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Education for All: The Year 2000 Assessment

Technical Guidelines

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Part I: Introduction

The EFA 2000 Assessment is a major global endeavour that will enable the participating countries (i) to construct a comprehensive picture of their progress towards their own Education for All goals since the 1990 Jomtien Conference, (ii) to identify priorities and promising strategies for overcoming obstacles and accelerating progress, and (iii) to revise their national plans of action accordingly. The results should be useful for policy-makers, planners and managers both within and outside government. The Assessment process will also provide an opportunity to refocus attention on basic education and reinvigorate efforts to meet basic learning needs.

Thus the Assessment is not just a data collection exercise, nor does it aim merely to produce a report. However, the assembly and analysis of relevant data and qualitative information constitute an essential part of the Assessment, providing the factual basis for discussion and decision.

The International Consultative Forum on Education for All (the EFA Forum), which is responsible for the global coordination of the EFA 2000 Assessment, has provided General Guidelines to all countries. Each country has been invited to establish a national **EFA Assessment Group**, which should move quickly to appoint a **technical sub-group**, comprising planners, school inspectors, statisticians and researchers, to collect and analyze the various data needed. The EFA Forum's Technical Advisory Group, comprising specialists from UNDP, UNESCO, UNFPA, UNICEF and the World Bank, has prepared these Technical Guidelines to assist the national technical sub-groups in their work.

The Technical Guidelines are presented in three parts. This introduction includes general information regarding the core indicators, data sources, suggested analytical practices, and several issues to be kept in mind when implementing the EFA 2000 assessment. The second part outlines the main areas to be assessed and proposes indicators that can be used to analyze them, together with the technical specifications for 18 core EFA indicators. The third part consists of four annexes: (a) a glossary of technical terms; (b) a set of illustrative data sheets for compiling the data and calculating the indicators at the national and sub-national levels; (c) instructions for the use of the accompanying electronic templates; and (d) a technical note on pupil-cohort flow analysis. The data sheets also propose a common format for key statistical tabulations that should be featured in the national assessment report.

Accompanying these Technical Guidelines is a diskette that includes the individual data sheets and two electronic calculation templates in EXCEL format. See instructions in Annex C. Data can be directly entered into the electronic data sheets and templates, and the built-in calculation formulae will automatically calculate the corresponding indicators, which will constitute an important element for the analytical work of the national EFA Assessment Group. The completed data sheets can be used also to produce tables and graphs for the national assessment report. A copy of the report should be sent to the EFA Forum Secretariat, together with the data sheets, preferably in electronic format on diskette.

These Technical Guidelines propose a number of characteristics and phenomena, as well as a set of 18 *core EFA indicators*, that may be used to describe or measure the main components of basic education. They are grouped according to the six «target dimensions» contained in the *Framework for Action to Meet Basic Learning Needs*, which was agreed at the World Conference on Education for All (Jomtien, Thailand, March 1990).

All countries are encouraged to make a special effort to gather the data needed for calculating these core EFA indicators. Most of the necessary data are collected regularly by countries, and the national aggregate figures are reported annually on the UNESCO statistics questionnaire. Of course each country may choose for its own purposes to include other relevant measures and indicators. Internationally agreed technical specifications are given in this document for each core indicator to help ensure consistency in the data and calculations within and across countries. The technical sub-groups in each country are invited to follow the specifications as closely as possible and to adapt and use the illustrative data sheets as tools for data compilation and analysis. The electronic spreadsheets that accompany these Technical Guidelines should facilitate data entry, analysis and reporting.

Coverage and disaggregation of data

The EFA 2000 Assessment aims at obtaining a comprehensive review of progress, achievements and shortfalls in the provision of basic education for all children, youth and adults. The data required for deriving the core indicators and other measures should therefore cover all components of basic education, as outlined in the Jomtien *Framework for Action to Meet Basic Learning Needs*. This means all of the main actors and categories of persons involved (pupils, teachers, illiterates, etc.), all types of educational institutions and programmes (public and private, formal and non-formal), and all levels of public expenditure on education (by central, provincial, district and local governments).

When estimates are used to complete the data coverage, they should be based on reliable methods and current trends. Any shortfall in data coverage and precautions regarding the data used should be signalled in the national assessment report by means of appropriate footnotes. It is suggested that the following symbols be used in the data sheets and in any reports:

- ... Data not available
- Magnitude nil
- * Provisional or estimated data
- ./. Data included elsewhere in another category

The collection of data should seek to elucidate two general concerns that are important for public policy: (i) the evolution or trends in the provision of basic education and in its impacts, particularly during the 1990s, and (ii) disparities in the provision of basic education.

In respect to the first concern, time series data for the core EFA indicators should be compiled, at least from 1990 to the “latest year available”. Such time series should cover at least the national aggregate indicators, but countries capable of producing time series data by geographical/administrative sub-divisions are encouraged to do so. Even when very current data are not immediately available, the assessment of certain aspects of basic education can proceed while data for the «latest year available» are being updated.

The disaggregation of data is essential to measure important disparities in the provision of basic education. Special attention needs to be given to identify disparities in education and literacy by gender, between major geographical or administrative units (e.g. provinces, districts), between urban and rural areas, and between public and private educational institutions and programmes. To the extent possible, the core EFA indicators should be disaggregated according to all these dimensions in order to measure the degree of disparity and to identify the disadvantaged areas and population groups for priority attention.

In some cases, important disparities can be measured by disaggregating data by age groups, by linguistic groups, by socio-economic category, or by other distinguishing features. Each country should determine what kind of disaggregation of data is possible and appropriate for policy analysis. For instance, small countries may be satisfied with data disaggregated to one sub-national level (e.g. provinces), whereas larger countries will probably wish to analyze data disaggregated to at least two sub-national levels (e.g. provinces and districts). Most of the illustrative data sheets in these Technical Guidelines and the accompanying electronic templates provide for data disaggregation by gender and by at least one sub-national administrative level, as well as by urban/rural areas and public/private education. They can be adapted to allow for other kinds of disaggregation as well.

Data for the assessment should be recent, reliable and comprehensive. Some data may not meet all these criteria, but they may be useful nevertheless to describe or illustrate an aspect or situation. When such data are used, it is important to make clear their source and limitations. For definitions of the terms, data items and indicators, please refer to the technical specifications in the next part as well as the glossary in the Annex A. More generally, data sources and the time period concerned should be indicated on all tables and graphics. Data on financial resources for education should as much as possible refer to actual expenditure. Budget figures should be used only when reliable data on expenditure are not available, and an appropriate footnote should be added to this effect in the assessment report.

Data sources

Many data needed for a comprehensive assessment of EFA are either already available or can be collected in each country. The sources of data include:

- A. Annual school reports or questionnaires filed with the central Ministry of Education or with lower level education authorities;
- B. School surveys undertaken on specific issues from time to time;
- C. School inspection reports;
- D. Statistical yearbooks published by the Ministry or the Central Statistical Office;
- E. Household surveys;
- F. Population censuses;
- G. Studies and project reports prepared for the Ministry or for donors.

In addition, a special effort will be needed to obtain data on certain basic education activities, particularly outside the school. This may entail carrying out or commissioning:

- H. Sample surveys, using established statistical methods to ensure their reliability;
- I. Spot surveys, using simpler methods to obtain illustrative data;
- J. Case studies, to document particular experiences in detail;
- K. Interviews, to obtain descriptive data and opinion.

It is important for each country to make use of all possible sources of data and other relevant information in order to compile a comprehensive and reliable overview and analysis of its progress towards EFA goals.

Gender Issues

A clear message from the EFA Forum's 1996 meeting in Amman, based on the Mid-decade Review of Progress towards EFA Goals, was that countries must intensify action to address gender disparities in education. Consequently, the national EFA assessments should give very careful consideration to the nature and causes of any gender disparities, and to the effectiveness of strategies that aim to address them. The analysis of data disaggregated by gender is thus an essential step, but it needs to be extended to consider various qualitative aspects as well. The complex interaction between gender disparities in education and other phenomena such as poverty, demographic trends, and employment opportunities call for special attention in each national EFA Assessment and in its report.

Some examples of gender issues that could be examined are: trends in participation rates at each level of education (primary, secondary and tertiary); disparities in repetition and completion rates; the gender distribution of teachers and its effect on access and achievement, especially of girls; the quality and relevance of curricula in relation to the learning needs and employment possibilities of the two sexes; and possible gender bias in curricula and in teaching.

Terminology

Finally, a glossary of key terms is given in Annex A to the Technical Guidelines to help standardize the terminology used in reporting results of the Assessment. In this connection, it should be noted that the term «primary schooling» is used here to mean the first level of formal education (sometimes called «elementary» or «basic»), and the term «grade» is used to designate an annual step within that level (sometimes called «form» or «class»), beginning with grade 1 (the entry step).

The term «basic education» needs some special explanation since it carries different meanings in different countries and has also been given different content by UNESCO over the years. Article 1 of the *World Declaration on Education for All* adopted at the 1990 Jomtien Conference affirms that "Every person - child, youth and adult - shall be able to benefit from educational opportunities designed to meet their basic learning needs. These needs comprise both essential learning tools (such as literacy, oral expression, numeracy, and problem solving) and the basic learning content (such as knowledge, skills, values, and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning. The scope of basic learning needs and how they should be met varies with individual countries and cultures, and inevitably, changes with the passage of time".

This constitutes the framework for the "expanded vision of basic education" that emerged from the Jomtien Conference. Consequently, basic education is a broader concept than primary schooling, comprising also early childhood education, adult literacy programmes and a range of nonformal education activities for young people and adults, as well as educational messages conveyed through the media. Some countries consider basic education to include lower secondary education, too. To cover such cases, the term "formal basic education" is used in the data sheets to allow entry of data for all grades, primary and beyond, that are considered "basic".

Most of the readily available and relevant statistical data relate to schooling, which is the main component of basic education and consequently the main focus of the EFA 2000 Assessment as reflected in indicators 2 through 15. However, in order to obtain a more comprehensive view of the provision of basic education, countries are encouraged to collect and analyze data and other information also about educational activities outside the formal system (see particularly indicators 1 and 16-18).

Part II: Core EFA Indicators

- Indicator 1:** *Gross enrolment in early childhood development programmes, including public, private, and community programmes, expressed as a percentage of the official age-group concerned, if any, otherwise the age-group 3 to 5.*
- Indicator 2:** *Percentage of new entrants to primary grade 1 who have attended some form of organized early childhood development programme.*
- Indicator 3:** *Apparent (gross) intake rate: new entrants in primary grade 1 as a percentage of the population of official entry age.*
- Indicator 4:** *Net intake rate: new entrants to primary grade 1 who are of the official primary school-entrance age as a percentage of the corresponding population.*
- Indicator 5:** *Gross enrolment ratio.*
- Indicator 6:** *Net enrolment ratio.*
- Indicator 7:** *Public current expenditure on primary education a) as a percentage of GNP; and b) per pupil, as a percentage of GNP per capita.*
- Indicator 8:** *Public expenditure on primary education as a percentage of total public expenditure on education.*
- Indicator 9:** *Percentage of primary school teachers having the required academic qualifications.*
- Indicator 10:** *Percentage of primary school teachers who are certified to teach according to national standards.*
- Indicator 11:** *Pupil-teacher ratio.*
- Indicator 12:** *Repetition rates by grade.*
- Indicator 13:** *Survival rate to grade 5 (percentage of a pupil cohort actually reaching grade 5).*
- Indicator 14:** *Coefficient of efficiency (ideal number of pupil years needed for a cohort to complete the primary cycle, expressed as a percentage of the actual number of pupil-years).*
- Indicator 15:** *Percentage of pupils having reached at least grade 4 of primary schooling who master a set of nationally defined basic learning competencies.*
- Indicator 16:** *Literacy rate of 15-24 year olds.*
- Indicator 17:** *Adult literacy rate: percentage of the population aged 15+ that is literate.*
- Indicator 18:** *Literacy Gender Parity Index: ratio of female to male literacy rates.*

Early Childhood Care and Development

Target: *Expansion of early childhood care and developmental activities, including family and community interventions, especially for poor, disadvantaged and disabled children.*

This target deals with the first component of basic education: early childhood care and development (ECCD), a term that embraces the full range of purposeful and organized activities intended to provide for the healthy growth and developmental needs of children from birth to eight years of age. This includes activities provided under the supervision of several areas of state responsibility, such as education, health, nutrition, social welfare, etc. The target specifically includes family and community ECCD interventions, especially for the poor, disadvantaged and disabled children. It is unlikely that many countries will have a systematic record of this broad range of activities, so information about them will often have to be obtained from reports and through special studies and household surveys.

Such studies and surveys have been carried out in a number of countries, sometimes by government authorities, but often by NGOs and international agencies. Consequently, those countries will have a good starting point for their assessment. The impact of ECCD programmes is difficult to assess. One approach is simply to determine what proportion of children who enter school has experienced some kind of ECCD support.

