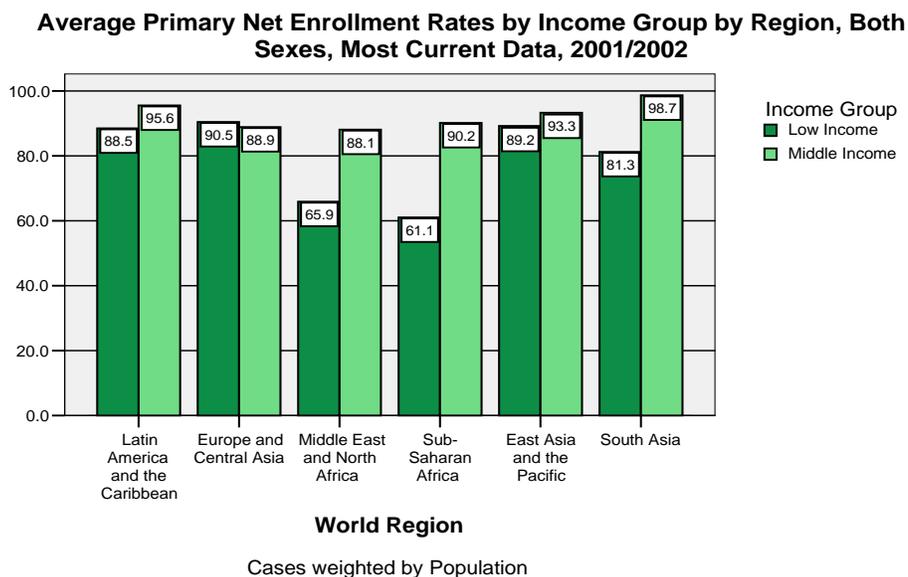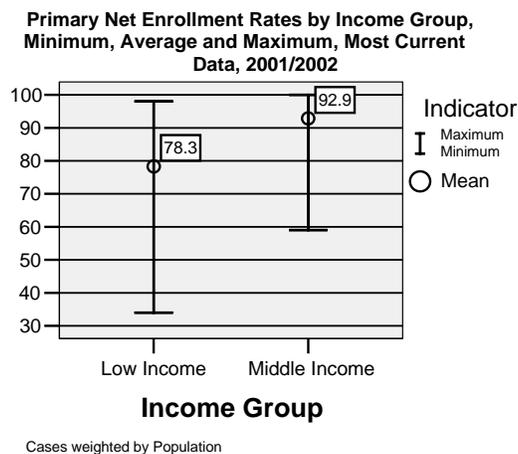
NET ENROLLMENT RATE

Definition: The net primary enrollment rate is the ratio of official school-age children enrolled in primary school to the total population of children of official primary school age, as defined by the national education system.

Purpose: The net primary enrollment rate shows the proportion of children of primary school age who are enrolled in primary school. Net enrollment refers only to children of official school age, while gross enrollment includes children of any age. Net primary enrollment rates below 100 percent provide a measure of school-age children who are not enrolled at the primary level. This difference does not necessarily indicate the percentage of students who are not enrolled, since some children might be enrolled at other levels of education.

Method of Computation: Divide the number of pupils of official age by the total population for the same age group and multiply the result by 100. For example, in Uganda, primary school consists of grades one through seven with an official starting age of six years old. Net enrollment rate is calculated as total enrollment in grade one through grade seven of pupils between the ages of six and 12, divided by the total population of six to 12 year olds.

Data Sources and Periodicity: Enrollment data are recorded regularly by ministries of education and are available on a yearly basis. Population censuses are usually conducted at 10-year intervals. During non-census years, population estimates may be updated annually with vital registers; projections are otherwise used. Household surveys such as the Demographic Health Survey and its EdData component and the Multiple Indicator Cluster Survey may be used to estimate net and gross attendance ratios. These surveys obtain information about regular school attendance by household. Surveys are generally conducted at three- to five-year intervals.

Data Trends: Net enrollment rates vary widely in low-income countries and not inconsiderably in middle-income countries, as shown in the chart Primary Net Enrollment Rates by Income Group, Minimum, Average and Maximum. Average rates range between 80 and 100 percent for most regions and income levels, except low-income counties in the Middle East and North Africa and Sub-Saharan Africa. Net enrollment rates were higher in all regions for middle-income countries compared to low-income countries, with the exception of in Europe and Central Asia, as shown in the chart Average Primary Net Enrollment Rates by Income Group by Region, Both Sexes.

Primary Net Enrollment Rates by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population

Average Primary Net Enrollment Rates by Income Group by Region, Both Sexes, Most Current Data, 2001/2002

Cases weighted by Population

9

Annual Changes in Primary Net Enrollment Rates by Income Group, 1999-2002 (in Percentage Points)

|		Average Annual Change
Income Group	Low Income	.8
	Middle Income	1.0

All statistics weighted by population

Net enrollment rates increase about one percentage point annually for low- and middle-income countries over the period between 1999 and 2002, as shown in the chart Annual Changes in Primary Net Enrollment Rates by Income Group.

Net enrollment rates for girls were within a few percentage points of those for boys in nearly all regions of the world. Gender disparity is notably higher for boys than girls in the Middle East and North Africa, Sub-Saharan Africa, and South Asia, as shown in the chart Average Net Intake Rates by Region and Income Group by Sex.

Average Primary Net Enrollment Rates by Region and Income Group by Sex, Most Current Data, 2001/2002
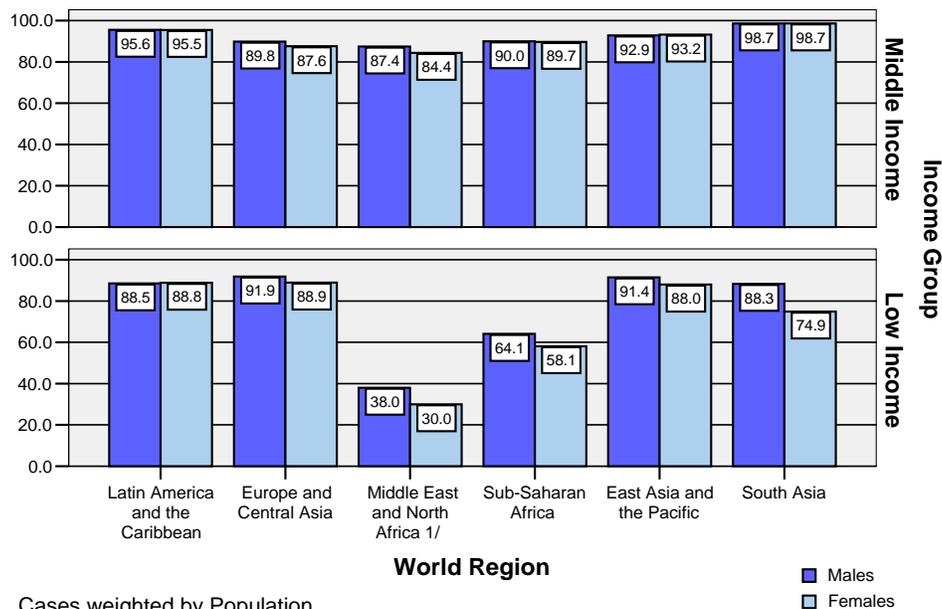
Cases weighted by Population

1/ Data disaggregated by sex provided for one country only

Comments and Limitations: Reliable estimates of net enrollment require accurate estimates of enrollment levels by age. Errors occur when enrollment levels are under- or over-reported. Over-reporting of enrollment levels may occur if administrators have a financial incentive to do so. Under-reporting of enrollment may occur when ministries fail to include all schools in the country, particularly private schools. Age-specific enrollment estimates can be over- or under-reported when ages are not known.

Reliable estimates of the net enrollment rate also require reliable estimates of the school-age population. Issues relating to the reliability of population estimates are discussed under the heading Population Estimates used in Education Statistics.

Household surveys collect information about school attendance. To the extent that children may be registered for school but do not regularly attend, net attendance rates are likely lower than net enrollment rates.

GENDER PARITY RATIOS AND INDEXES

Definition: A gender parity ratio is the ratio of the number of girls to boys. A gender parity index is the ratio of a rate for girls to the same rate for boys. For example, total girls enrollment divided by total boys enrollment is a gender parity ratio; the gross enrollment rate for boys divided by the gross enrollment rate for girls is a gender parity index.

Purpose: The gender parity index on net enrollment measures equity of participation in education.

Method of Computation: For a given indicator such as enrollment, compute the ratio of the total number of girls enrolled to the total number of boys enrolled at the primary school level, or compute the ratio of girls' gross or net enrollment rate to boys gross or net enrollment rate.

Data Sources and Periodicity: See the section on the given indicator for discussion of data sources using these indicators in the ratio.

Data Trends: Gender parity indexes for net primary enrollment rates varied from 67 to 108 percent. There was greater variation in this index for low-income countries compared to the index for middle-income countries but this variation was not as great as in other indicators. These ranges are shown in the chart Gender Parity Index, Primary Net Enrollment Rate, by Income Group, Minimum, Average and Maximum.

The gender parity index for primary net enrollment was within four percentage points of one in all regions except low-income countries in the Middle East and North Africa, Sub-Saharan Africa, and South Asia, as shown in the chart Average Gender Parity Index, Primary Net Enrollment Rate, by Income Group by Region.

Gender Parity Index, Primary Net Enrollment Rate, by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population

Average Gender Parity Index, Primary Net Enrollment Rate, by Income Group by Region, Most Current Data, 2001/2002

Cases weighted by Population
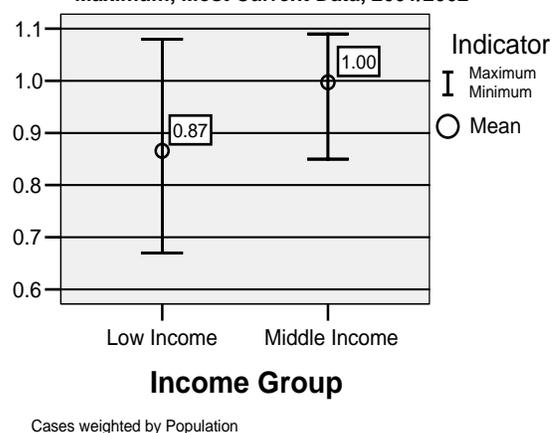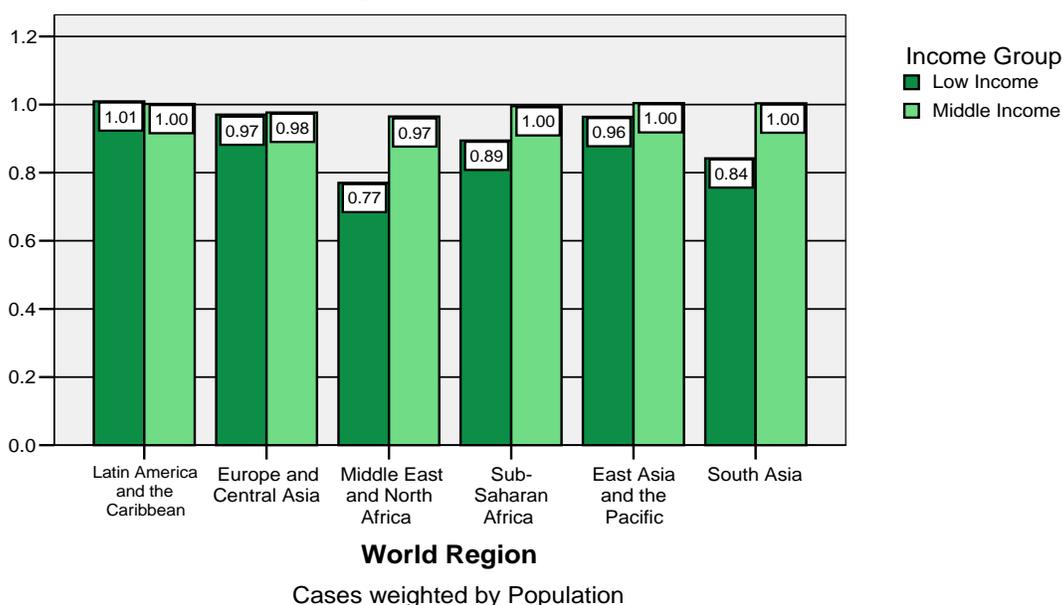
Average annual changes in the gender parity index for net enrollment were negligible, as shown in the chart Annual Changes in Level, Gender Parity Index, Primary Net Enrollment Rate, by Income Group.

Annual Changes in Level, Gender Parity Index, Primary Net Enrollment Rate, by Income Group, 1999-2002

		Average Annual Changes
Income Group	Low Income	.01
	Middle Income	.00

All statistics weighted by population

Comments and Limitations: The ratio calculated from the absolute number—and not relative to the population—reflects the gender structure of the school-age population. The indicator does not adequately reflect when the gender ratio in the school-age population deviates significantly from one. This phenomenon happens in countries where boys outnumber girls at young ages. Ratio based on rate is a better measure for this indicator because it takes the country's population structure into account.

PERCENTAGE DISTRIBUTION OF PUBLIC CURRENT EXPENDITURE ON EDUCATION BY LEVEL

Definition: The percentage distribution of public current expenditure on education by level is the public current expenditure on primary level education, expressed as a percentage of total public current expenditure on education.

Purpose: This indicator measures the relative emphasis of government spending on primary education within overall educational expenditure. A relatively high percentage of current expenditures devoted to primary education denotes high priority in national education policy and resource allocation. When interpreting this indicator, it is often useful to take into account the corresponding distribution of enrollment by level and then assess the relative current expenditure per student.

Method of Computation: Divide public current expenditure devoted to primary education by the total public current expenditure on education and multiply the result by 100.

Data Sources and Periodicity: Annual ministry of finance financial reports, central statistics office national accounts reports, and financial reports from government departments engaged in educational activities, especially the ministry of education, are sources. Fiscal data are recorded regularly by ministries of finance and education and the central statistical office.

Data Trends: Less than half of the middle- and low- income countries on UNESCO's website provided data for this indicator. Therefore, caution should be used in making any generalizations. Where data were available, there appeared to be considerable variability in the share of expenditures to primary education, with ranges from less than 20 percent to over 75 percent, as shown in the chart Educational Expenditures to Primary as Percent of Total Educational Expenditures by Income Group, Minimum, Average and Maximum. Where the comparison between middle-and low-income countries was possible, these data also show that low-income countries devote a larger share of their expenditures on primary education than middle-income countries, as shown in the chart Average

Educational Expenditures to Primary as Percent of Total Educational Expenditures by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Educational Expenditures to Primary as Percent of Total Educational Expenditures by Income Group by Region. This result is not surprising, considering the age structure of these countries and the gross enrollment rates in primary and secondary school. Expenditures on primary education as a percent of total expenditures showed a very slight increase over the period 1999 to 2002, averaging about one half of a percentage point, as shown in the chart Annual Changes in Educational Expenditures to Primary as Percent of Total Educational Expenditures by Income Group.
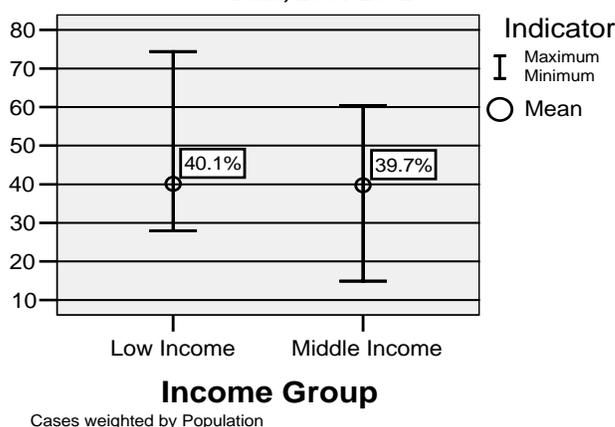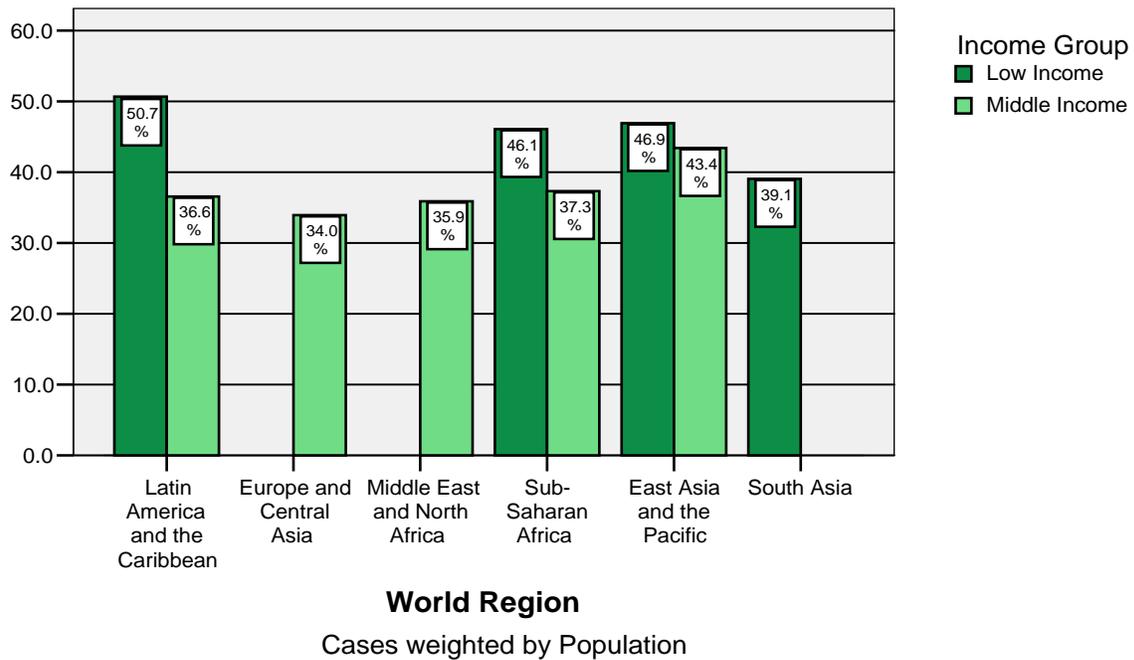
Annual Changes in Educational Expenditures to Primary as Percent of Total Educational Expenditures by Income Group, 1999-2002 (in Percentage Points)

		Average Annual Change
Income Group	Low Income	+0 .5
	Middle Income	+0 .7

All statistics weighted by population

Average Educational Expenditures to Primary as Percent of Total Educational Expenditures by Income Group by Region, Most Current Data, 2001/2002

Income Group
- Low Income
- Middle Income

Latin America and the Caribbean: 50.7%, 36.6%
Europe and Central Asia: 34.0%
Middle East and North Africa: 35.9%
Sub-Saharan Africa: 46.1%, 37.3%
East Asia and the Pacific: 46.9%, 43.4%
South Asia: 39.1%

World Region

Cases weighted by Population

Comments and Limitations: This indicator should be based on consistent and current expenditure data for each level of education that covers public funding for both public and private educational institutions. The sum of the percentage distributions for all levels of education should add up to 100 percent.

In some instances, data on current public expenditure on education refers only to the ministry of education, excluding other ministries that spend a part of their budget on educational activities.

PUBLIC EXPENDITURE ON EDUCATION AS PERCENTAGE OF TOTAL GOVERNMENT EXPENDITURE

Definition: Public expenditure on education as percentage of total government expenditure is total current and capital public expenditure on education expressed as a percentage of total government expenditure in a given financial year.
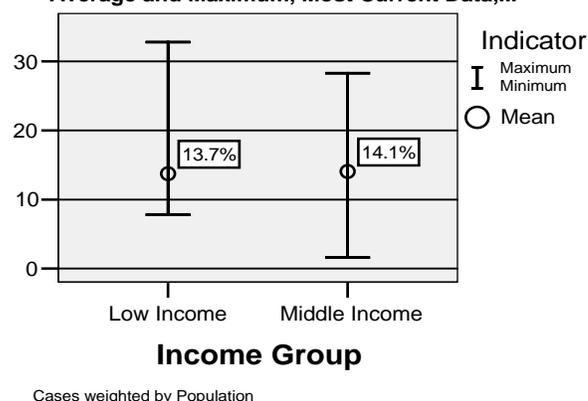
Purpose: The share of total public expenditure devoted to education allows assessment of the government's policy emphasis on education relative to the perceived value of other public investments. It also reflects the government's commitment to human capital development investment. A higher percentage of government expenditure on education shows a high government policy priority for education relative to the perceived value of other public investments, including defense and security, health care, social security for unemployment and the elderly, and other social or economic sectors.