Countries are invited to collect and analyze data for at least the Indicators 1 and 2 described hereafter in order to develop a broad picture of the coverage of ECCD. Wherever possible, these data should be supplemented by information about the nature and availability of the ECCD programmes, and particularly about their educational component. Where possible, the assessment should focus more particularly on *early childhood development* (ECD) programmes, that is those that consist of organized and sustained school-based or centre-based activities designed to foster learning and the emotional and social development of children.

Indicator 1: *Gross enrolment in early childhood development programmes, including public, private, and community programmes, expressed as a percentage of the official age-group concerned, if any, otherwise the age-group 3 to 5.*

Definition and Purpose: Total number of children enrolled in early childhood development programmes, regardless of age, expressed as a percentage of the population in the relevant official age-group, otherwise the age-group 3 to 5. This indicator measures the general level of participation of young children in early childhood development programmes. It also indicates a country's capacity to prepare young children for primary education.

Calculation Method and Data Required: Divide the number of children enrolled in early childhood development programmes, regardless of age, by the population in the relevant official age-group (otherwise the age-group 3 to 5) in a given school-year, and multiply by 100.

$$\mathbf{GER}_{EC}^t = \frac{\mathbf{E}_{EC}^t}{\mathbf{P}_{EC}^t} * 100 \quad \text{or} \quad \mathbf{GER}_{EC}^t = \frac{\mathbf{E}_{EC}^t}{\mathbf{P}_{3-5}^t} * 100$$

Where,

\mathbf{GER}_{EC}^t = Gross enrolment ratio in early childhood development programmes in school-year t

\mathbf{E}_{EC}^t = Number of children enrolled in early childhood development programmes in school-year t

\mathbf{P}_{EC}^t = Population in relevant official age-group concerned with ECD in school-year t .

Interpretation: A high gross enrolment ratio in early childhood development programmes indicates adequate capacity for this type of programme within the country. A gross enrolment ratio approaching or surpassing 100 percent indicates that a country is, in principle, able to accommodate all children in the official age-group concerned by ECD. Countries may also differ widely in their approaches to early childhood education, with some approaches focusing on experiential education while others emphasise skill development, academic development, the visual arts, etc.

Quality Standards: The data on enrolment should cover both public and private institutions and programmes. Enrolment data for ECD programmes can be affected by differences in reporting practices, namely by the extent to which child-care programmes with little or no pedagogical component are included in the statistics. The distinction between early childhood development (ECD) and organized, custodial child care can be difficult to define in an internationally consistent way, especially with regard to very young children, for whom the natural pace of development limits the pedagogical possibilities.. Since gross enrolment does not take the age factor into account, children below 3 years and above 5 years (or whatever the official age-group may be) will also be included. Therefore, gross enrolment can exceed 100 percent. Only countries that require official registration of any ECD provision are likely to have official data for this indicator. Countries that have data only for public or state-supervised pre-school educational programmes will need to supplement these data with information on enrolment in other types of ECD programmes, possibly through case studies and/or sample surveys.

Indicator 2: *Percentage of new entrants to primary grade 1 who have attended some form of organized early childhood development programme.*

Definition and Purpose: Number of new entrants to primary grade 1 who have attended some form of organized early childhood development programme equivalent to at least 200 hours, expressed as a percentage of total number of new entrants to primary grade 1. This indicator helps to assess the proportion of new entrants to grade 1 who presumably have received some preparation for primary schooling through ECD programmes.

Calculation Method and Data Required: Divide the number of new entrants to grade 1 of primary education who have attended some form of organized early childhood development programme by the total number of new entrants to primary grade 1 in a given school-year, and multiply by 100.

$$\%NE_{i,EC}^t = \frac{NE_{i,EC}^t}{NE_i^t} * 100$$

Where,

$\%NE_{i,EC}^t$ = Percentage of new entrants to grade 1 of primary education in school-year t who have attended some form of organized early childhood development programme;

$NE_{i,EC}^t$ = Number of new entrants to grade 1 of primary education in school-year t who have attended some form of organized early childhood development programme;

NE_i^t = Total number of new entrants to primary grade 1 in school-year t .

Interpretation: A high percentage of new entrants to grade 1 of primary education who have attended some form of organized ECD programme indicates that a large proportion of these children have participated in organized learning activities prior to entering primary school. Progress in schooling is often associated with cognitive abilities acquired at young ages. It is commonly recognized that prior participation in ECD programmes can play an important role in a child's future education, because they shape attitudes toward learning and develop basic social skills, but the effect of ECD activities on children's cognitive development may vary according to the programme attended. However, this indicator may give an exaggerated picture of access to ECD, since those children who have access to ECD programmes are also more likely to have access to primary schools.

Quality Standards: The percentage of new entrants to primary grade 1 who have attended some form of organized early childhood development programme cannot exceed 100 per cent. Obtaining data for this indicator will be a problem in many countries. Useful data may exist in school registration records, and school census instruments may also be geared to collecting this information. Otherwise, the data could be gathered through a sample survey of schools or through household surveys.

Primary Education

Target: *Universal access to, and completion of, primary/basic education by the year 2000.*

This target concerns not only the expansion of access to primary education to cover all eligible children, but also the improvement of its internal efficiency so that all pupils actually complete the primary cycle. It entails ensuring that adequate resources and infrastructure are available and used effectively.

In order to make a comprehensive assessment of progress towards this target, data and other information are needed on all forms of organized provision of primary education, whether publicly or privately funded or managed. When a country considers that "basic education" includes the first (lower) cycle of secondary education as well, data on it should be included also in the assessment.

Most countries regularly collect the data needed for calculating 13 of the 18 core EFA indicators, such as enrolment ratios and intake rates, and they report the national aggregate data and indicators to UNESCO on the annual UNESCO statistical questionnaire. However, some countries will need to make a special effort to collect and report such data. This may require changing the school census forms for the next school year or gathering data through sample surveys or household surveys. The data needed for a few indicators (e.g. indicators 9 and 10) have not been reported internationally before, so they will constitute benchmark data for future assessments, as well as contributing to the present analysis.

In assessing progress towards this EFA target, countries may wish to examine several other factors that affect access to schooling, the teaching and learning process and its outcomes, as well as the efficiency of primary education. For example, such factors as the physical condition of schools and classrooms; the availability of drinking water, functioning toilets, and electricity; the availability and condition of textbooks and other learning materials; attendance patterns of pupils and teachers; policies and practices affecting the inclusion or exclusion of children with disabilities or learning difficulties; the provision of professional support and supervision of teachers; school community interactions (e.g. active parent-teacher associations, use of school buildings and grounds for community activities and adult literacy programmes).

Indicator 3: Apparent (gross) intake rate: new entrants in primary grade 1 as a percentage of the population of official entry age.

Definition and Purpose: 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. The Apparent Intake Rate (AIR) reflects the general level of access to primary education. It also indicates the capacity of the education system to provide access to grade 1 for the official school-entrance age population. This indicator is used as a substitute for Net Intake Rate (NIR) in the absence of data on new entrants by single years of age.

Calculation Method and Data Required: Divide the number of new entrants in grade 1, regardless of age, by the population of the official school-entrance age, and multiply the result by 100.

$$\text{AIR}^t = \frac{N^t}{P_a^t} * 100$$

Where,

AIR^t = Apparent Intake Rate in school-year t

N^t = Total number of new entrants in the first grade of primary education, in school-year t

P_a^t = Population of official primary school entrance-age a , in school-year t

N.B. When data on new entrants are not separately reported, they can be derived by subtracting the numbers of repeaters from enrolment in first grade.

Interpretation: A high Apparent Intake Rate indicates in general a high degree of access to primary education. As this calculation includes all new entrants to first grade, including over-aged and under-aged children entering primary school for the first time, the AIR can be more than 100%.

Quality Standards: The number of new entrants should refer to both public and private schools. Data on population (or population estimates) used in deriving this indicator should refer strictly to the official school-entrance age. Care should be taken not to include repeaters in grade 1 in the calculation, since this will lead to an inflated Apparent Intake Rate.

Indicator 4: Net intake rate: new entrants to primary grade 1 who are of the official primary school-entrance age as a percentage of the corresponding population.

Definition and Purpose: 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. The Net Intake Rate (NIR) gives a more precise measurement of access to primary education of the eligible, primary school-entrance age population than does the AIR.

Calculation Method and Data Required: Divide the number of children of official primary school-entrance age who enter the first grade of primary education by the population of the same age, and multiply the result by 100.

$$\text{NIR}^t = \frac{\text{N}_a^t}{\text{P}_a^t} * 100$$

Where,

NIR^t = Net Intake Rate in school-year t

N_a^t = Number of children of official primary school-entrance age a who enter the first grade of primary education, in school-year t

P_a^t = Population of official primary school-entrance age a , in school-year t

Interpretation: A high Net Intake Rate indicates a high degree of access to primary education for the official primary school-entrance age children and a high proportion of pupils of the same age in the first primary grade, which may favour the pedagogical situation. Countries aiming to universalize primary education will seek to enrol all children at the official school-entrance age, and thus the NIR is a measure of progress in this regard.

Quality Standards: Data on both new entrants and population used in deriving this indicator should refer strictly to the official school-entrance age. In principle the value of this indicator should not exceed 100%. Care should be taken not to include repeaters in grade 1 in the calculation. This can be a problem especially with respect to under-aged pupils who repeat the first grade when they reach the official-entrance age.

Indicator 5: Gross enrolment ratio. (GER)

Definition and Purpose: Total enrolment in primary education, regardless of age, expressed as a percentage of the eligible official primary school-age population in a given school-year. The GER is widely used to show the general level of participation in and capacity of primary education. It is used in place of the net enrolment ratio (NER) when data on enrolment by single years of age are not available. It can also be used together with the NER to measure the extent of over-aged and under-aged enrolment.

Calculation Method and Data Required: Divide the number of pupils enrolled in primary education, regardless of age, by the population of the official primary school age-group and multiply the result by 100.

$$\text{GER}_p^t = \frac{\text{E}_p^t}{\text{P}_{p,a}^t} * 100$$

Where,

GER_p^t = Gross Enrolment Ratio in primary education p in school-year t

E_p^t = Enrolment in primary education p in school-year t

$P_{p,a}^t$ = Population in age-group **a** which officially corresponds to the primary level of education **p** in school-year **t**.

Example: If the official entrance age for primary education is 7 years, and it has a duration of 6 years, then **a** is (7-12) years.

Interpretation: A high GER indicates a high degree of participation, whether the pupils belong to the official age-group or not. A GER value approaching or exceeding 100 percent indicates that a country is, in principle, able to accommodate all of its primary school-age population, but it does not indicate the proportion of that population actually enrolled. The achievement of a GER of 100 per cent is therefore a necessary but not sufficient condition for universal primary education. When a country's GER exceeds 90 per cent for primary education, the aggregate number of places for pupils is approaching the number required for full enrolment of the official age-group population. However, in order to achieve universal primary education, the number of under-age and over-age pupils would need to decline in order to free places for pupils in the official primary school age-group.

Quality Standards: GER at the primary level of education should be based on total enrolment in all types of primary schools and equivalent education institutions, including public, private and all other institutions that provide organised educational programmes at the primary level. GER can sometimes exceed 100% due to the inclusion of over-aged and under-aged pupils and repeaters. In this case, a rigorous interpretation of GER needs additional information on the extent of repetition, early and late entrants, etc.

Indicator 6: Net enrolment ratio. (NER)

Definition and Purpose: Enrolment in primary education of the official primary school age-group expressed as a percentage of the corresponding population. The NER gives a more precise measurement of the extent of participation in primary education of children belonging to the official primary school age.

Calculation Method and Data Required: Divide the number of pupils enrolled in primary education who are of the official primary school age-group by the population for the same age-group and multiply the result by 100.

$$NER_p^t = \frac{E_{p,a}^t}{P_{p,a}^t} * 100$$

Where,

NER_p^t = Net Enrolment Ratio at the primary level of education (**p**) in school-year **t**

$E_{p,a}^t$ = Enrolment of the population of age-group **a** at the primary level of education (**p**) in school-year **t**

$P_{p,a}^t$ = Population in age-group **a** which officially corresponds to the primary level of education (**p**) in school-year **t**

Example: If the entrance age for primary education is 7 years with a duration of 6 years then **a** is (7-12) years.

Interpretation: A high NER denotes a high degree of participation in primary education of the official primary school age-group. The NER's maximum value is 100%. An NER that increases over time reflects improving participation at the primary level of education. When

the NER is compared with the GER, the difference between the two ratios measures the incidence of under-age and over-age enrolment. If the NER is below 100%, then the percentage difference provides a measure of the proportion of primary school-age children not enrolled at the primary level. However, since some primary school-age children could be enrolled at other levels of education, this percentage difference should in no way be considered as indicating the exact percentage of children not enrolled. A more precise complementary indicator is the *age-specific enrolment ratio* (ASER), which shows the level of participation in education of the population at each particular age.