Method of Computation: Divide total public expenditure on education incurred by all government agencies and departments in a given financial year by the total government expenditure for the same financial year and multiply by 100.

Data Sources and Periodicity: Annual ministry of finance financial reports, central statistics office national accounts reports, and financial reports from government departments engaged in educational activities, especially the ministry of education, are sources. Fiscal data are recorded regularly by ministries of finance and education and the central statistical office.

Data Trends: Less than half of the middle- and low-income countries on UNESCO's website provided data for this indicator. Therefore, caution should be exercised in making any generalizations. These data show that there was a considerable range in the share of public expenditures on education relative to all public expenditures, from less than 2 percent to over 30 percent. On average, however, this share ranged from roughly 12 to 19 percent, as shown in the chart Public Expenditure on Education as Share of Total Expenditures by Income Group, Minimum, Average and Maximum. One middle-income country in the Middle East and North Africa devoted over 32 percent of its total public expenditures to education. Middle-

Public Expenditure on Education as Share of Total Expenditures by Income Group, Minimum, Average and Maximum, Most Current Data,...

Cases weighted by Population

income countries in Sub-Saharan Africa that reported such data devoted a notably small share to education with an average share of 8.7 percent, as shown in the chart Average Public Expenditure on Education as Share of Total Expenditures by Income Group by Region.

Average annual changes in the percent of total expenditures spent on education showed small movements averaging a half percentage point or less increase per year, as shown in the chart Annual Changes in Public Expenditure on Education as Share of Total Expenditures by Income Group.

Annual Changes in Public Expenditure on Education as Share of Total Expenditures by Income Group, 1999-2002 (in Percentage Points)
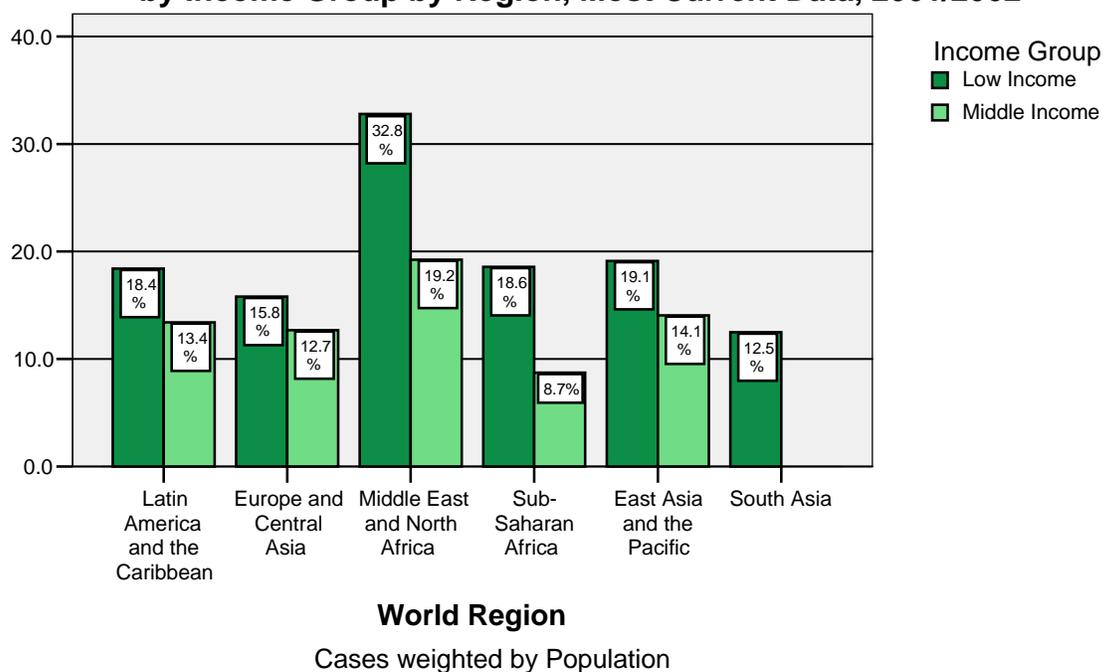
		Average Annual Changes
Income Group	Low Income	+ 0.5
	Middle Income	+ 0.1

All statistics weighted by population

Average Public Expenditure on Education as Share of Total Expenditures by Income Group by Region, Most Current Data, 2001/2002

Income Group
- ■ Low Income
- ■ Middle Income

World Region	Low Income	Middle Income
Latin America and the Caribbean	18.4%	13.4%
Europe and Central Asia	15.8%	12.7%
Middle East and North Africa	32.8%	19.2%
Sub-Saharan Africa	18.6%	8.7%
East Asia and the Pacific	19.1%	14.1%
South Asia	12.5%	

World Region

Cases weighted by Population

Comments and Limitations: Total public expenditure on education should include those incurred by all concerned ministries and levels of administration. Public expenditure on education as a percentage of government expenditure can never total 100 percent because the latter includes expenditure on many economic and social sectors besides education. The fact that the fiscal year and educational year budget periods may be different should also be taken into consideration.

In some instances, data on total public expenditure on education refer only to the ministry of education, excluding other ministries that spend a part of their budget on educational activities.

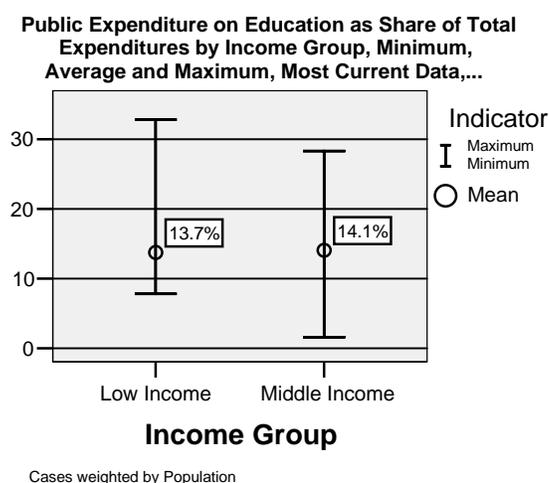# PUBLIC EXPENDITURE ON EDUCATION AS PERCENTAGE OF GROSS NATIONAL PRODUCT

Definition: Public expenditure on education as percentage of gross national product is the total current and capital public expenditure on education expressed as a percentage of the gross national product in a given financial year.

Purpose: This indicator shows the proportion of a country's wealth generated during a given financial year and spent by government authorities on education. In principle, a high percentage of gross national product devoted to public expenditure on education denotes a high proportion of government attention paid to educational investment.

Method of Computation: Divide total public expenditure on education in a given financial year by the country's gross national product for the corresponding year and multiply by 100.

Data Sources and Periodicity: Fiscal data and data on gross national product are recorded regularly on an annual basis by ministries of finance and bureaus of statistics.

Data Trends: Less than half of the world's middle- and low-income countries provided this indicator on UNESCO's website. Such data showed that public expenditure on education as a percent of gross national product varied from approximately 1 percent to 10 percent, as shown in the chart Public Expenditure on Education as Share of Total Expenditures by Income Group, Minimum, Average and Maximum. In most regions and income levels, public expenditures on education relative to gross national product ranged from roughly 3 percent to 6 percent, as shown in the chart Average Public Expenditure on Education as Percent of

Public Expenditure on Education as Share of Total Expenditures by Income Group, Minimum, Average and Maximum, Most Current Data,...

Cases weighted by Population

GNP by Income Group by Region. Public educational expenditure as a percentage of gross national product showed almost no annual movement over the four year period covered in this report, with an average change of two-tenths of a percent or less, as shown in the chart Annual Changes in Public Expenditure on Education as Percent of GNP by Income Group.
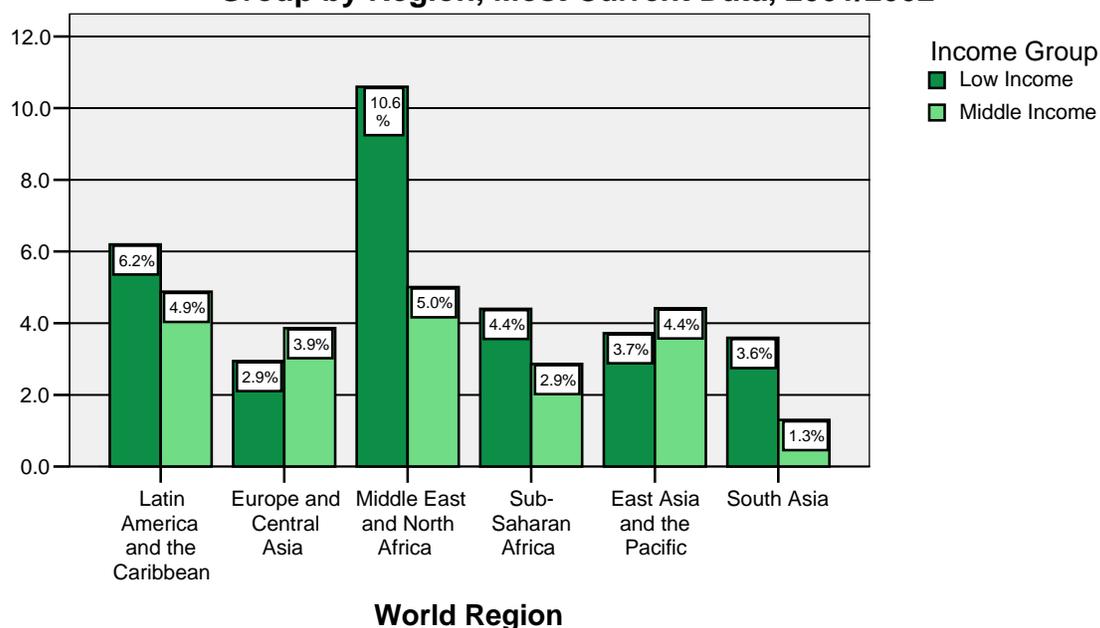
Annual Changes in Public Expenditure on Education as Percent of GNP by Income Group, 1999-2002 (in Percentage Points)

		Average Annual Changes
Income Group	Low Income	+ 0.1
	Middle Income	- 0.2

All statistics weighted by population

Average Public Expenditure on Education as Percent of GNP by Income Group by Region, Most Current Data, 2001/2002

Income Group
- ■ Low Income
- ■ Middle Income

	Latin America and the Caribbean	Europe and Central Asia	Middle East and North Africa	Sub-Saharan Africa	East Asia and the Pacific	South Asia
Low Income	6.2%	2.9%	10.6%	4.4%	3.7%	3.6%
Middle Income	4.9%	3.9%	5.0%	2.9%	4.4%	1.3%

World Region

Cases weighted by Population

Comments and Limitations: Total public expenditure on education should include those incurred by all concerned ministries and levels of administration. Total public expenditure on education refers to all expenditure on education by the central or federal government, state governments, and provincial or regional administrations, as well as expenditure by municipal and other local authorities. Central government includes ministerial departments, agencies, and autonomous institutions that have education responsibilities. The statistics on expenditure should cover transactions made by all departments or services with education responsibility at all decision-making levels.

In some instances, data on total public expenditure on education refer only to the ministry of education, excluding other ministries that spend a part of their budget on educational activities.

PUPIL-TEACHER RATIO

Definition: The pupil-teacher ratio is the measure of average number of pupils per teacher at the primary school level in a given school year. Teachers are defined as persons whose professional activity involves the transmission of knowledge, attitudes, and skills that are stipulated in a formal curriculum program to students enrolled in a formal educational institution.

Purpose: This indicator is used to measure the human resource input in terms of number of teachers relative to the size of the pupil population. A high pupil-teacher ratio means that each teacher is responsible for a large number of pupils. In other words, the higher the pupil-teacher ratio, the lower pupils' relative access to teachers. It is generally assumed that a low pupil-teacher ratio signifies smaller classes, which enable the teacher to pay more attention to individual students, likely resulting in better pupil performance over the long run.

Method of Computation: Divide the total number of pupils enrolled at the specified education level by the number of teachers at the same level.

Data Sources and Periodicity: Teacher data can come from a number of official sources, including school surveys, payroll, and personnel records. Enrollment data are collected and recorded regularly by ministries of education and are available on a yearly basis.

Data Trends: Pupil-teacher ratios provided by UNESCO varied hugely at the primary level, ranging from less than 10 to over 70 pupils per teacher, as shown in the chart Primary Pupil Teacher Ratio by Income Group, Minimum, Average and Maximum.

The ratio was sharply lower in middle-income countries than in low-income countries in each of the regions, as shown in the chart Average Primary Pupil Teacher Ratio by Income Group by Region.

Primary Pupil Teacher Ratio by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Average Primary Pupil Teacher Ratio by Income Group by Region, Most Current Data, 2001/2002

Cases weighted by Population

19
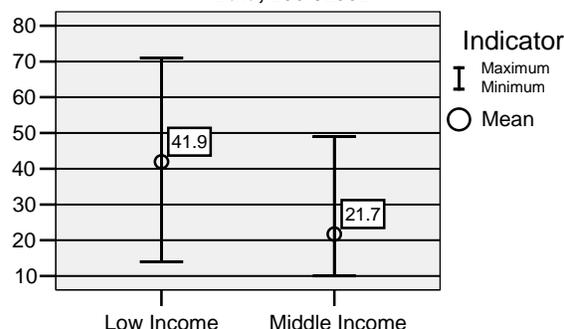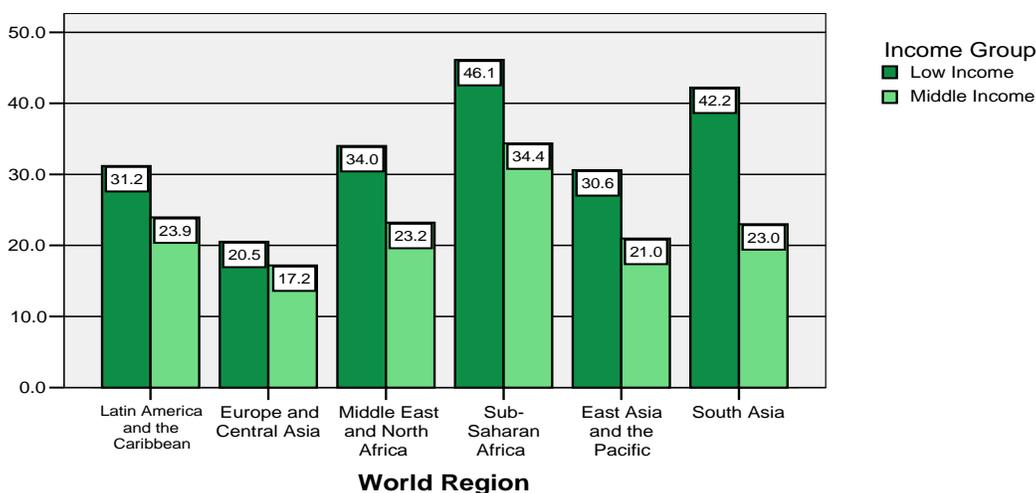
During the period between 1999 and 2002, annual changes in the pupil-teacher ratio were negligible—on average, less than one pupil per teacher, as shown in the chart Annual Changes in Level, Primary Pupil-Teacher Ratio by Income Group.

Annual Changes in Level, Primary Pupil Teacher Ratio by Income Group, 1999-2002

		Average Annual Changes
Income Group	Low Income	+ .71
	Middle Income	- .13

All statistics weighted by population

Comments and Limitations: In computing and interpreting this indicator, the existence of part-time teaching, school-shifts, multi-grade classes, and other practices that may affect the precision and meaningfulness of pupil-teacher ratios should be taken into account. If feasible, the number of part-time teachers should be classified as the total for full-time equivalent teachers, a double-shift teacher should be counted twice, and so on—all teaching staff should be counted according to their capacity.

This indicator does not take into account factors that potentially affect the quality of teaching or learning, including qualifications, pedagogical training, experience and status, teaching methods, teaching materials, and variations in classroom conditions.
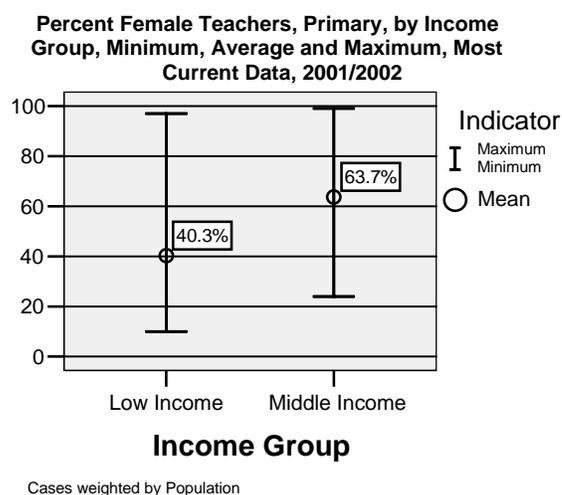
PERCENTAGE OF FEMALE TEACHERS

Definition: The percentage of female teachers is the number of female teachers at the primary school level expressed as a percentage of the total number of teachers, both male and female, at the same level in a given school year. Teachers are defined as persons whose professional activity involves the transmission of knowledge, attitudes, and skills that are stipulated in a formal curriculum program to students enrolled in a formal educational institution.

Purpose: This indicator shows the gender composition of the teaching force. A percentage of female teachers approaching 50 percent indicates gender parity in the composition of the teaching force. A value of greater than 50 percent reveals more opportunities and/or preference for women to participate in teaching activities at a specific level, grade, or program of education.

Data Sources and Periodicity: School censuses or surveys, teachers' records, and payroll are recorded regularly by ministries of education and are available on a yearly basis.

Method of Computation: Divide the total number of female teachers at the primary school level of education by the total number of teachers, both male and female, at the same level in a given school year and multiply by 100.

Data Trends: The share of female teachers spanned nearly the entire range of possibilities, ranging from 10 to 97 percent for low-income countries and from roughly 25 to 100 percent for middle-income countries, as shown in the chart Percent Female Teachers, Primary, by Income Group, Minimum, Average and Maximum. The percentage of female teachers averaged between 30 and 40 percent in low-income countries in the North Africa and the Middle East, Sub-Saharan Africa, and South Asia. Conversely, in many regions of the world, the percent of female teachers was 70 percent or higher, including in Latin America and the Caribbean, Europe, low-income countries in East

Percent Female Teachers, Primary, by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population

Asia, and high-income countries in Sub-Saharan Africa, as shown in the chart Average Percent Female Teachers, Primary, by Income Group by Region. Average annual changes in the share of female teachers from 1999 to 2002 was negligible, as shown in the chart Annual Changes in Percent Female Teachers, Primary, by Income Group.
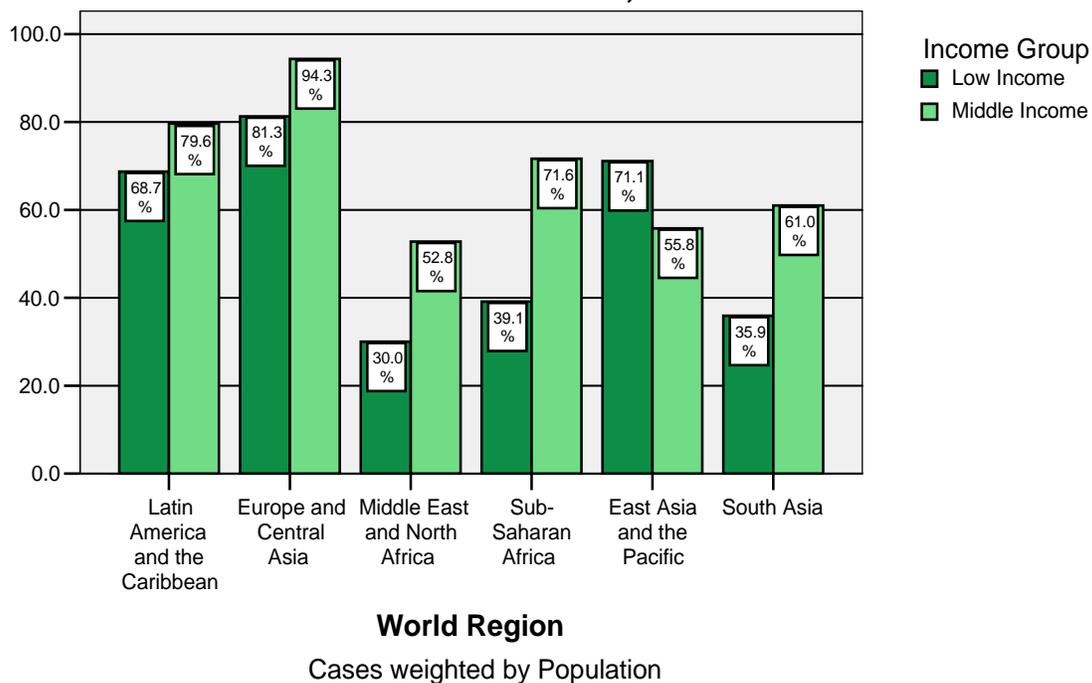
Annual Changes in Percent Female Teachers, Primary, by Income Group, 1999-2002 (in Percentage Points)