Quality Standards: NER at the primary level should be based on total enrolment in all types of primary schools and equivalent educational institutions, including public, private and all other institutions that provide organised educational programmes at the primary level. Certain difficulties may arise when calculating an NER that approaches 100%:

- when the reference date for entry to primary education does not coincide with the birth dates of all of the cohort eligible to enrol at this level of education;
- when a large proportion of children starts primary school earlier than the prescribed age and consequently finishes earlier as well; and
- when there is an increase in the entrance age to primary education while its duration remains unchanged.
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N.B. Although the NER cannot exceed 100%, values up to 105% have been obtained due to inconsistencies in the enrolment and/or population data.

Indicator 7: Public current expenditure in primary education (a) as a percentage of GNP and (b) per pupil, as a percentage of GNP per capita.

Definition and Purpose: Public current expenditure in primary education expressed as a percentage of GNP shows the share of the value of the total national production of goods and services in a given year that has been devoted to primary education. Public current expenditure per pupil in primary education expressed as a percentage of GNP per capita in a given financial year measures the average cost of a pupil in primary education in relation to the country's GNP per capita. Both indicators when compared with similar indicators for other levels of education, also measure the relative emphasis given to investment in primary education.

Calculation Method and Data Required: (a) Divide public current expenditure on primary education in a given year by the GNP for the same year and multiply by 100.

$$\%PCXE_{GNP}^t = \frac{PCXE_p^t}{GNP^t} * 100$$

(b) Divide per pupil public current expenditure on primary education in a given year by the GNP per capita for the same year and multiply by 100.

$$\%PCXE_{GNPc}^t = \frac{PCXE_p^t}{E_p^t} / \frac{GNP^t}{P^t} * 100$$

Where,

$\%PCXE_{GNP}^t$ = Public current expenditure in primary education **p** as a percentage of GNP

$\%PCXE_{GNPc}^t$ = Public current expenditure per pupil of primary education **p** as percentage of GNP per capita in financial year **t**

$PCXE_p^t$ = Public current expenditure on primary education **p** in financial year **t**

GNP^t = Gross National Product in financial year **t**

E_p^t = Total enrolment in primary education **p** in school-year **t**

P^t = Total national population in year **t**.

Interpretation: High percentage values for both indicators (a) and (b) generally denote a high level of spending on primary education. Indicator (a) measures the overall proportion of GNP that has been spent on primary education by the public authorities (central, provincial and local). Indicator (b) measures the per pupil cost in primary education in relation to GNP per capita, thereby relating average spending per pupil to the theoretical average per capita income within the country. This avoids problems of international comparability that would result if spending per pupil were converted into a common currency applying exchange rates. One should, however, interpret with care a high level of spending per pupil since this could simply reflect low enrolment. Per pupil expenditure as a percentage of GNP per capita should therefore be viewed in conjunction with enrolment ratios. Low expenditure per pupil and low enrolment in primary education when compared to high expenditure and/or low enrolment in tertiary education suggests a need to reconsider resource allocations within the education sector, especially if universal primary education is being given priority.

Quality Standards: Public current expenditure on primary education as a percentage of GNP cannot exceed or even approach 100%. Public current expenditure on primary education per pupil expressed as a percentage of GNP per capita can sometimes exceed 100% in countries where GNP per capita is low and the current cost per pupil is high. These two indicators should be based on consistent data on public current expenditure that covers central, provincial and local government spending on all public primary schools and subsidies to private educational institutions, teachers and pupils. The use of this indicator must take into account the coverage of public current expenditure for primary education and the extent to which the GNP estimates represent the true level of national economic production. The fact that fiscal year and school year budget periods may be different should also be taken into consideration.

Indicator 8: Public expenditure on primary education as a percentage of total public expenditure on education.

Definition and Purpose: Public expenditure for primary education expressed as a percentage of total public expenditure on education. This indicator shows the relative share of expenditure on primary education within overall public expenditure on education.

Calculation Method and Data Required: Divide public expenditure devoted to primary education by total public expenditure on all levels of education, and multiply the result by 100.

$$\%PXE_p^t = \frac{PXE_p^t}{\sum_{h=1}^n PXE_h^t} * 100$$

Where,

$\%PXE_p^t$ = Public expenditure on primary education **p** as a percentage of total public expenditure on education in financial year **t**.

PXE_p^t = Public expenditure on primary education **p** in financial year **t**.

PXE_h^t = Public expenditure on education at level **h** in financial year **t**.

Interpretation: A relatively high percentage of public expenditure devoted to primary education denotes the priority given to primary education in national educational policies and resource allocation. When interpreting this indicator, one should take into account the corresponding primary level enrolment, the GER and NER, and then assess the relative current expenditure per pupil accordingly.

Quality Standards: This indicator should be based on consistent data on public expenditure for each level of education that cover public funding for both public and private educational institutions. In some instances, it may be necessary to add to the expenditure data from the Ministry of Education expenditure data from other ministries that spend a part of their budget on educational activities at the primary education level

Indicator 9: Percentage of primary school teachers having the required academic qualifications.

Definition and Purpose: The number of primary school teachers with at least the minimum academic qualifications required by the public authorities for teaching in primary education, expressed as a percentage of the total number of primary school teachers. This indicator measures the proportion of primary school teachers who meet the basic requirement in terms of academic qualifications as specified by the country's authorities. It indicates the general quality of a country's human capital involved in teaching in primary education. Teachers are persons who, in their professional capacity, guide and direct pupils' learning experiences in gaining the knowledge, attitudes and skills that are stipulated in a defined curriculum programme.

Calculation Method and Data Required: Divide the number of primary school teachers having the minimum required academic qualifications by the total number of primary school teachers, and multiply by 100.

$$\%T_{p,q}^t = \frac{T_{p,q}^t}{T_p^t} * 100$$

Where,

$\%T_{p,q}^t$ = Percentage of primary school teachers having the required academic qualifications in year **t**

$T_{p,q}^t$ = Total number of primary school teachers having the required academic qualifications in year **t**

T_p^t = Total number of primary school teachers in year **t**

Interpretation: A high percentage of teachers having the required academic qualifications denotes the availability of academically qualified teachers and the general quality of the teaching force. Teachers' academic qualifications, together with pre-service or in-service teacher training, correlate strongly and consistently with pupils' scholastic performance, which of course is also affected by other factors, such as the experience and status of

teachers, teaching methods, teaching materials and the quality of classroom conditions. It should be noted that some teachers without the required academic qualifications may acquire equivalent competence in the subject matter through professional experience and self-instruction.

Quality Standards: National standards regarding the minimum academic qualifications required of a primary school teacher should be strictly applied in identifying the number of academically qualified teachers. The percentage of teachers having the required academic qualifications cannot exceed 100%. This indicator should be calculated separately for public, private and other primary schools. Care should be exercised to take into account all teaching staff.

Indicator 10: Percentage of primary school teachers who are certified to teach according to national standards.

Definition and Purpose: The number of primary school teachers who are certified to have received the minimum organized teacher-training (pre-service or in-service) required for teaching in primary education, expressed as a percentage of the total number of primary school teachers. This indicator measures the proportion of primary school teachers trained in pedagogical skills, according to national standards, to effectively teach and use the available instructional materials. It reveals also a country's commitment to invest in the development of its human capital involved in teaching activities. Teachers are persons who, in their professional capacity, guide and direct pupils' learning experiences in gaining the knowledge, attitudes and skills that are stipulated in a defined curriculum programme.

Calculation Method and Data Required: Divide the number of primary school teachers who are certified to have received the minimum required teacher-training by the total number of primary school teachers, and multiply by 100.

$$\%T_{p,c}^t = \frac{T_{p,c}^t}{T_p^t} * 100$$

Where,

$\%T_{p,c}^t$ = Percentage of primary school teachers certified to have the required teacher-training in year **t**

$T_{p,c}^t$ = Total number of primary school teachers certified to have the required teacher-training in year **t**

T_p^t = Total number of primary school teachers in year **t**

Interpretation: A high percentage of teachers certified to teach in primary schools implies that a majority of the teaching force is trained and has the necessary pedagogical skills to teach and use the available instructional materials in an effective manner. This indicator does not take into account differences in teachers' experiences and status, teaching methods, teaching materials and variations in classroom conditions -- all factors that also affect the quality of teaching/learning. It should be noted that some teachers without this certification may have acquired equivalent pedagogical skills through professional experience.

Quality Standards: Data should refer to teachers certified as having received adequate pre-service or in-service teacher training, or both. The percentage of certified teachers cannot exceed 100%. This indicator should be calculated separately for public, private and all other schools.

Indicator 11: Pupil/teacher ratio (PTR)

Definition and Purpose: Average number of pupils per teacher in primary education in a given school-year. Teachers are persons who, in their professional capacity, guide and direct pupils' learning experiences in gaining the knowledge, attitudes and skills that are stipulated in a defined curriculum programme. This indicator is used to measure the level of human resources input, in terms of number of teachers, in relation to the size of the pupil population.

Calculation Method and Data Required: Divide the total number of pupils enrolled in primary education by the number of teacher at the same level.

$$PTR_p^t = \frac{E_p^t}{T_p^t}$$

Where,

PTR_p^t = Pupil-teacher ratio in primary education in school-year t

E_p^t = Total number of pupils in primary education in school-year t

T_p^t = Total number of teachers in primary education in school-year t

Interpretation: The PTR should normally be compared to established national norms on the number of pupils per teacher for each level or type of education. A high pupil/teacher ratio suggests that each teacher has to deal with a large number of pupils and that, conversely, pupils receive less attention from the teacher. It is generally assumed that a low pupil/teacher ratio signifies smaller classes, which enable the teacher to pay more attention to individual pupils and thus contribute to the better scholastic performance of the pupils. This indicator does not take into account differences in teachers' academic qualifications, pedagogical training, professional experience and status, teaching methods, teaching materials and variations in classroom conditions -- all factors that could also affect the quality of teaching/learning and pupil performance.

Quality Standards: This indicator should be calculated separately for public, private and all other schools. In calculating and interpreting this indicator, one should take into account 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. For instance, the number of part-time teachers should be converted to a number of 'equivalent full-time teachers'. Care should be exercised to include all staff involved in teaching.

Indicator 12: Repetition rates by grade.

Definition and Purpose: Proportion of pupils enrolled in a given grade in a given school-year who study in the same grade the following school-year. This indicator measures the phenomenon of pupils repeating a grade, and is one measure of the internal efficiency of the primary education cycle.

Calculation Method and Data Required: Divide the number of repeaters in a given grade in school-year $t+1$ by the number of pupils enrolled in the same grade in the previous school-year t .

$$r_i^t = \frac{R_i^{t+1}}{E_i^t}$$

Where,

r_i^t = Repetition Rate at grade i in school-year t

R_i^{t+1} = number of pupils repeating grade i , in school-year $t+1$

E_i^t = number of pupils enrolled in grade i , in school-year t

See Annex D for a more detailed explanation of pupil-cohort flow analysis.

Interpretation: Repetition rates should ideally approach zero per cent. High repetition rates reveal problems in the internal efficiency of the education system and possibly reflect a poor level of instruction. When compared across grades, the patterns can indicate specific grades with relatively higher repetition rates, hence requiring more in-depth study of the causes and possible remedies. In some cases, low repetition rates merely reflect policies or practices of automatic promotion. The maximum repetition rate and the number of grade repetitions allowed may in some cases be determined by the education authorities in order to cope with limited capacity at certain grade levels and to increase the flow of pupils through the education cycle. Consequently, care should be taken in interpreting this indicator, especially when making comparisons between education systems.

Quality Standards: Like other pupil-flow rates (promotion and drop-out rates), the repetition rate is derived by analyzing data on enrolment and repeaters by grade for two consecutive years. One should therefore ensure that such data are consistent in terms of coverage over time and across grades. Special attention should be paid to avoid some common errors that may bias these flow-rates, such as over-reporting of enrolments and/or repeaters (particularly in primary grade 1), incorrect distinction between new entrants and repeaters, and transfers of pupils between grades and schools.

Indicator 13: Survival rate to grade 5 (percentage of a pupil cohort actually reaching grade 5).

Definition and Purpose: Percentage of a cohort of pupils who enrolled in the first grade of primary education in a given school-year and who eventually reach grade 5. Its purpose is to assess the “holding power” and internal efficiency of an education system. The survival rate to grade 5 indicates the proportion of a pupil cohort that completes grade 4 and reaches grade 5. Conversely, it indicates the magnitude of drop-out before grade 5.

Calculation Method and Data Required: Divide the total number of pupils belonging to a pupil cohort who reached each successive grade of primary education by the number of pupils in the original pupil cohort, i.e. those pupils who enrolled together in the first grade of primary education, and multiply the result by 100.

$$SR_{g,i}^k = \frac{\sum_{t=1}^m P_{g,i}^t}{E_g^k} * 100 \quad \text{Where, } P_{g,i}^t = E_{g,i+1}^{t+1} - R_{g,i+1}^{t+1}$$

Where,

i = grade (1, 2, 3, ..., n) t = year (1, 2, 3, ..., m) g = pupil-cohort

$SR_{g,i}^k$ = Survival Rate of pupil-cohort g at grade i for a reference year k

E_g^k = Total number of pupils belonging to a cohort g at a reference year k

$P_{g,i}^t$ = Promotees from E_g^k who would join successive grades i throughout successive years t

R_i^t = Number of pupils repeating grade i in school-year t

See Annex D for a more detailed explanation of pupil-cohort flow analysis.