		Average Annual Changes
Income Group	Low Income	1.2
	Middle Income	.0

All statistics weighted by population

Average Percent Female Teachers, Primary, by Income Group by Region, Most Current Data, 2001/2002

World Region

Cases weighted by Population

Comments and Limitations: This indicator should be based on reliable data on full- and part-time teaching staff by gender at each level of education. When calculating this indicator, care should be exercised to ensure that the number of female teachers and the total number of teachers correspond to the same type of institution, full or part-time.

REPETITION RATE

Definition: Repetition rate is the proportion of pupils from a cohort enrolled in a given grade who are enrolled in the same grade in the following school year.
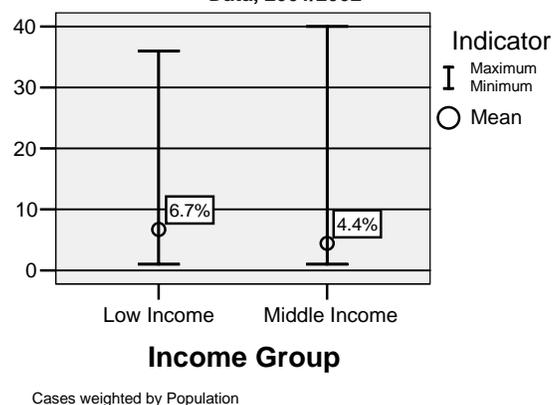
Purpose: The repetition rate serves a number of purposes. It is commonly used as a measure of the internal efficiency of educational systems. Repetition rates ideally should approach zero percent—a high repetition rate reveals problems in the internal efficiency. In addition, it is one of the key indicators for analyzing and projecting pupil flows from grade to grade within the educational cycle. When compared across grades, the patterns can indicate specific grades for which there is higher repetition, hence requiring more in depth study of causes and possible remedies. Finally, increasing repetition rates serve as an early warning that the system is experiencing major capacity constraints.

Method of Computation: Divide the number of repeaters in a given grade in a given school year by the total number of pupils enrolled in that grade the previous school year. For example, the repetition rate for second grade in 2003 is the number of students repeating second grade in 2003 divided by the total second grade enrollment in 2002.

Data Sources and Periodicity: Enrollment and repetition data are recorded regularly by ministries of education and are available on a yearly basis.

Data Trends: UNESCO does not provide primary repetition rates. Rather, UNESCO reports the percentage of repeaters, which is the ratio of the number of repeaters in the *current* year to the number enrolled in the *current* year. To the extent that gross enrollment is increasing over time, which is generally the case in countries with high population growth rates, the percentage of repeaters is usually less than the repetition rate. However, patterns and changes in levels of repetition rate and percentage of repeaters across countries are likely similar. With these caveats in mind, the percentages of repeaters by region, income group, and sex are shown here.

Percentage of Repeaters by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population

Average Percentage of Repeaters by Income Group by Region, Both Sexes, Most Current Data, 2001/2002

Cases weighted by Population
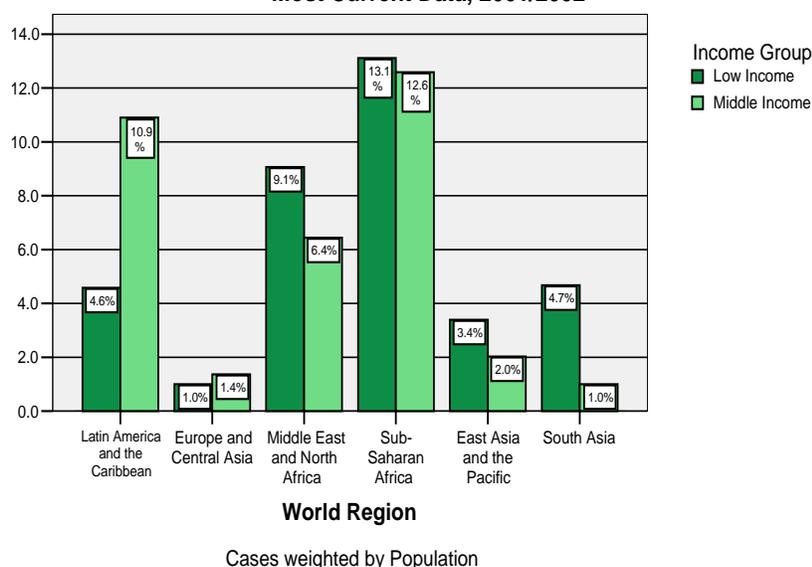
Percentage of repeaters varied considerably in both low- and middle-income countries, with ranges of 1 to 40 percent, as shown in the chart Percentage of Repeaters by Income Group, Minimum, Average and Maximum.

Average rates tended to be very low in Europe and Central Asia, East Asia and the Pacific, and South Asia. They were markedly high in Sub-Saharan Africa, in the low- and middle-income countries of the Middle East

23

and North Africa, and in middle-income countries of Latin America and the Caribbean, as shown in the chart Average Percentage of Repeaters by Income Group by Region.

On average, the percentage of repeaters declined very slightly from 1999 to 2002 in both low-and middle-income countries, as shown in the chart Annual Changes in Percentage of Repeaters by Income Group.

Annual Changes in Percentage of Repeaters by Income Group, 1999-2002 (in Percentage Points)

		Average Annual Change
Income Group	Low Income	-.4
	Middle Income	-.1

The percentage of repeaters was consistently lower for girls than for boys in all regions, as shown in the chart Average Percentage of Repeaters by Region by Sex.

Average Percentage of Repeaters by Region by Sex, Most Current Data, 2001/2002

Cases weighted by Population
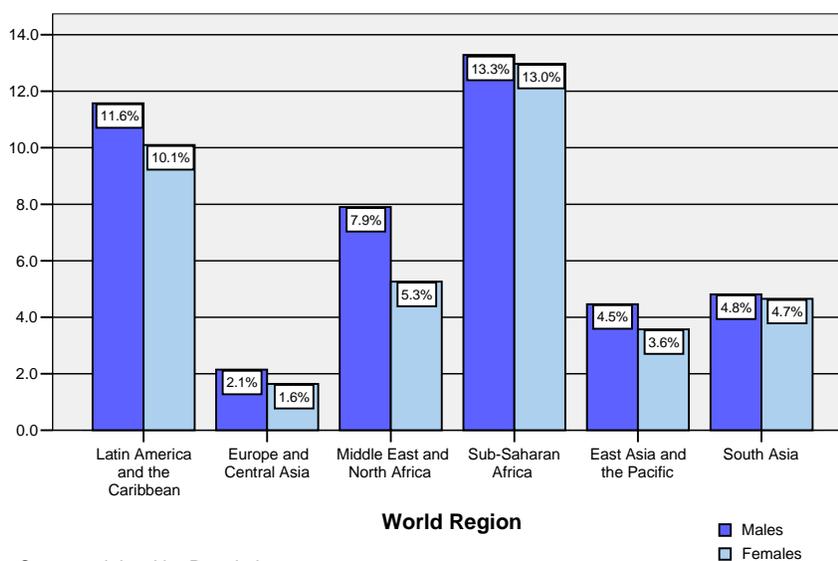
Comments and Limitations: Like other pupil flow rates (e.g., promotion, drop-out), the repetition rate is derived by analyzing data on enrollment and repeaters by grade for two consecutive years. Data coverage should therefore be consistent over time and across grades.

Educational authorities can, in some cases, determine the level and maximum number of grade repetitions allowed, with the aims of coping with limited grade capacity and increasing internal efficiency and student flow. Therefore, indicator comparisons across educational systems should be interpreted carefully.

SURVIVAL RATE BY GRADE

Definition: The survival rate is the percentage of a cohort of pupils enrolled in first grade of primary school in a given school year who are expected to reach a successive grade, typically fourth or fifth.

Purpose: The indicator measures an education system's success in retaining students from one grade to the next, as well as its internal efficiency. Survival rate to fifth grade of primary education is of particular interest because it is commonly considered as prerequisite for sustainable literacy. Improvements in this indicator are interpreted as improvements in quality. However, this indicator does not address access issues. Countries with low enrollment rates may have high survival rates. If the goal is to increase access to quality education, this indicator should be used in conjunction with indicators of intake or enrollment rate.

Method of Computation: This indicator is typically estimated based on enrollment and repetition by grade for two consecutive years, using a procedure called the reconstructed cohort method. A cohort's flow is constructed beginning in year one and assuming the existing pattern of repetition and enrollment by grade will carry forward. The survival rate to a particular grade is the percentage of the cohort that reaches the specified grade. When estimated from household survey data, the proportion is estimated as the product of the proportions of transition for each grade up to the given grade.

Data Sources and Periodicity: The reconstructed cohort method is calculated using school register or school survey, which is collected routinely by ministries of education are available annually. Household survey data obtained from the Multiple Indicator Cluster Survey or a Demographic and Health Survey/EdData Survey provide an alternative data source. Household surveys are conducted with less frequency, usually at intervals of about five years.

Data Trends: Very few data were provided on UNESCO's website for survival rates in 2002. Where data were available for the years 1999 to 2001, they were provided for less than half of the low- and middle-income countries. Therefore, caution should be used in making any generalizations. Survival rates ranged from roughly 30 to nearly 100 percent, as shown in the chart Survival Rates to Grade 5 by Income Group, Minimum, Average and Maximum.

The chart Average Survival Rate to Grade 5 by Income Group by Region, Both Sexes shows that average survival rates were lower in low-income countries compared to middle-income countries in each region, where the comparison was possible.
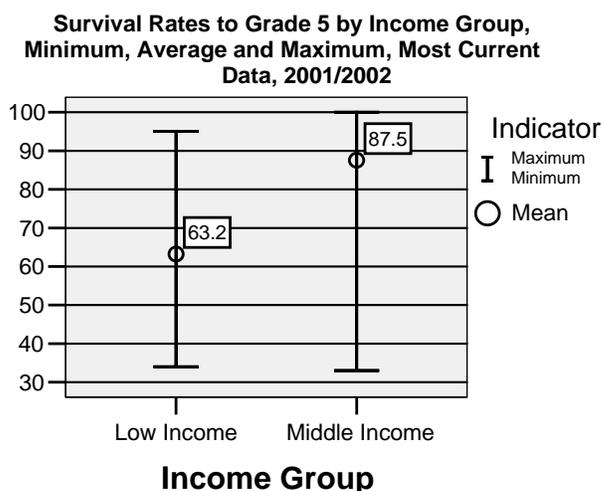
Survival Rates to Grade 5 by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Average Survival Rates to Grade 5 by Income Group by Region, Both Sexes, Most Current Data, 2001/2002

Cases weighted by Population
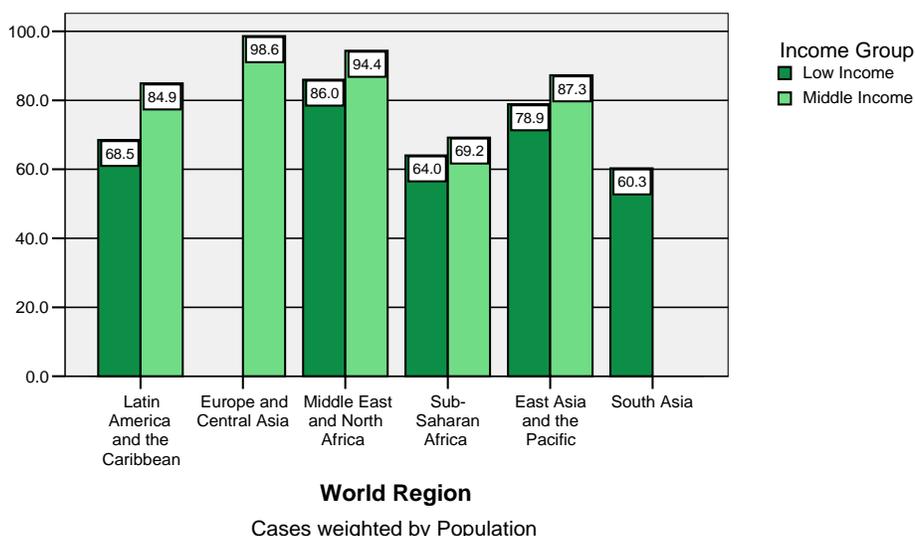
On average, survival rates did not change significantly across time. During the period from 1999 to 2001, survival rates increased one percentage point for low income countries, as shown in the chart Annual Changes in Survival Rates to Grade 5 by Income Group.

There was no apparent pattern or appreciable difference in survival rates for boys and girls, as shown in the chart Average Survival Rates to Grade 5 by Region by Sex.

Annual Changes in Survival Rates to Grade 5 by Income Group, 1999-2002 (in Percentage Points)

		Average Annual Change
Income Group	Low Income	+ 1.1
	Middle Income	- .2

All statistics weighted by population

Average Survival Rates to Grade 5 by Region by Sex, Most Current Data, 2001/2002

Cases weighted by Population
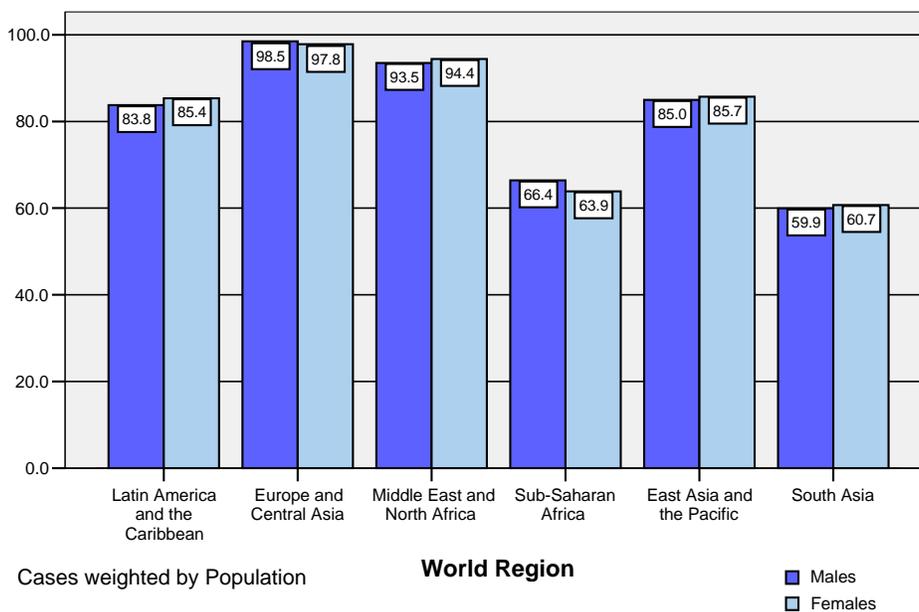
Comments and Limitations: Results of this indicator should be used carefully for comparisons, given that this indicator is usually estimated using cohort analysis models based on a number of assumptions.

COMPLETION RATE

Definition: The primary completion rate is the ratio of the total number of students successfully completing or graduating from the last year of primary school in a given year to the total number of children of official graduation age in the population.

Purpose: The indicator, which monitors education system coverage and student progression, is intended to monitor school system quality and measure human capital formation.

Method of Computation: Divide the number of pupils now graduating successfully by the total number of children of official graduation age in the population and multiply the result by 100. A proxy completion rate is calculated as the ratio of the difference between the total number of students enrolled in the final year of primary school and the number of students who repeat the grade in a typical year to the total number of children of official school age in the population for that grade, multiplied by 100. For example, in Uganda, primary school consists of grades one through seven with an official age of six to twelve. The completion rate using this second method was calculated by dividing the difference between total enrollment in grade seven and the average number of repeaters during the past two to three years by the total population of 12 year olds.

Data Sources and Periodicity: The completion rate can be calculated using a school register, school surveys, or population estimates. Data on the number of graduates or, alternatively, school enrollment and repetition, are usually collected annually by the ministry of education. Data on the population are available from national statistical offices and are usually collected at 10-year intervals. During non-census years, vital registers can update population estimates—otherwise, projections are used.

Data Trends: Completion rates are reported by UNESCO as "Primary Completion Rate (Enrolment Rate at Last Grade of ISCED)." It is not clear whether enrollment used in the numerator was adjusted for repeaters, as recommended by the World Bank. Completion rates ranged from roughly 20 to 130 percent, as shown in the chart Completion Rates by Income Group, Minimum, Average and Maximum. It is likely that some of this variability stemmed from difficulties in obtaining reliable single age population estimates.
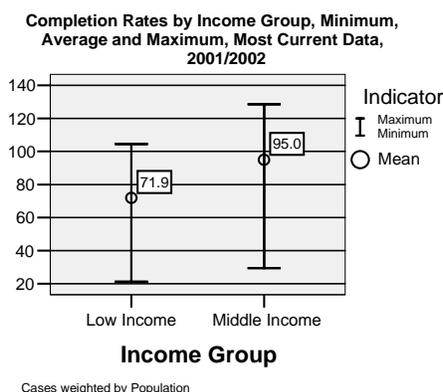
Completion Rates by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population

Average Completion Rates by Income Group by Region, Both Sexes, Most Current Data, 2001/2002

Cases weighted by Population
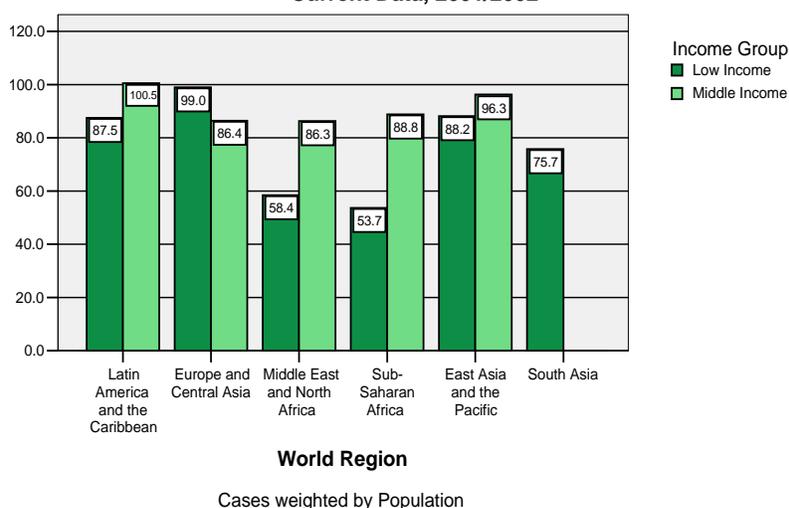
Average completion rates were well above 80 percent for nearly all income groups and regions, with the notable exceptions of the Middle East and North and Sub-Saharan Africa. These areas had average completion rates averaging below 60 percent, as shown in the chart Average Completion Rates by Income Group by Region, Both Sexes.

Annual Changes in Completion Rates by Income Group, 1999-2002 (in Percentage Points)

		Average Annual Change
Income Group	Low-income	0.7
	Middle-income	-1.1

All statistics weighted by population

The average annual change increased 0.7 percentage points in low-income countries between 1999 and 2002. Annual completion rates actually declined a percentage point on average in middle-income countries. These data are shown in the chart Annual Changes in Completion Rates by Income Group.