Interpretation: Survival rate to grade 5 of primary education is of particular interest because the completion of at least four years of schooling is commonly considered a pre-requisite for a sustainable level of literacy. The distinction between survival rate with and without repetition is necessary to determine the extent of wastage due to drop-out and to repetition. Given that this indicator is usually estimated using cohort analysis models that are based on a number of assumptions, care should be taken in making comparisons across countries.

Quality Standards: Since the calculation of this indicator is based on pupil-flow rates, the reliability of the survival rate to grade 5 depends on the consistency of data on enrolment and repeaters in terms of coverage over time and across grades.

Indicator 14: Coefficient of efficiency (ideal number of pupil years needed for a pupil cohort to complete the primary cycle, expressed as a percentage of the actual number of pupil-years).

Definition and Purpose: The ideal (optimal) number of pupil-years required (i.e. in the absence of repetition and drop-out) to produce a number of graduates from a given pupil cohort in primary education expressed as a percentage of the actual number of pupil-years spent to produce the same number of graduates. One school-year spent in a grade by a pupil is counted as one pupil-year. The coefficient of efficiency is a synthetic indicator of the internal efficiency of an education system. It summarises the consequences of repetition and drop-out on the efficiency of the educational process in producing graduates. The coefficient of efficiency is the reciprocal of the Input-Output ratio, which is often used as an alternative indicator of internal efficiency.

Calculation Method and Data Required: Divide the ideal number of pupil-years required to produce a number of graduates from a given pupil cohort in primary education by the actual number of pupil-years spent to produce the same number of graduates, and multiply the result by 100.

$$CE_g = \frac{\sum_{j=n}^{n+k} G_{g,j} * n}{\left\{ \sum_{j=n}^{n+k} G_{g,j} * j \right\} + \left\{ \sum_{j=1}^{n+k} D_{g,j} * j \right\}} * 100$$

Where,

CE_g = Coefficient of Efficiency for a pupil-cohort g

$G_{g,n}$ = the number of pupils graduating from cohort g in final grade n after n years of study (without repetition)

$G_{g,j}$ = the number of pupils graduating from cohort g in final grade n after j years of study

$D_{g,j}$ = the number of pupils (of the cohort g) dropping out after j years of study

k denotes the number of repetitions allowed; n the prescribed normal duration of study for the primary level of education; g the pupil-cohort; and j the number of years of study.

See Annex D for a more detailed explanation of pupil-cohort flow analysis.

Interpretation: A coefficient of efficiency approaching 100% indicates a high overall level of internal efficiency and little wastage due to repetition and drop-out. A coefficient of efficiency that is less than 100% signals inefficiency due to grade repetition and drop-out.

Given that this indicator is usually derived using cohort analysis models that are based on a number of assumptions, and owing to its highly synthetic nature, care should be taken in making comparisons across education systems. From a conceptual viewpoint, economic efficiency and resource utilization are optimal when most pupils graduate within the prescribed duration of the primary cycle, but this does not necessarily imply achievement of the expected learning outcomes. Also, according to this calculation method, early drop-out (i.e. in the lower grades) reduces internal efficiency less than late drop-out (i.e. in the higher grades). This means that efficiency from the economic point of view can be in contradiction with educational objectives that aim to retain pupils in school as long as possible or at least until they reach the higher grades in the primary cycle when they would have acquired the prescribed basic knowledge and skills.

Quality Standards: Since the calculation of this indicator is based on pupil-flow rates, its reliability depends on the consistency of data on enrolment and repeaters in terms of coverage over time and across grades. Differences in national regulations concerning grade repetition should be taken into account when making any inter-country comparisons.

Learning Achievement and Outcomes

Target: *Improvement of learning achievement such that an agreed percentage of an appropriate age cohort (for example, 80 per cent of 14 year-olds) attains or surpasses a defined level of necessary learning achievement.*

This target concerns the effectiveness of basic education provisions in terms of actual learning achievement. The approaches taken by countries to assess learning achievement vary considerably, reflecting different interpretations of what are the intended outcomes of education. Some countries assess learning achievement in respect to mastery of the prescribed curricula as determined through examinations. Others assess mastery of a series of sequenced ‘minimum learning levels’ or ‘essential learning competencies’. Still others use standardized tests of basic skills or tests of functional literacy, numeracy and ‘life skills’. The UNESCO/UNICEF Monitoring Learning Achievement (MLA) Project has encouraged countries to define their own criteria of learning achievement and has strengthened national capacities to assess literacy, numeracy and life skills. The MLA Project has focused on children with at least four years of schooling, i.e. by which time they should have developed sustainable literacy and numeracy skills. These and other approaches have found considerable variation in learning achievement within and between countries.

However, nearly all assessments of children’s learning take place in schools. This target area draws attention to the need to assess also the level of basic learning achieved by children in a certain age-group (to be determined by each country), whether they are in school or not. For countries where a large number of children never enter school, a special effort and imaginative approaches are needed to assess their learning achievement.

Countries are invited to take this opportunity to consider the modalities they use to assess children’s learning achievement. It may be necessary to go beyond current testing practices that tend to focus on narrowly defined cognitive skills. Bearing in mind that the

school is only one of several learning environments, what modalities are needed to assess the basic knowledge, skills, attitudes and values that each individual needs to live well? How can learning achievement be assessed in respect to the four pillars of a learning society: i.e. learning to do; learning to know; learning to be; and learning to live together?

The assessment should make use of whatever data on learning achievement are available -- or obtainable through sampling methods. It is particularly important to analyze variations within the country, as reflected through data disaggregated by gender and geography, with a view to identifying the possible causes of the differences. This should be helpful in planning improvements in the curricula and teacher education, as well as targeting resources where the need is greatest. Countries may find valuable information for their assessment in studies that examine the links between the conditions of schooling and learning outcomes. These can feed reflection on improving the learning environment and creating 'child-friendly' schools.

In addition to indicators 15 and 16 below, other measurable outcomes of enhanced learning achievement are the increased numbers of literate adults and improved adult literacy rates, reflected in trends over time (see Target 4 below).

Indicator 15: Percentage of pupils having reached at least grade 4 of primary schooling who master a set of nationally defined basic learning competencies.

Definition and Purpose: The number of pupils who have mastered a defined level of basic learning competencies by grade 4 (or another grade), expressed as a percentage of the total sample or of the total number of pupils in grade 4 (or the corresponding grade). This indicator seeks to measure learning achievement in respect to the minimum basic knowledge and analytical skills expected of pupils having reached that grade.

Calculation Method and Data Required: Divide the number of pupils in grade 4 (or another grade) who master a defined level of basic learning competencies by the total sample or total number of pupils in grade 4 (or the corresponding grade), and multiply by 100. Data required include the summary results from competency examinations administered to pupils in grade 4 (or another grade) or from other assessments of their learning competencies; and the total sample or total number of pupils in grade 4 (or the corresponding grade). The instruments used to measure basic learning competencies (e.g. literacy and numeracy) may include standardized examinations, sample surveys, or simply teachers' assessments of pupils' mastery of such competencies.

Interpretation: The intention of this indicator is to gather information on the basic learning competencies of pupils (as measured against national standards) towards the end of the first stage of basic education. A high value suggests that basic learning competencies are mastered by most pupils in grade 4 (or another grade). Pupils showing high learning achievement in grade 4 (or another grade) are also likely to perform effectively at higher levels of learning. This indicator of mastery of basic learning competencies should be examined in relation to enrolment and completion rates at the primary school level in order to assess the overall effectiveness of primary schooling in respect to promoting learning by individuals and to larger societal development objectives.

Quality Standards: The percentage of pupils mastering a defined level of basic learning competencies cannot exceed 100 per cent. A calculation that exceeds 100 per cent would be due to errors in either the enrolment data or the learning achievement data, both of which

should refer to pupils in the same grade – with appropriate adjustments if a sampling technique is used.

Indicator 16: Literacy rate of 15-24 year olds.

Definition and Purpose: The number of persons aged 15 to 24 who can both read and write with understanding a short simple statement on their everyday life, divided by the population in that age-group. The literacy rate of the 15 to 24 year-olds has a special significance in reflecting the recent outcomes of the basic education process. It is a summary measure of the effectiveness of the education system.

Calculation Method and Data Required: Divide the number of people aged 15 to 24 who are literate by the total population in the same age group and multiply by 100.

$$LIT_{15-24}^t = \frac{L_{15-24}^t}{P_{15-24}^t} * 100$$

Where,

LIT_{15-24}^t = Literacy Rate of persons aged 15-24 years old in year **t**

L_{15-24}^t = Literate Population aged 15-24 years old in year **t**

P_{15-24}^t = Population aged 15-24 years old in year **t**.

Interpretation: A high literacy rate among the 15-24 year olds suggests a high level of participation and retention in primary education, and its effectiveness in imparting the basic skills of reading and writing. Because persons belonging to this age-group are entering adult life, monitoring their literacy levels is important in respect to national human resources policies, as well as for tracking and forecasting progress in adult literacy.

Quality Standards: The literacy rate cannot exceed 100 per cent. It is useful to align measurements of literacy with the standard international definition given above, and to administer literacy tests on a sample basis to verify and improve the quality of literacy statistics.

Adult Literacy

Target: *Reduction of the adult illiteracy rate (the appropriate age-group to be determined in each country) to, say, one-half its 1990 level by the year 2000, with sufficient emphasis on female literacy to significantly reduce the current disparity between male and female illiteracy rates.*

This target seeks to assess the diverse policy actions and measures undertaken to develop literacy and other non-formal basic learning programmes intended to meet the learning needs of various categories of adult learners, i.e. in the population 15 years of age and above. Thus, this target concerns a range of basic literacy courses and skills development programmes with a literacy component. Particular attention should be given to how well such programmes address the specific learning needs of women, ethnic and cultural minorities, socially disadvantaged groups and other learners with special learning needs.

To what extent have the public authorities and their partners been successful in expanding basic literacy, post-literacy and continuing education opportunities for the adult population? In sustaining adult learning achievement by creating 'literate environments' and by ensuring that adequate resources and infrastructures are available to achieve these objectives? Countries are invited to make a comprehensive analysis of such learning opportunities provided by government departments, local authorities, NGOs, community organizations, the print media, as well as initiatives by the private sector. Obtaining information on basic education activities for adults is often a challenge, but can be facilitated by including adult educators in the assessment process.

In addition to examining descriptive and qualitative information on this important and diverse component of basic education, countries should analyze statistical data for indicators 17 and 18, presented below. Data on the number of illiterate adults, by gender, by age-group, by administrative regions, and sometimes by target groups, are generally obtained through population censuses and household and sample surveys, or through proxy measures, such as inferences from school enrolment data over time. The assessment exercise provides an opportunity to consider possible improvements in collecting data on literacy and in monitoring literacy programmes. In this connection, the participation of experienced literacy practitioners would be useful.

As seen above, the literacy rate of the 15-24 age-group (indicator 16) deserves particular consideration, because this group is a dynamic segment of the adult population. Changes in this group's literacy rate can serve as a proxy measure of the effectiveness of the formal schooling system over the previous decade, as well as an indicator of the expansion or contraction of the pool of illiterate adults in the long-run.

In assessing progress in this target area, countries should seek to collect and analyze data on the number of literacy centres in operation, on attendance and completion rates, as well as information on which population groups are well served or under served. Measures taken to create a 'literate environment' and to develop a 'culture of reading' will shed additional light on the extent and scope of the effort made to reach all adult learners and to sustain literacy skills.

The language issue in literacy acquisition is of paramount importance. Therefore, information about literacy acquisition in languages other than the official national language(s) will give valuable insights regarding the literacy achievement levels of significant segments of the population in many countries.

Government spending for literacy and non-formal education, family contributions, and community support are proxy measures of actual interest and commitment, and also an indication of the relevance of the literacy training offered to the demands and concerns of the target populations. Information on these aspects is important to complete the assessment of progress in promoting adult literacy.

Indicator 17: Adult literacy rate: percentage of the population aged 15+ that is literate.

Definition and Purpose: Adult literacy rate is defined as the percentage of the population aged 15 years and over who can both read and write with understanding a short simple statement on his/her everyday life. Generally, the term ‘literacy’ embraces also ‘numeracy’, the ability to make simple arithmetic calculations. The adult literacy rate reflects the accumulated achievement of primary education and adult literacy programmes in imparting basic literacy skills to the population, thereby enabling people to apply such skills in daily life and to continue learning and communicating using the written word. Literacy represents a potential for the individual’s further intellectual growth and enhanced contribution to socio-economic and cultural development of society.

Calculation Method and Data Required: Divide the number of literate adults aged 15 years and over by the corresponding age-group population and multiply the result by 100.

$$LIT_{15+}^t = \frac{L_{15+}^t}{P_{15+}^t}$$

Where,

LIT_{15+}^t = Adult Literacy Rate for persons aged 15 years and over in year t

L_{15+}^t = Adult Literate Population aged 15 years and over in year t

P_{15+}^t = Adult Population aged 15 years and over in year t

Interpretation: A high adult literacy rate suggests the existence of an effective primary education system and/or adult literacy programmes that have enabled a large proportion of the population to acquire the ability of using the written word (and making simple arithmetic calculations) in daily life. It is common practice to present and analyze literacy rates together with the absolute numbers of adult illiterates, because improvements in literacy rates may sometimes be accompanied nevertheless by increases in the illiterate population, due to the changing demographic structure.

Quality Standards: The adult literacy rate cannot exceed 100 per cent. It is important to align measurements of literacy with the standard international definition given above and, where possible, to administer literacy tests on a sample basis to verify and improve the quality of literacy statistics.

Indicator 18: Literacy Gender Parity Index: ratio of female to male literacy rates.

Definition and Purpose: The ratio of the female to male adult literacy rates measures progress towards gender equity in literacy and the level of learning opportunities available for women in relation to those available to men. It serves also as a significant indicator of the empowerment of women in society.

Calculation Method and Data Required: Divide the female literacy rate by the male literacy rate.

$$LGPI_{15+}^t = \frac{FLIT_{15+}^t}{MLIT_{15+}^t}$$

Where,

LGPI₁₅₊^t = Literacy gender parity index

FLIT₁₅₊^t = Female Adult Literacy rate for persons aged 15 years and over in year **t**

MLIT₁₅₊^t = Male Adult Literacy rate for persons aged 15 years and over in year **t**

Interpretation: When the literacy gender parity index shows a value equal to 1, female literacy and male literacy rates are equal. A value less than 1 indicates that proportionately fewer women than men have basic literacy skills, and conversely, a value exceeding 1 indicates that proportionately fewer men have basic literacy skills. Note that the value of the gender parity index may be affected by differences in the life expectancy between men and women, especially for the older age-groups in countries where women on average live longer than men. In such cases, one should derive literacy gender parity indices by age groups.

Quality Standards: Besides aligning measurements of literacy with the standard international definition given above and administering literacy tests on a sample basis to verify and improve the quality of literacy statistics, one must ensure that the literacy rates for males and females used in computing this indicator refer to the same population strata (e.g., urban, rural, age-group etc).

Training in Essential Skills

Targets: *Expansion of provisions of basic education and training in other essential skills required by youth and adults, with programme effectiveness assessed in terms of behavioral changes and impacts on health, employment and productivity.*

This target addresses a wide range of learning activities at the basic level with the aim of imparting knowledge, skills and attitudes that are necessary for young people and adults in their everyday lives, in their work, and in order to improve their quality of life. The scope of this target extends beyond the provision of basic education and training to cover also programme effectiveness and impact as seen in behavioural change and improvements in health, employment rates and productivity, etc.

Some of these programmes seek to equip individual learners with practical skills and know-how, while others aim to empower learners by raising their awareness and knowledge of their rights and duties as citizens, workers and parents. Programmes may be sponsored by government departments, local communities, voluntary associations, religious organizations, public and private employers, etc.

Countries are invited to review the progress made during the 1990s in the provision of basic education and training in 'life skills' for adolescents and adults, both in-school and out-of-school, in respect to the expansion and diversification of such learning opportunities. The assessment should take into account the territorial distribution of such programmes, the adequacy of the skills training offered to the needs of the learners, the population groups targeted and their participation rates by gender and age-groups.

Another line of inquiry concerns the policy and management context for these programmes. In what way do the public authorities encourage, monitor and regulate them? Which government departments organize or fund such education and training activities? Who are the principal sponsors and providers? How do these activities fit into the country's education and training system?

Finally, the assessment should seek to appraise the quality, effectiveness and outcomes of such programmes. Indications of quality may be obtained by analyzing information on the educational level and training of the instructors, on the instructional materials, and on the teaching methods used (e.g. 'hands-on' experience or lectures or demonstrations, etc.). The effectiveness and outcomes of these programmes may be evident through certain proxy indicators, such as the attendance and completion rates (which often reflect how the learners consider the programme's relevance to their needs), the success of 'graduates' in obtaining employment or increasing their income, and behavioural changes evident in better health care, child care, nutrition, etc. The social impact of such programmes, though difficult to measure, should not be neglected. Information from programme evaluation reports and case studies, as well as the perceptions of various stakeholders (e.g. programme sponsors, local officials, etc.) may provide elements for analysis.

Education for Better Living

Target: *Increased acquisition by individuals and families of the knowledge, skills and values required for better living and sound and sustainable development, made available through all education channels including the mass media, other forms of modern and traditional communication, and social action, with effectiveness assessed in terms of behavioural change.*

Education has now clearly become a lifelong process, with people learning at any age and at any place as needs and opportunities arise. Some learning opportunities outside the formal school are rigorously structured but employ 'non-formal' means of delivering instruction. Others are relatively unstructured and 'non-formal' but provide meaningful educational experiences. Some provide certificates of equivalence with formal schooling, while others do not. Some organize learners into small groups or use individual

teaching/learning situations; still others make use of modern telecommunications and computing technologies to reach large numbers of learners.

In practice, it may be difficult to distinguish basic education activities that link with this target dimension from those that develop essential skills (see section above). However, the emphasis here is on the use of the mass media and modern channels of communication *for educational purposes* -- although this is usually not their primary function. Educational activities constituting this component of basic education are often intended to reinforce and complement formal schooling and out-of-school (non-formal) education programmes, or to reach the general public. For example, educational programmes and messages broadcast through radio and television may be used to enhance learning in the classroom, reinforce local HIV/AIDS prevention campaigns, and/or to reach people of all ages in their homes. Newspapers and magazines, too, often convey educational messages into the classroom and into the home.

A review of progress in education for better living might examine significant changes since 1990 in the following:

1. Use of the electronic and print media for educational purposes:

- * Educational broadcasting (radio, television) used in schools;
- * Educational broadcasting used in out-of-school programmes;
- * Educational broadcasting used to enhance the skills of teachers in service;
- * Educational programmes broadcast for the general public;
- * Public service announcements through radio and television;
- * Geographical diffusion of broadcasts, urban/rural, by region;
- * Newspapers and magazines with education columns, features or supplements;
- * Libraries, museums, book fairs used actively to promote and support basic education;
- * Street theatre and other forms of entertainment that convey educational messages;
- * Social mobilization campaigns to increase public awareness and knowledge, e.g. child vaccination, environmental protection, health hazards,

2. Policy, management and funding

- * Official policy and measures for the use of the media for educational purposes;
- * Government departments using the media for basic education;
- * Other sponsors of education programmes through the media;
- * Government regulation and monitoring of such programmes;
- * Public and private funding for these programmes.

3. Quality, effectiveness and outcomes

- * Education and pedagogical training of programme planners;
- * Cooperation between education and media professionals;
- * Responses (feedback) and demand from teachers and school heads;
- * Responses from media listeners, viewers and readers;
- * Demand for more broadcasts or articles with education content.
- * Behaviour patterns of target audiences, as evidenced in better health practices, child care, family planning, use of public services, participation in social organizations, etc.

In order to obtain information on this component of basic education, the assessment process should involve persons and institutions involved in these activities.

Part III: Annexes

Annex A

GLOSSARY

Basic Education refers to a whole range of educational activities that take place in different settings and that aim to meet basic learning needs as defined in the World Declaration on Education for All (Jomtien, Thailand, 1990). It thus comprises both formal schooling (primary and sometimes lower secondary) as well as a wide variety of non-formal and informal public and private educational activities offered to meet the defined basic learning needs of groups of people of all ages.

Basic Learning Needs comprise both essential learning tools (such as literacy, oral expression, numeracy, and problem solving) and the basic learning content (such as the knowledge, skills, values, and attitudes) required by human beings to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning.

Coefficient of efficiency is a measure of the internal efficiency of an education system obtained by dividing the ideal number of pupil-years required for a pupil cohort to complete a level or cycle of education (e.g. the primary level) by the estimated total number of pupil-years actually spent by the same pupil cohort. The reciprocal of the coefficient of efficiency is the **input-output ratio**.

Compulsory Education refers to the number of years or the age-span during which children and youth are legally obliged to attend school.

Course is a planned series of learning experiences in a particular subject matter or set of skills, usually offered by an educational or training institution or programme for one or more pupils.

Drop-out Rate is the percentage of pupils who drop out from a given grade or cycle or level of education in a given school-year.

Early Childhood Development (ECD) programmes offer a structured and purposeful set of learning activities either in a formal institution (pre-school) or as part of a non-formal childcare programme. ECD programmes generally focus on children from three years of age and include organized learning activities that constitute not less than 30% of the overall programme of care. For purposes of the Assessment, ECD programmes should involve children for at least two hours per day and 100 days in a year. This would include, for instance, all pre-school programmes that conform to the ISCED Level 0 definition.¹

Educational Institution has as its sole or main purpose the provision of education. Such institutions are normally accredited, or sanctioned, by some public authority.

Educational Personnel is a broad term covering three categories. *Teaching staff* are those persons who participate directly in instructing pupils (see Teaching Staff below). *Other pedagogical and administrative personnel* include headmasters, school administrators, supervisors, counsellors, school health personnel, librarians, curriculum developers, as well as educational administrators at the local, regional and central levels. *Support personnel* include clerical personnel, building operations and maintenance staff, security personnel, transportation workers, catering staff etc.

Educational Programme is a set of organized and purposeful learning experiences with a minimum duration of one school or academic year, usually offered in an educational institution.

Education System is the overall network of institutions and programmes through which education of all types and all levels is provided to the population.

¹ ISCED = International Standard Classification of Education

Expenditures: *Capital expenditures* are for assets that last longer than one year. They include outlays for construction, renovation and major repairs of buildings and expenditures for new or replacements of heavy equipment and vehicles. *Current expenditures* are for goods and services consumed within the current year and which should be renewed if there is need for them the following year. They include emoluments such as gross salaries, plus non-salary compensation (fringe benefits). *Gross salary* means the total salary earned by employees, including any bonuses, extra allowances etc, before subtracting any taxes on employee contributions for pensions, social security or other purposes. *Non-salary compensation* includes expenditure by employers and/or public authorities for retirement programmes, health care or health insurance, unemployment compensation, disability insurance and other forms of social insurance, non-cash supplements (e.g. free or subsidized housing), free or subsidized child care and other such fringe benefits. *Other current expenditures* include those for contracted and purchased services and goods, such as: school books and other teaching materials, exercise books, and other supplies directly related to instructional activities; welfare services such as contracted and purchased services from outside providers related to school canteens, boarding schools, meals for pupils, school transport, medical services, etc; items of equipment not classified as capital, minor repairs, fuel, electricity, telecommunications, travel, insurance, services contracted from outside providers for the maintenance of school buildings, rents paid for school buildings and other facilities, as well as property taxes that educational institutions are required to pay in some countries, along with adjustments for changes (positive or negative) in fund balances in cases where the total funds received are not precisely equal to the total expenditures because the institutions have either added to or reduced their fund balances during the period in question.

Formal Education refers to education provided in the system of schools, colleges, universities and other formal educational institutions that normally constitutes a continuous 'ladder' of full-time education for children and young people, generally beginning at age five, six or seven and continuing up to 20 or 25 years of age. *Formal basic education* usually comprises the primary school grades, but may include also additional grades (e.g. lower secondary schooling) that are considered "basic". N.B. For purposes of the Assessment exercise, the term **Formal Basic Education** is used to distinguish cases where basic education in the formal school system is considered to extend beyond primary schooling.

Grade is a stage of instruction usually covered in one school year.

Graduate is a pupil or student who successfully completes a level of education, such as primary education.

Gross Enrolment Ratio (GER) is the total enrolment of pupils in a grade or cycle or level of education, regardless of age, expressed as percentage of the corresponding eligible official age-group population in a given school-year.

Literacy is the ability to read and write with understanding a simple statement related to one's daily life. It involves a continuum of reading and writing skills, and often includes also basic arithmetic skills (*numeracy*).

Literacy Rate is the number of literate adults expressed as a percentage of the total adult population, 15 years of age or older.

Net enrolment ratio (NER) is the number of pupils in the official school-age group expressed as a percentage of the total population in that age-group.

New Entrant is a pupil who enters primary education for the first time.

Non-formal education refers to any organized and sustained educational activities that do not correspond exactly to the above definition of formal education. Non-formal education may take place both within and outside educational institutions, and may cater to persons of all ages. Depending on country contexts, it may cover educational programmes to impart adult literacy, basic education for out-of-school children, life-skills, work-skills, and general culture. Non-formal education programmes do not necessarily follow the 'ladder' system, may have varying durations, and may or may not confer certification of the learning achieved.

Out-of-school children are those in the official school-age group who are not enrolled in school.

Pre-primary education (ISCED Level 0) refers to programmes at the initial stage of organized instruction, which are designed mainly to introduce groups of very young children, usually from age three or so, to a school-type environment, i.e. to provide a bridge between the home and the school. Such programmes are variously referred to as infant education, nursery education, pre-school education, or early childhood education.