Completion rates for girls were within a few percentage points of those for boys in nearly all regions. However, gender disparity was acute in low-income countries in the Middle East and North Africa, Sub-Saharan Africa and South Asia, as shown in the chart Average Completion Rates by Region and Income Group by Sex.

Average Completion Rates by Region and Income Group by Sex, Most Current Data, 2001/2002
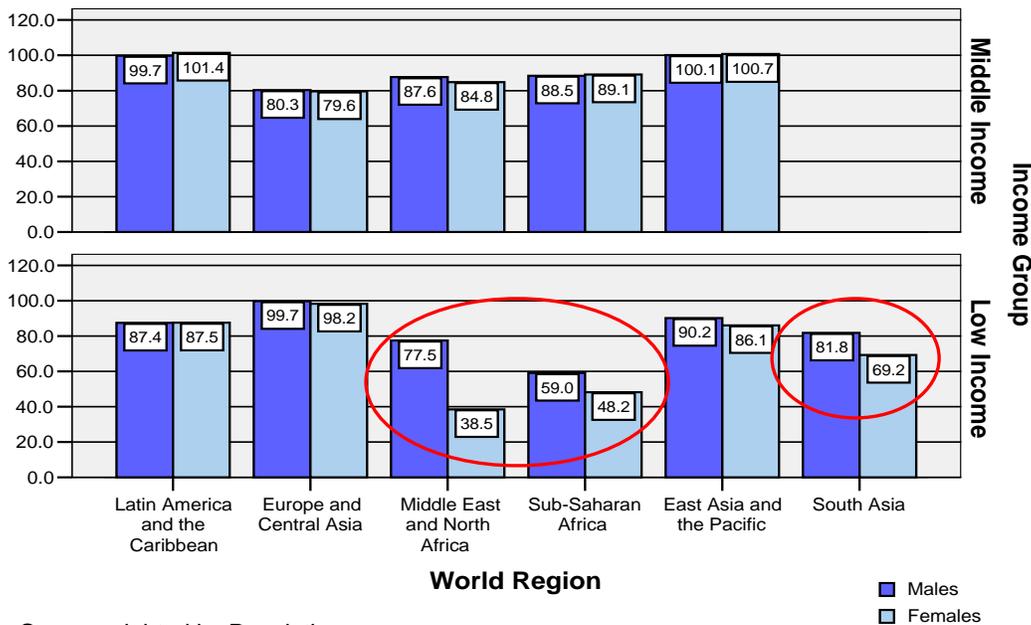
Cases weighted by Population

Comments and Limitations: Reliable estimates of the number of completers require accurate estimates of either the number of successful graduates or enrollment and repetition in the grade in question. Systems of graduation vary by country (e.g., examinations, automatic promotion, diplomas), limiting international comparability. Sources of error using the second method can occur because enrollment or repetition levels are under- or over-reported. Over-reporting of enrollment levels may occur if there is a financial incentive for administrators to do so. Under-reporting of enrollment and repetition may occur when ministries fail to include all schools in the country. Ministries often set repetition targets, giving administrators an incentive to under-report this indicator.

Reliable estimates of the completion rate also require reliable estimates of the school-age population. Issues related to the reliability of population estimates are discussed under Population Estimates Used in Education Statistics. It should be noted that the completion rate numerator includes either enrollment in the final year of primary school or the number of graduates, regardless of age. It is therefore possible for this indicator to exceed 100 percent.

ADULT LITERACY

Definition: The adult literacy rate is defined as the percentage of the population age 15 years and over that can read, write, and understand a short, simple statement on his or her everyday life. The definition of literacy sometimes extends to basic arithmetic and other life skills. Whereas the definition of literacy is widely used in national censuses and surveys, its interpretation and application may vary to some extent among countries, depending on national, social, and cultural circumstances.

Purpose: Literacy is a good measure of educational achievement in developing countries. The adult literacy rate shows the accumulated achievement of primary education and literacy programs in imparting basic literacy skills to the population, thereby enabling them to apply such skills in daily life and to continue learning and communicating using the written word. It represents a potential for further intellectual growth and contribution to economic-socio-cultural development of society. Illiteracy rates indicate the extent of need for policies and efforts in organizing adult literacy programs and quality primary education.

Method of Computation: Divide the number of literates by the corresponding age-group population and multiply the result by 100. Alternatively, apply the same method using the number of illiterates or subtract the literacy rate from 100 percent to derive the illiteracy rate.

Data Sources and Periodicity: Literacy data may be derived from population censuses, household surveys, or literacy surveys. However, not all censuses or surveys include specific questions for assessing literacy. In some countries where literacy questions are not included, a person's education attainment— years of schooling completed—is used to assess literacy status. A common practice is to consider illiterate those with no schooling and literate those who have attended up to at least grade five of primary school.
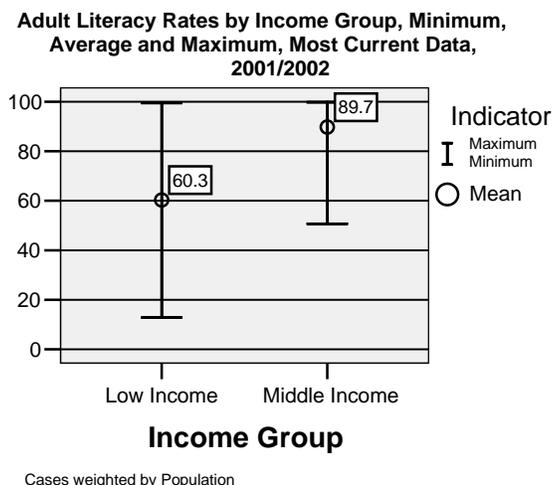
Many household surveys, including the Multiple Indicator Cluster Surveys, Demographic and Health Surveys, Core Welfare Indicators Questionnaire Surveys in Africa, and Living Standards Measurement Studies, collect literacy data, which can provide complementary data for countries without a recent census. However, definitions are not necessarily standardized, as described further in Comments and Limitations.

Most of the available data on literacy are based on reported literacy rather than on tested literacy and, in some cases, are derived from other proxy information.

Censuses are conducted every 10 years. Interim measures are obtained from periodic household surveys that are generally conducted every three to five years.

Data Trends: There is a very wide range in levels of adult literacy in low-income countries and a considerable range in middle-income countries, as shown in the chart Adult Literacy Rates by Income Group, Minimum, Average and Maximum.

With the exception of Europe and Central Asia, low-income countries had lower literacy rates than middle-income countries. The Middle East and North Africa had the lowest literacy rates relative to other countries in the same income categories. These data are shown in the chart Average Adult Literacy Rates by Income Group by Region, Both Sexes.

Adult Literacy Rates by Income Group, Minimum, Average and Maximum, Most Current Data, 2001/2002

Cases weighted by Population

Average Adult Literacy Rates by Income Group by Region, Both Sexes, Most Current Data, 2001/2002

Cases weighted by Population

World Region

Income Group
- Low Income
- Middle Income
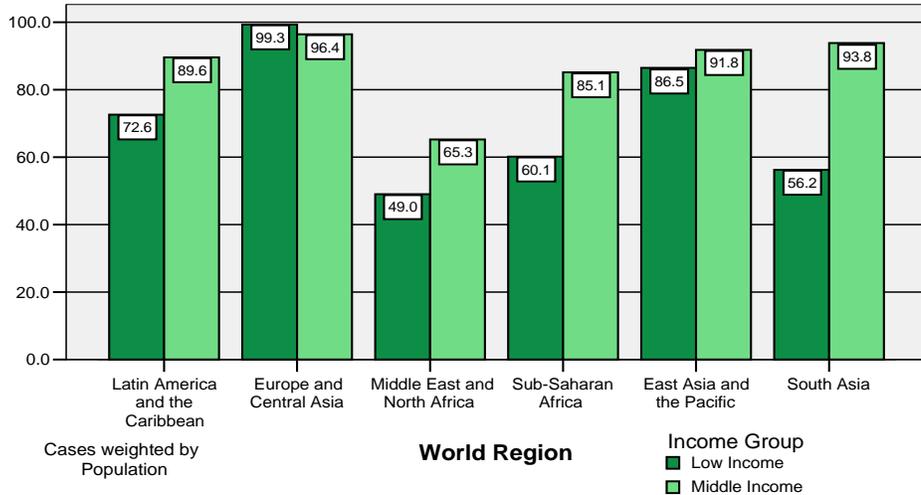
Female literacy rates were consistently lower than male literacy rates across all regions and income groups. This disparity was acute in the Middle East and North Africa and low-income countries in Sub-Saharan Africa and South Asia, as shown in the chart Average Adult Literacy Rates by Region and Income Group by Sex.

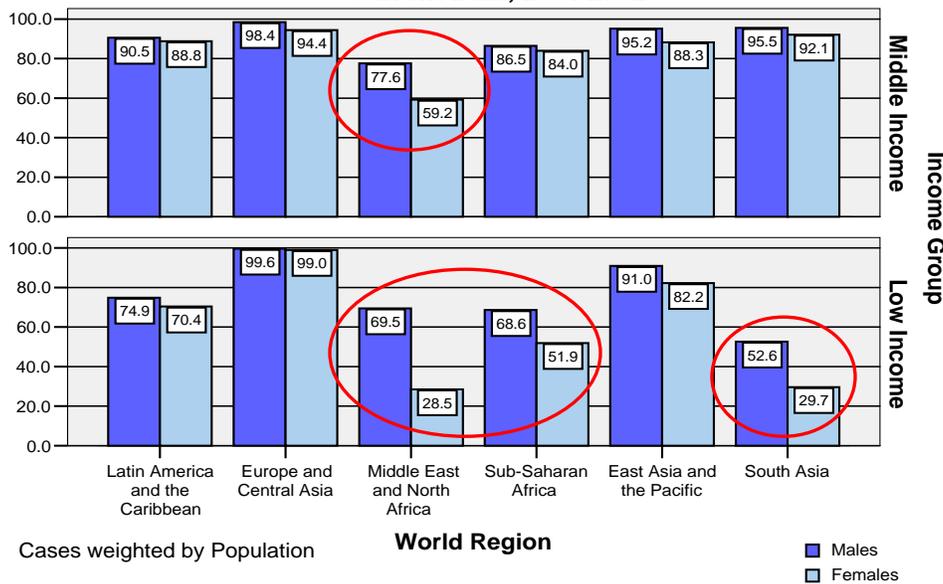**Average Adult Literacy Rates by Region and Income Group by Sex, Most Current Data, 2001/2002**

Cases weighted by Population

World Region

- Males
- Females

Comments and Limitations: Measurements of literacy can vary from simply asking, "Are you literate or not?" to performing literacy skills assessment tests. In some cases, literacy is measured crudely in population censuses, either through self-declaration or by assuming that people with no schooling are illiterate. These inconsistencies and lack of standardization make international comparisons and comparisons over time, even for the same survey, very difficult. The latest United Nations *Principles and Recommendations for Population and Housing Censuses* advises countries against adopting a proxy measurement based on education attainment and recommends that literacy questions be administered as part of national censuses and household surveys or as part of a post-census sample enumeration.