See also early childhood development programmes. In determining the boundary between simple childcare and pre-primary education or between pre-primary and primary education, the following criteria may be taken into account: the educational character of the programme; whether it is based at a school or specially equipped centre; staff qualifications; and the age-range of the children catered for. Pre-primary education generally aims at engaging groups of children in activities that encourage autonomy and enhance motor, cognitive and social skills, e.g. through stories, games, problem-solving, discussion, and building trustful relationships with other children and adults. Such programmes need to be distinguished from simple child-care programmes and day nurseries. A programme cannot be considered to belong to level 0 if it is aimed at children aged two years or less. The upper age limit depends on the entry age for primary education.

Primary education (ISCED Level 1), sometimes called *elementary education*, refers to educational programmes that are normally designed on a unit or project basis to give pupils a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music. In some cases religious instruction is also featured. These subjects serve to develop pupils' ability to obtain and use information the children need about their home, community, country, etc.

The entry age for primary education usually varies between five and seven years. In principle, this level covers about six years of full-time schooling. In most countries, instruction in all subjects at this level is provided by a single teacher, whereas at Level 2 (lower secondary education), pupils may have several teachers, each providing instruction in a specific subject area. In countries with compulsory education laws, primary education generally constitutes the first (and sometimes only) cycle of compulsory education.

For countries where formal basic education extends up to eight years, which is often the duration of compulsory education, only the first stage should, for comparison reasons, be included in Level 1. Normally, Level 1 should include only the first 6 primary years, so the remaining 2 or 3 years of basic education would be considered in Level 2. However, this distinction should be applied flexibly since it is recognized that while the allocation of pupils to Levels 1 and 2 is relatively straightforward, it is not so easy to allocate teaching staff, expenditures, etc. by level. See also 'Second Stage of Basic Education'.

Promotion rate is the percentage of pupils promoted to the next grade in the following school year. Some countries practice automatic promotion, meaning that all pupils are promoted, regardless of their scholastic achievement.

Public Educational Institutions are controlled, managed and operated by a public education authority or government agency or by a governing body (council, board, committee) most of whose members are either appointed by a public authority or elected by public vote. Most educational institutions are public, since they fall under the jurisdiction of the public education authorities. Various other public authorities may also be involved, such as the government services responsible for health, job training, labour, justice, defense, social services, etc.

Whereas **Private Educational Institutions** are not operated by a public authority, but rather are controlled and managed by a private body or have a governing board most of whose members are not selected by a public agency or elected by public vote. Private educational institutions may be operated by a non-governmental organization or association, a religious body, a special interest group, a foundation, or a business enterprise, on either a profit or non-profit basis.

Pupil is a young person who is enrolled in an educational programme. For purposes of the Assessment, 'pupil' refers to a child enrolled in primary school, whereas children or adults enrolled at more advanced levels are **students**.

Pupil-year: is a non-monetary measure of educational inputs or resources. One pupil-year denotes the resources spent to maintain a pupil in school for one year.

Pupil Cohort is a group of pupils who enter the first grade of a level of education in the same school year and subsequently experience promotion, repetition, drop-out or successful completion, each in his or her own way.

Pupil/Teacher Ratio (PTR) is the average number of pupils per teacher in a grade or cycle or level of education in a given school-year. In calculating pupil/teacher ratios, other educational personnel such as administrators and support staff are not taken into account.

Repeater is a pupil who is enrolled in the same grade for a second (or further) year.

Repetition Rate is the percentage of pupils who are enrolled in the same grade in the following school year as in the current school year.

Survival Rate is the percentage of a pupil cohort that enters together in the first grade of primary education and that reaches a given grade (e.g. Grade 5) or the final grade of an education cycle either with or without repeating a grade.

Second Stage of Basic Education, more commonly called **Lower Secondary Education (ISCED Level 2)** is typically designed to complete the development of basic skills and knowledge. In many countries, the educational aim is to lay the foundation for lifelong learning and individual development. The programmes at this level are usually on a subject-oriented pattern, requiring specialized teachers for each subject area. The end of this level often coincides with the end of compulsory education.

Special Needs Education refers to educational interventions and other support designed to address special learning needs. This term has come to replace the older term 'special education', which referred mainly to the education of children with disabilities, usually in special schools or institutions. Moreover, the concept of 'children with special educational needs' now extends beyond those who have physical or other disabilities to cover also pupils who are failing in school for a wide variety of other reasons.

School-age population: number of children in the officially defined primary school age-group, whether enrolled in school or not.

Teachers are persons who, in their professional capacity, guide and direct pupils' learning experiences in gaining knowledge, attitudes and skills that are stipulated by a defined curriculum programme. A *full-time teacher* is a person engaged in teaching for a specified number of hours per week according to official regulations in the country. A *part-time teacher* is one whose working load and associated financial remuneration are less than that of a full-time teacher.

Universal Primary Education (UPE) means full enrolment of all children in the primary school age-group, i.e. 100% net enrolment ratio.

ILLUSTRATIVE DATA SHEETS

TABLE 1: Indicator 1 - Gross enrolment ratio in early childhood development programmes ¹

Country: Year:

Col.1	Col.2	Col.3	Col.4	Col.5	Col.6	Col.7=Col.3/Col6	Col.8
Add Province		Enrolment			Official age-group ² population (or 3-5 years)	GER (Gross enrolment ratio)	Gender Parity Index
		Total	Pre-schools	Others ¹			
NATIONAL (The whole country)	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 1	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 2	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 3	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 4	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 5	TOTAL (MF)						
	Male (M)						
	Female (F)						
Urban areas	TOTAL (MF)						
	Male (M)						
	Female (F)						
Rural areas	TOTAL (MF)						
	Male (M)						
	Female (F)						

1. By 'Early childhood development programmes' is meant here all organized educational programmes for young children aged 3 to 5 years old (or according to the official age-group in a given country). The data on enrolment should include those in registered pre-schools (or pre-primary schools) and those in other similar organized educational institutions/programmes.

2. Please specify official age-group for early childhood development programmes, if different from 3-5 years old:

Starting age: Ending age:

Data sources:

TABLE 2: Indicator 2 - Percentage of primary Grade 1 pupils having attended some form of organised early childhood development programme during at least one year (or one enrolment period) ¹

Country:

Year:

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9=Col.6/Col.3	Col. 10=Col.7/Col.4	Col. 11=Col.8/Col.5	Col. 12
Add Province		Enrolment in Grade 1			No. with ECD experience			Percentage with ECD experience			Gender Parity Index
		Total	Public	Private ²	Total	Public	Private ²	Total	Public	Private ²	GER
NATIONAL (The whole country)	TOTAL (MF)										
	Male (M)										
	Female (F)										
Province 1	TOTAL (MF)										
	Male (M)										
	Female (F)										
Province 2	TOTAL (MF)										
	Male (M)										
	Female (F)										
Province 3	TOTAL (MF)										
	Male (M)										
	Female (F)										
Province 4	TOTAL (MF)										
	Male (M)										
	Female (F)										
Province 5	TOTAL (MF)										
	Male (M)										
	Female (F)										
Urban areas	TOTAL (MF)										
	Male (M)										
	Female (F)										
Rural areas	TOTAL (MF)										
	Male (M)										
	Female (F)										

1. By 'Early childhood development programmes' is meant here all organized educational programmes for young children aged 3 to 5 years old (or according to the official age-group in a given country). The data on enrolment should include those in registered pre-schools (or pre-primary schools) and those in other similar organized educational institutions/programmes.

2. By 'Private' is meant here all educational institutions not operated by a public authority, whether or not it receives financial support from such authorities.

Data sources:

TABLE 3: Indicators 3 and 4 - Apparent(Gross) and net intake rates in primary education

Country:

Year:

Col.1	Col.2	Col.3	Col.4	Col.5	Col.6	Col.7	Col.8	Col.9	Col.10=Col.3/Col.9	Col.11=Col.6/Col.9	Col.12	
Add Province	New entrants of all ages			New entrants of primary school entrance age ²			School entrance age population	AIR (Apparent intake rate)	NIR (Net intake rate)	Gender Parity Index		
	Total	Public	Private ¹	Total	Public	Private ¹				AIR	NIR	
NATIONAL (The whole country)	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 1	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 2	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 3	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 4	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 5	TOTAL (MF)											
	Male (M)											
	Female (F)											
Urban areas	TOTAL (MF)											
	Male (M)											
	Female (F)											
Rural areas	TOTAL (MF)											
	Male (M)											
	Female (F)											

1. By 'Private' is meant here all educational institutions not operated by a public authority, whether or not they receive financial support from such authorities.

2. Official entrance age to primary education :

Data sources :

TABLE 4: Indicators 5 and 6 - Gross and net enrolment ratios in primary education

Country:

Year:

Col.1	Col.2	Col.3	Col.4	Col.5	Col.6	Col.7	Col.8	Col.9	Col.10=Col.3/Col.9	Col.11=Col.6/Col.9	Col.12	
Add Province	Total enrolment (all ages)			Enrolment of official primary school age			Official school-age population ²	GER (Gross enrolment ratio)	NER (Net enrolment ratio)	Gender Parity Index		
	Total	Public	Private ¹	Total	Public	Private ¹				GER	NER	
NATIONAL (The whole country)	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 1	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 2	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 3	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 4	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 5	TOTAL (MF)											
	Male (M)											
	Female (F)											
Urban areas	TOTAL (MF)											
	Male (M)											
	Female (F)											
Rural areas	TOTAL (MF)											
	Male (M)											
	Female (F)											

1. By 'Private' is meant here all educational institutions not operated by a public authority, whether or not they receive financial support from such authorities.

2. Official primary school age : Starting age : Ending age :

Data sources :

TABLE 5: Indicators 7 and 8 - Public expenditure on primary education as percentage of total public expenditure on education (all levels); and Public current expenditure on primary education per pupil as percentage of Gross National Product (GNP) per capita

Country:

<i>Col.1</i>	<i>Col.2</i>	<i>Col.3</i>	<i>Col.4</i>	<i>Col.5</i>	<i>Col.6</i>	<i>Col.7=Col.2÷Col.3</i>	<i>Col.8=Col.3÷Col.5</i>	<i>Col.9=(Col.2÷Col.4)/(Col.5÷Col.6)</i>
Year	Public current expenditure on primary education	Total public current expenditure on education	Total enrolment in primary education	Gross national product (GNP)	Total Population	Public current exp. on primary ed. as % of total public current exp. on ed.	Public current exp. on primary ed. as % of GNP	Public current exp. on primary ed. per pupil as % of GNP per capita
1990								
1991								
1992								
1993								
1994								
1995								
1996								
1997								
1998								
1999								
2000 *								

Note: Data should refer to actual expenditure in national currency. Please indicate by means of a footnote if otherwise.

* Forecast

Data sources :

TABLE 6 : Indicators 9 and 10 - Percentage of primary school teachers having the required academic qualifications; and Percentage of primary school teachers who are certified to teach according to national standards ^{1,2}

Country: Year:

Col.1	Col.2	Col.3	Col.4	Col.5	Col.6=Col.4/Col.3	Col.7=Col.5/Col.3	Col.8
Add Province		Number of primary school teachers			Percentage of primary school teachers		
		Total	With academic qualification	Certified to teach	With academic qualification	Certified to teach	Gender Parity Index
NATIONAL (The whole country)	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 1	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 2	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 3	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 4	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 5	TOTAL (MF)						
	Male (M)						
	Female (F)						
Urban areas	TOTAL (MF)						
	Male (M)						
	Female (F)						
Rural areas	TOTAL (MF)						
	Male (M)						
	Female (F)						

1. Please specify national standard requirements for primary school teachers in terms of :
- (a) Minimum academic qualifications:
- (b) Certification to teach :

2. To the extent possible, the same table may be produced separately for public and private schools.

Data sources :

TABLE 7 : Indicators 11 - Pupil-teacher ratios in primary education

Country:

Year:

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8=Col.2/Col.5	Col. 9=Col.3/Col.6	Col. 10=Col.4/Col.7
Add Province	Total enrolment			Total number of teachers			Pupil-teacher ratios		
	Total	Public	Private ¹	Total	Public	Private ¹	Total	Public	Private ¹
NATIONAL (The whole country)									
Province 1									
Province 2									
Province 3									
Province 4									
Province 5									
Urban areas									
Rural areas									

1. By 'Private' is meant here all educational institutions not operated by a public authority, whether or not they receive financial support from such authorities.

Data sources:

TABLE 8 : Indicator 12 - Repetition rate in primary education by grade ^{1, 2, 3}

Country:

Year:

Col.1	Col.2	Col.3	Col.4	Col.5	Col.6	Col.7	Col.8	Col.9	Col.10	Col.11	Col.12	Col.13
Add Province		Grade									Average grades 1 to 5	Gender Parity Index
		1	2	3	4	5	6	7	8	9		
NATIONAL (The whole country)	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 1	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 2	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 3	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 4	TOTAL (MF)											
	Male (M)											
	Female (F)											
Province 5	TOTAL (MF)											
	Male (M)											
	Female (F)											
Urban areas	TOTAL (MF)											
	Male (M)											
	Female (F)											
Rural areas	TOTAL (MF)											
	Male (M)											
	Female (F)											

1. Data in this table should be derived using the cohort pupil flow model (see note in Annex on cohort analysis and the attached Excel file: COHORT.XLS).

2. If data in this table cover basic education, please specify below :

Primary education extends from grade to grade

Basic education extends from grade to grade

3. To the extent possible, the same table may be produced separately for public and private schools.

Data sources :

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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TABLE 9 : Indicators 13 and 14 - Survival rate to Grade 5 and coefficient of efficiency ¹

Country: Year:

Col.1	Col.2	Col.3	Col.4	Col.5	Col.6	Col.7	Col.8	Col.9	Col.10	Col.11	Col.12	Col.13
Add Province	Survival rate to Grade 5			Coefficient of efficiency to Grade 5			Coefficient of efficiency in primary education			Gender Parity Index		
	Both sexes (MF)	Male (M)	Female (F)	Both sexes (MF)	Male (M)	Female (F)	Both sexes (MF)	Male (M)	Female (F)	Survival rate to grade 5	Coef. of efficiency at Grade 5	Coef. of efficiency in primary educ.
NATIONAL (The whole country)												
Province 1												
Province 2												
Province 3												
Province 4												
Province 5												
Urban areas												
Rural areas												

1. Data in this table should be derived using the cohort pupil flow model (see note in Annex on cohort analysis and the attached Excel file: TEMPLATE2.XLS).

2. To the extent possible, the same table may be produced separately for public and private schools.

Data sources :

TABLE 10 : Indicator 15 - Percentage of pupils having reached at least grade 4 of primary schooling who master a set of nationally defined basic learning competencies^{1, 2, 3}

Country: Year:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8=col3/col7	Col 9=Col4/Col7	Col 10=Col5/Col7	Col 11=Col6/Col7	Achievement Gender Parity Index						
Add Province		Pupils of grade 4 (or another grade) who master basic learning competencies				Enrolment in Grade 4 (or corresponding grade)	Percentage of pupils who master basic learning competencies				Achievement Gender Parity Index						
		Reading/ Writing	Mathematics	Life skills/ others	A.C.S. ⁴		Reading/ Writing	Mathematics	Life skills/ others	A.C.S. ⁴	Reading / Writing	Mathem a-tics	Life skills/	A.C.S. ⁴			
NATIONAL (The whole country)	TOTAL (MF)																
	Male (M)																
	Female (F)																
Province 1	TOTAL (MF)																
	Male (M)																
	Female (F)																
Province 2	TOTAL (MF)																
	Male (M)																
	Female (F)																
Province 3	TOTAL (MF)																
	Male (M)																
	Female (F)																
Province 4	TOTAL (MF)																
	Male (M)																
	Female (F)																
Province 5	TOTAL (MF)																
	Male (M)																
	Female (F)																
Urban areas	TOTAL (MF)																
	Male (M)																
	Female (F)																
Rural areas	TOTAL (MF)																
	Male (M)																
	Female (F)																

1. This data sheet should show the latest results of learning achievement tests. In the absence of such tests, please show the number of pupils passing school examinations by subject in columns 3, 4 and 5 under respectively 'Reading/w riting', 'Mathematics' and 'Life skills/others', and the overall number of pupils passing the school examinations, if any, under column 6: 'A.C.S.'

2. Please specify the national norms for :

Reading/Writing:

Mathematics :

Life skills/others:

(Please specify subject if no life skills)

3. A.C.S. refers to 'Any composite score' i.e. pupils achieving an overall passing score for test results in columns 3, 4 and 5.

4. To the extent possible, the same table may be produced separately for public and private schools.

Data Sources:

TABLE 11 : Indicators 16, 17 and 18 - Literacy rates of population aged 15-24 and 15 years old and over, and Literacy Gender

Country:

Year:

Col.1	Col.2	Col.3	Col.4	Col.5	Col.6	Col.7=Col.5/Col.3	Col.8=Col.6/Col.4
Add Province		Population		Number of literates		Literacy rate	
		15+	15-24	15+	15-24	15+	15-24
NATIONAL (The whole country)	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 1	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 2	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 3	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 4	TOTAL (MF)						
	Male (M)						
	Female (F)						
Province 5	TOTAL (MF)						
	Male (M)						
	Female (F)						
Urban areas	TOTAL (MF)						
	Male (M)						
	Female (F)						
Rural areas	TOTAL (MF)						
	Male (M)						
	Female (F)						

1. Definition of literacy used :

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Data Sources :

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USER GUIDE
EXCEL WORKSHEETS AND TEMPLATES

To facilitate compilation of data and calculation of the EFA core indicators, three Excel files are provided in the diskette accompanying the Technical Guidelines:

1. EFATABS.XLS (contains 11 worksheets for compiling the 18 core EFA indicators)		
Worksheets	Indicator N°	Indicator
ECD	1	Gross enrolment ratio in Early Childhood Development (ECD).
G1ECD	2	Percentage of new entrants to grade 1 with ECD experience.
AIR-NIR	3, 4	Intake rates (AIR and NIR) in primary education.
GER-NER	5, 6	Enrolment ratios (GER and NER) in primary education.
EXP	7	a) Public current expenditure on primary education as a % of GNP; b) Public current expenditure per pupil on primary education as a % of GNP per capita; and
	8	Public current expenditure on primary education as a % of total public current expenditure on education.
TEACHERS	9	% of primary teachers with required academic qualifications;
P/T RATIO	10	% of primary teachers who are certified to teach.
	11	Pupil/teacher ratio in primary education.
REPETITION	12	Repetition rates by grade in primary education (*)
SURVIVAL	13	Survival rate to grade 5;
	14	Coefficient of efficiency at grade 5 and at the final grade (*)
ACHIEVEMENT	15	% of pupils who master basic learning competencies
LITERACY	16, 17, 18	Adult literacy rates: 15-24 age-group and adults 15 years and over; Literacy Gender Parity Index (GPI) **
* Calculated in the linked file: COHORT.XLS.		
** On worksheets that present data by gender, automatic calculations of the Gender Parity Index are included in the last column on the right.		

	Indicator N°	Indicators
2. ACCESS.XLS	1, 3, 4, 5, 6	ECD(GER); AIR; NIR; GER; NER; ASER; % over-aged and under-aged pupils; un-enrolled school-age population
3. COHORT.XLS	12, 13, 14	Promotion rate; Repetition rate; Drop-out rate; Survival rate; Coefficient of efficiency; years input per graduate

The ACCESS.XLS and COHORT.XLS files enable the computation of many core EFA indicators in the EFATABS datasheets, as well as some additional indicators. To the extent possible, ACCESS.XLS should be used for deriving indicators No. 1, 3, 4, 5, 6, which can then be copied onto the corresponding datasheets in EFATABS. Indicators 12, 13, 14 are computed by means of the reconstructed cohort pupil flow model in the COHORT.XLS file, which automatically records the resulting national totals in the REPETITION and SURVIVAL datasheets. However, the resulting totals by provinces/districts and urban/rural areas will need to be copied manually on to these datasheets. **When opening each file, please read carefully the worksheet "GUIDE" containing users' instructions.**

USER GUIDE: GENERAL INSTRUCTIONS

All the worksheets have 3 colour zones. The *white* cells are for data entry. The *blue* cells do not require data entry nor calculations. The *yellow* cells have embedded formulae that automatically calculate the corresponding indicators. One should avoid changing the formulae in the yellow cells as they correspond to the standard calculation method given in the technical specifications. However, if any such changes are required, please explain at the bottom of the worksheet or on an attached sheet or document the reasons for the changes and the new formulae used.

General operations

As a precautionary measure, it is strongly advised to begin by making a back-up copy of the diskette and to copy the templates and data sheets onto a hard disk.

Step 1. Open the files: EFATABS.XLS or ACCESS.XLS or COHORT.XLS. Select 'Activate macros' in the first dialogue box and 'No' when asked in the second dialogue box about 'Read only'. If a third dialogue box appears, indicating 'File not found', click on 'Cancel'. **Read carefully the user guide before starting operations.**

Step 2. Enter the country name

Step 3. Specify the reference year

Step 4. Before entering the data, if spaces for more provinces or districts (or states, regions, or other sub-national administrative units) are required, click on the button "Add Province" as many times as the number of provinces/districts to be added. These additional provinces/districts will be added as 'province 6' and so on in each worksheet in EFATABS, and will appear as additional worksheets (Province 1, 2,) in ACCESS and COHORT. Specify the name of each province/district, which can then be copied onto the different worksheets. To delete provinces/districts, simply follow standard EXCEL procedures by highlighting the rows or worksheets to be deleted, click the right button on the mouse and then click on 'Delete'.

Step 5: Enter the required data in the white cells. The indicators will be calculated automatically and shown in the appropriate cells. Move the cursor down (in ACCESS) or to the right (in COHORT) to view some illustrative graphics based on the calculated indicators. Design and include other graphics as appropriate.

Step 6: **Read attentively the explanatory note below each table** (EFATABS).

Step 7: Specify in the reserved white cells under each table the source(s) of data, giving details regarding institutions, publications, census/surveys, and year of publication or survey. Attach footnotes and additional sheets or documents if necessary.

USER GUIDE -- ACCESS.XLS

The main worksheet in ACCESS.XLS enables computations of the core EFA indicators of access to, and participation in, early childhood development (ECD) programmes and primary and/or “formal basic education”. (N.B. **Formal basic education** is a term intended to cover those cases where *basic education* is considered to extend beyond the primary grades in the formal school system. For example, in a 6+3+3 school system, *basic education* might be considered to include the 6 primary grades plus the 3 lower secondary grades. In this case, one would fill data for the nine grades and use the total row for “Formal basic education”).

The worksheet contains three component modules:

The *first module* allows for age-group specifications and shows the summary results in terms of core EFA indicators for early childhood development (ECD) programmes and primary (or formal basic) education. Enter in this part the country name, reference year, and the official starting and ending age for each of the specified education levels or programmes. Following this, be sure to add provinces/districts, if necessary, and name them. However, the key indicators will be automatically computed only when the required data have been entered in the second module.

The *second module* focuses on population and enrolment data by single years of age, by grade, and by gender. Be sure to enter the data accordingly. Two options are possible, depending on the availability of data on enrolment by age and by grade. Option 1: if these data are available and entered accordingly, this will enable the computation of not only the core EFA indicators, but also supplementary indicators such as age-specific enrolment ratios; un-enrolled school-age population; percentage of over-aged and under-aged pupils by grade; gross and net enrolment ratios by grade, etc. The calculations of the percentage of over-aged and under-aged pupils by grade are based on each country's official school entry age, which must be specified (in the first module) before beginning data entry. Countries that have an official primary school entry age other than 5, 6 or 7 will have to adapt the embedded formulae to their official entry age. Please note that the upper age limit used in the data tables is 18+.

Option 2: If data on enrolment by single years of age are not available, please complete as appropriate the row "Total primary enrolment by grade" and/or "Total formal basic education enrolment by grade" at the bottom of each table. In this case, only data on total enrolment and the corresponding school-age population will be needed to derive a single gross enrolment ratio for the entire primary (or formal basic education) cycle. Other key-indicators cannot be computed.

Once all the data are entered, click on the button "DOUBLE-CHECK" to verify that the Total figures shown (for both sexes) equal the sum of the figures shown for males and females. Any errors will appear in red figures; after correcting the figures, check again to make sure that the totals are accurate (appear in blue).

The *third module* presents some illustrative graphs: apparent and net intake rates by gender; gross and net enrolment ratios by gender; percentage of over-aged and under-aged primary enrolment by gender; un-enrolled school-age population by gender.

IMPORTANT NOTES:

- When starting to use the button 'ADD PROVINCE', the "count" must be 1 (one).
- Click on "Help" anytime to access the user guide.
- To return to the worksheet, click on "BACK" at the top of this Guide.

USER GUIDE : COHORT.XLS

The main worksheet in COHORT.XLS enables computations of the core EFA indicators concerning the internal efficiency of primary (or formal basic) education, such as repetition and survival rates. The worksheet contains three component modules:

The *first module* allows for data entry for two consecutive years. After specifying the country name and the reference year (i.e. the first of the two consecutive years for which data are available), enter data on enrolment by grade for the two consecutive years, then data on repeaters by grade for the second year only. These data are to be entered for total (both sexes) and for girls and boys separately. If data on the number of graduates in the first year are available, enter them in cells O17, O18 and O19; otherwise enter zero. This template provides for a maximum of ten grades. If data are available for the number of graduates from primary education only, do not enter data for grades beyond primary education, or simply enter zero. In the case of formal basic education (i.e. including grades beyond primary education), the data on graduates in cells O17, O18 and O19 should refer to the number of graduates from the entire formal basic education cycle.

Once all the data are entered in the first module, click on the button "DOUBLE-CHECK" to verify that the Total figures shown (for both sexes) equal the sum of the figures shown for males and females. Any errors will appear in red figures; after correcting the figures, check again to make sure that the totals are accurate (appear in blue).