Shortcomings in the definition of literacy, measurement problems, and infrequency of censuses and literacy surveys weaken this indicator as a means of monitoring education outcomes.

POPULATION ESTIMATES

Reliable estimates of many of the indicators described here require reliable estimates of particular age groups of the population. These age groups may be single age groups, such as the official starting age or the expected age at completion of primary, assuming a pupil completes primary in the officially allotted time, or they may be for a group, such as the official primary school age group. Reliable estimates of these population groups are problematic for a number of reasons.

Estimates of population begin with censuses, which are typically conducted every 10 years. Such estimates may be updated with vital registers during non-census years. However, vital registers are often not maintained in developing countries. In their absence, projections must be used during non-census years. Developing countries may use a number of methods to make such projections.

The reliability of population estimates depends on a number of factors. The first is the reliability of the census on which the projections are based. A number of techniques may be used to assess the reliability of the census and to make adjustments for issues raised during that assessment. However, the assessment of the census does not always occur in many countries and much less appropriate adjustments are made.

During non-census years, projections must be made. Generally, the further one is from a census year, the less reliable the population estimate. The reliability of population estimates also depend on the reliability of fertility, mortality, and migration estimates. Sample surveys that provide such estimates are typically conducted every three to five years. However, some countries may be experiencing relatively rapid changes in population and in age and sex distributions. These fluctuations may result from such causes as international migration, civil unrest, and internal displacement. Where such events are transpiring, their effects may be very difficult to estimate, particularly on specific age groups.

National statistical offices typically conduct and maintain data from censuses, as well as official projections of the population for the country. However, the data are not always provided to ministries in the most useful form. For example, the age distribution of the population is typically provided in five-year increments. These age groupings generally do not coincide with the age groupings for the official school age. In addition, many education statistics require estimates of a single age. Obtaining such estimates may prove problematic.

National statistical offices in each country are a source for population estimates. Many countries host a website for such statistics. An excellent reference website for such host country sites is provided by the U.S. Bureau of Census: http://www.census.gov/main/www/stat_int.html. Additional sources for population include the United Nations (http://www.un.org/esa/population/unpop.htm), the Population Reference Bureau, the U.S. Bureau of Census, and (http://www.prb.org/).

STATISTICAL NOTES

Regional groupings of countries were provided by The World Bank. The World Bank also provided groupings by income levels, classified under four categories: low income, lower middle income, upper middle income, and high income.[1] Lower middle and upper middle income groupings were combined into one category in this analysis. Per capita income was provided by the Population Reference Bureau. Where per capita income was less then $3,000, countries were moved to the low income level. In addition, Equatorial Guinea, with a per capita income of $9,110, was reclassified under middle income. Country categories are provided in table A1.

Averages were weighted using population data. The average population of the grouping was used where population data were missing.

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[1] High income countries were grouped by OECD and non-OECD membership. They were collapsed into one category here.

Countries by Region and Income Level

LATIN AMERICA AND THE CARRIBEAN	Per Capita Income ($)	Population
Low Income		
Bolivia	2,390	2,600,000
Haiti	1,610	2,900,000
Honduras	2,540	2,200,000
Nicaragua	2,350	1,700,000
Middle Income		
Antigua and Barbuda	10,390	0
Argentina	10,190	10,000,000
Barbados	14,660	0
Belize	5,490	0
Brazil	7,450	50,900,000
Chile	9,420	3,900,000
Colombia	6,150	12,400,000
Costa Rica	8,560	1,200,000
Cuba	0	2,400,000
Dominica	4,920	0
Dominican Republic	6,270	2,500,000
Ecuador	3,340	4,000,000
El Salvador	4,790	2,000,000
Grenada	6,600	0
Guatemala	4,030	3,800,000
Guyana	3,940	200,000
Jamaica	3,680	700,000
Mexico	8,800	30,600,000
Panama	6,060	800,000
Paraguay	4,590	1,800,000
Peru	4,880	8,100,000
St. Kitts and Nevis	10,750	47,000
St. Lucia	4,950	0
St. Vincent and the Grenadines	5,190	0
Suriname	0	0
Trinidad and Tobago	9,000	400,000
Uruguay	7,710	800,000
Venezuela	5,220	7,400,000

EUROPE & CENTRAL ASIA		
Low Income		
Georgia	2,270	1,100,000
Kyrgyzstan	1,560	1,400,000
Republic of Moldova	1,600	1,200,000
Tajikistan	930	2,000,000
Uzbekistan	1,640	7,800,000
Middle Income		
Albania	4,960	900,000
Armenia	3,230	1,000,000
Azerbaijan	3,010	2,200,000
Belarus	5,500	2,400,000
Bosnia and Herzegovina	0	900,000
Bulgaria	7,030	1,700,000
Croatia	10,000	900,000
Czech Republic	14,920	2,200,000
Estonia	11,630	300,000
Hungary	13,070	2,100,000
Kazakhstan	5,630	4,600,000
Latvia	9,190	500,000
Lithuania	10,190	800,000
Poland	10,450	9,500,000
Romania	6,490	5,300,000
Russian Federation	8,080	34,600,000
Serbia and Montenegro	0	2,400,000
Slovakia	12,590	1,300,000
The Former Yugoslav Rep. of Macedonia	6,420	500,000
Turkey	6,300	19,600,000
Turkmenistan	4,780	1,400,000
Ukraine	4,800	11,100,000

MIDDLE EAST AND NORTH AFRICA	Per Capita Income	Population
Low Income		
Djibouti	2,040	200,000
Yemen	800	5,800,000
Middle Income		
Algeria	5,530	10,300,000
Egypt	3,810	22,100,000
Iran, Islamic Republic of	6,690	24,800,000
Iraq	0	7,600,000
Jordan	4,180	2,200,000
Lebanon	4,600	900,000
Libyan Arab Jamahiriya	0	2,000,000
Morocco	3,730	9,100,000
Oman	13,000	800,000
Palestinian Autonomous Territories		3,828,000
Saudi Arabia	12,660	6,700,000
Syrian Arab Republic	3,470	5,900,000
Tunisia	6,440	3,000,000

SUB-SAHARAN AFRICA	Per Capita Income	Population
Low Income		
Angola	1,840	4,100,000
Benin	1,060	2,100,000
Burkina Faso	1,090	3,900,000
Burundi	630	2,200,000
Cameroon	1,910	4,900,000
Central African Republic	1,170	1,200,000
Chad	1,010	2,400,000
Comoros	1,690	200,000
Congo	710	900,000
Côte d'Ivoire	1,450	5,200,000
Democratic Rep. of the Congo	630	16,400,000
Eritrea	1,040	1,200,000
Ethiopia	780	20,100,000
Gambia	1,660	400,000
Ghana	2,080	6,600,000
Guinea	2,060	2,500,000
Guinea-Bissau	680	400,000
Kenya	1,010	11,100,000
Lesotho	2,970	700,000
Liberia	0	1,200,000
Madagascar	730	4,700,000
Malawi	570	3,600,000
Mali	860	3,800,000
Mauritania	1,790	900,000
Mozambique	990	6,200,000
Niger	800	3,400,000
Nigeria	800	36,700,000
Rwanda	1,260	2,700,000
Sao Tome and Principe	0	0
Senegal	1,540	3,100,000
Sierra Leone	500	1,500,000
Somalia	0	3,200,000
Sudan	1,740	9,800,000
Togo	1,450	1,500,000
Uganda	1,360	7,300,000
United Republic of Tanzania	580	11,200,000
Zambia	800	3,300,000
Zimbabwe	2,180	4,200,000
Middle Income		
Botswana	7,740	600,000
Cape Verde	4,920	0
Equatorial Guinea	9,110	0
Gabon	5,530	300,000
Mauritius	10,820	300,000
Namibia	6,880	600,000
Seychelles	0	0
South Africa	9,810	12,400,000
Swaziland	4,730	300,000

EAST ASIA AND THE PACIFIC

	Per Capita Income	Population
Low Income		
Cambodia	1,970	3,300,000
Dem. People's Rep. of Korea	0	5,500,000
Lao People's Democratic Republic	1,660	1,700,000
Mongolia	1,710	900,000
Myanmar	0	14,000,000
Papua New Guinea	2,180	1,500,000
Solomon Islands	1,590	0
Timor-Leste		
Vanuatu	2,850	0
Viet Nam	2,300	25,300,000
Middle Income		
China	4,520	317,100,000
Fiji	5,330	300,000
Indonesia	3,070	63,600,000
Kiribati	0	0
Malaysia	8,500	6,500,000
Marshall Islands	0	0
Micronesia (Federated States of)		108,000
Palau		21,000
Philippines	4,450	24,000,000
Samoa	5,570	0
Thailand	6,890	17,300,000
Tonga	0	0

SOUTH ASIA

	Per Capita Income	Population
Low Income		
Afghanistan	0	6,300,000
Bangladesh	1,770	46,500,000
Bhutan	0	700,000
India	2,650	300,200,000
Nepal	1,370	7,800,000
Pakistan	1,960	49,100,000
Middle Income		
Maldives	0	0
Sri Lanka	3,510	5,500,000

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DATA SOURCES

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