The *second module*, on the screen right below the first module, shows the main indicators that have been automatically computed per grade, including promotion rates, repetition rates, drop-out rates, survival rates, estimated number of pupil-years, the coefficient of efficiency, and years input per graduate. Illustrative graphical presentations of these indicators can be seen on the screen to the right of these indicators.

The *third module*, on the screen further below, gives the reconstructed pupil flow models (separately for males, females, and both sexes together), which depict the simulated flow of an initial cohort of 1,000 pupils on a year-by-year and grade-by-grade basis. These flow models enable the automatic computation of the main indicators in the second module.

IMPORTANT NOTES:

- When starting to use the button "ADD PROVINCE", the "count" must be 1 (one).
- Click on "HELP" anytime to access the user guide.
- To return to the worksheet, click on "BACK" on top of this Guide.

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ASSESSING INTERNAL EFFICIENCY BY MEANS OF COHORT ANALYSIS

The assessment of **internal efficiency** and ‘wastage’ in education² uses techniques similar to those used in cohort analysis in demography. A *cohort* is defined as a group of persons who jointly experience a series of specific events over a period of time. Accordingly, we may define a *pupil cohort* as a group of pupils who join the first grade of a given cycle in the same school year, and subsequently experience the events of promotion, repetition, dropout or successful completion of the final grade, each in his/her own way.

There are three ways to analyse the internal efficiency of an education system by means of the cohort pupil flow method, depending on the type of data collected: (i) true cohort, (ii) apparent cohort, and (iii) reconstructed cohort.

The ideal way to obtain a precise assessment of educational wastage is through the use of the *true cohort method*. This involves either a tracer (longitudinal) study to monitor the progress of a selected cohort of pupils through the education cycle, or through a retrospective study of school records in order to retrace the flows of pupils through the grades in past years. The true cohort method, however, is costly and time-consuming, and it requires good and reliable school-records with information on individual pupils. For this reason, this method is not yet widely used.

In the absence of individualised pupil information, internal efficiency in education can be assessed from data on enrolment by grade for at least two consecutive years using either the apparent or reconstructed cohort methods.

The *apparent cohort method* is applied when there is no data on repeaters. Then the enrolment in grade 1 in a particular year is compared with enrolment in the successive grades during successive years, and it is assumed that the decrease from each grade to the next corresponds to wastage. This method, the most commonly used so far, produces very approximate estimates of drop-out, and its main weakness is that it assumes that pupils are either promoted or drop-out of the school system. Repetition, a factor of paramount importance, is simply overlooked. However, this method is quite appropriate for countries practicing automatic promotion from grade to grade.

A more pertinent and commonly used method is the *reconstructed cohort method*, which is less dependent on the availability of detailed data over time. To apply this method, data on enrolment by grade for two consecutive years, together with data on repeaters by grade from the first to second year, are sufficient to enable the estimation of three main flow-rates: promotion, repetition and drop-out. Once obtained, these rates may be analysed first of all by grade to study the patterns of repetition and drop-out. Then they can be used to reconstruct a pupil-cohort flow in order to derive other indicators of internal efficiency. This is illustrated below using data from Guinea.

1. *Computation of the flow-rates using data on enrolment and repeaters*

A. *Initial data: Enrolment and repeaters by grade in Guinea, 1993 and 1994.*

The methodology of the reconstructed cohort flow model is based on the fundamental concept that for pupils enrolled in a given grade in a given year, there can be only three eventualities: (a) some of them will be promoted to the next higher grade in the next school year; (b) others will repeat the same grade in the next school year; and (c) the remaining pupils will drop-out of school in the course of the year.

² ‘Wastage’ refers to the combined effect of grade repetition and drop-out.

Grades	1	2	3	4	5	6	Graduates
1993 Enrolment	123 702	111 058	95 690	69 630	56 478	41 311	19 735
1994 Enrolment	129 700	113 882	112 433	78 758	62 692	45 429	
Repeaters	33 539	27 067	33 545	22 740	20 476	14 513	

Based on this concept, the sample data above permit the computation of the three flow-rates. For instance, of the 123,702 pupils enrolled in grade 1 in 1993:

1. 33,539 repeated grade 1 in 1994, i.e. 27.1%.
2. 86,815 were promoted, i.e. 70.2% (113,882 enrolled in grade 2 in 1994 minus 27,067 who repeated that grade in 1994).
3. 3,348 dropped-out, i.e. 2.7% (the residual of 123,702 minus 86,815 and minus 33,539).

Thus, the corresponding flow-rates are $p = 0.702$; $r = 0.271$; $d = 0.027$, which add up to 1 or 100%.

B. Main flow-rates enabling the derivation of the flow diagram

By applying the same type of computation on a grade-by-grade basis, one can obtain the following flow-rates by grade.

Grades	1	2	3	4	5	6
Promotion rates (p)	0.702	0.710	0.585	0.606	0.547	0.478
Repetition rates (r)	0.271	0.244	0.351	0.327	0.363	0.351
Drop-out rates (d)	0.027	0.046	0.064	0.067	0.090	0.171

2. Reconstruction of school 'history': hypothetical flow diagram of the cohort through primary education in Guinea, 1993.

Based on these above flow-rates, the flow of a fictitious cohort of 1,000 pupils through the primary education cycle can be reconstructed below, based on three assumptions:

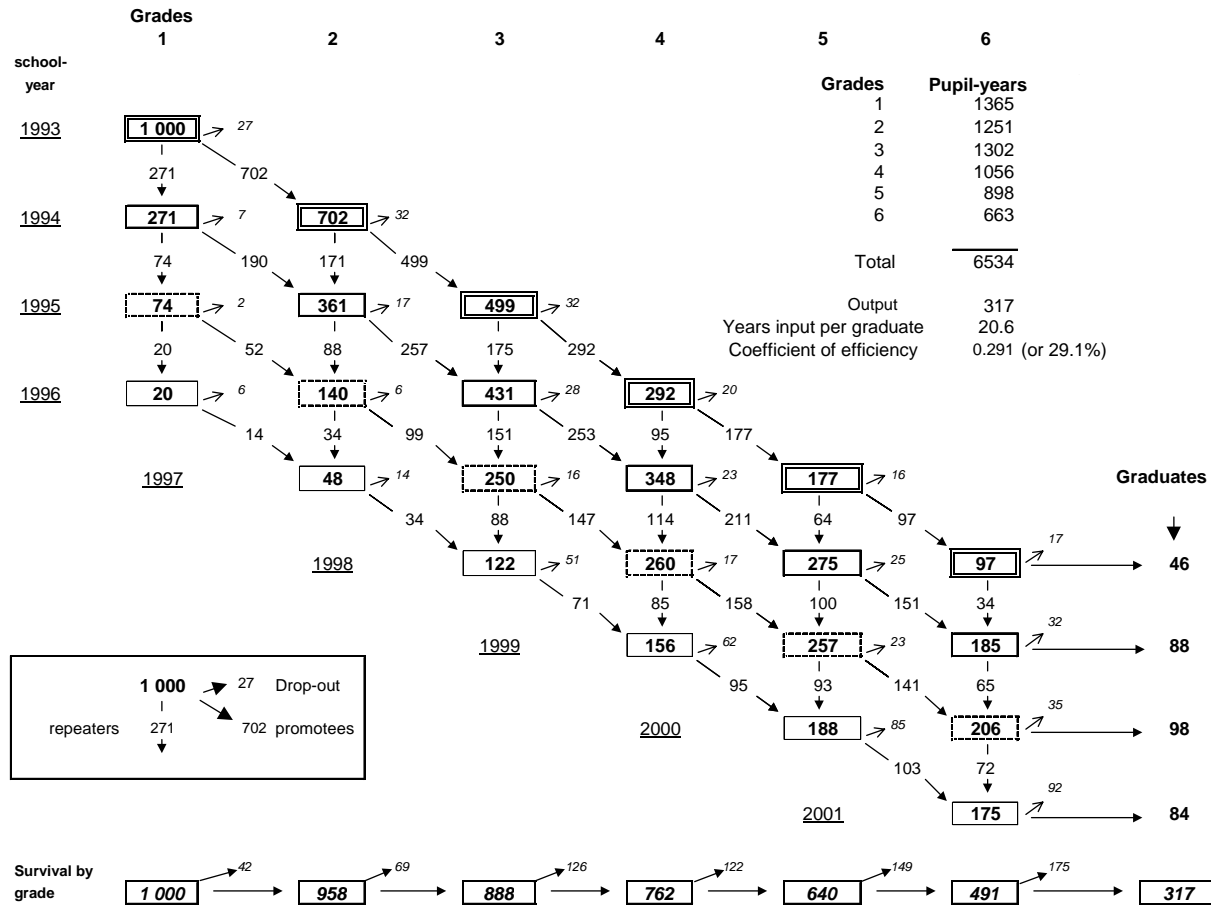
1. that, at any given grade, the same rates of repetition, promotion, and drop-out apply, regardless of whether a pupil has reached that grade directly or after one or more repetitions (hypothesis of homogenous behaviour);
2. that there will be no additional pupils (new entrants) in any of the subsequent years during the life-time of the cohort, other than original cohort of 1,000 pupils;
3. that the number of times any pupil will be allowed to repeat a grade must be well defined.

To reconstruct the history of 123,702 pupils entering grade 1 in Guinea in 1993, it is easier to express this starting cohort as an index of 1,000 pupils, and all operations are consequently translated in 'per thousand' terms. Thus, when applying each flow-rate for grade 1 to this fictitious cohort of 1,000 pupils (instead of the actual 123,702 pupils), one finds that 271 pupils repeated grade 1 (27.1%); 27 dropped-out (2.7%), and 702 were promoted to grade 2 (70.2%). Using the flow-rates for grade 2 on the 702 pupils reaching grade 2, one can derive that 171 repeated grade 2 (24.4%); 32 dropped-out (4.6%), and 499 were promoted to grade 3 (71%) and so on. It may be noted that the first diagonal row in the diagram below (next page) is obtained by multiplying the successive promotion rates for successive grades and successive years. The repetition and drop-out rates are then applied to obtain the second, the third and the fourth rows.

From this flow diagram, one can draw a number of interesting observations. For instance, out of the initial 1,000 pupils entering grade 1, only 46 graduated from the cycle without repeating any grade; 88 graduated with a one year delay, i.e. they repeated one grade; 98 graduated with two years delay, i.e. they repeated twice; and 84 graduated after repeating three times.

In addition, this flow diagram enables the computation of the main indicators of internal efficiency. For example, the figures in the boxes below the diagram give the number of pupils reaching a particular grade, thus enabling the calculation of the **survival rates** by grade. One can observe that 958 out of the 1,000

pupils in the cohort (or 95.8 per cent) reached grade 2. These figures can be easily derived from the upper part of the diagram, by summing the number of drop-outs from each grade and each year and subtracting that sum from the enrolment in the same grade. For grade 1 we obtain $27+7+2+6 = 42$ drop-outs, which when subtracted from 1000 would give 958 survivals. Finally by summing the drop-outs from each grade ($42+69+126+122+149+175$) we find a total of 683 pupils who dropped out without completing primary education (as graduates). Thus, out of the initial pupil-cohort of 1,000, only 317, or about 32 per cent, graduated from the primary cycle.



Multiplying this number of graduates by the number of grades ($317 \times 6 = 1902$) would give the ideal number of pupil-years required to produce the graduates. The ratio between the latter and the actual number of pupil-years used by the cohort, i.e. 6534, gives the **coefficient of efficiency** ($1902 \div 6535 = 0.291$ or 29%). The **years input per graduate** (20.6 years) is obtained by dividing the total number of pupil-years spent by the cohort (6534) by the total number of graduates (317). The years input per graduate can then be compared to the ideal number required, which is simply the duration of the education cycle -- 6 years in this example.

According to the above figures, one may conclude that due to repetition and drop-out, it was necessary to use more than three times the ideal number of pupil-years required to produce the 317 graduates. The **input-output ratio**, which is the reciprocal of the coefficient of efficiency, can be calculated by dividing the years input per graduate by the prescribed duration of the education cycle (i.e. $20.6 \div 6 = 3.4$). The ideal minimum value of this ratio is 1, meaning that there is no repetition or drop-out.

Reliability of data on enrolments and repeaters. How well the derived indicators describe the way in which a cohort actually progresses through a cycle of education depends on the validity of the assumptions on

which this model is based and the reliability of the statistical data available for estimating the flow rates. It is important to note that since data on promotees and drop-outs are generally not directly available, errors in the data available on enrolment and repeaters would affect the estimates derived for these two flows. Three common errors that may distort the flow rates can be described as follows:

1. Over-reporting of enrolment/repeaters (particularly in grade 1). This may be deliberate when there is a financial incentive; for example, if the number of teachers paid by the government is related to the number of pupils enrolled. A different type of over-reporting occurs in countries where parents enrol their children in school at the beginning of the school year, but where a large number of those enrolled do not actually attend school or only attend for a very brief period.
2. Incorrect distinction between new entrants and repeaters. This leads, other things being equal, to an under-reporting of repeaters in grade 1 and to an over-estimation of drop-out from this grade.
3. Yearly variation in the coverage of the data. Assume that, for one reason or another, the data available for year t are complete while those for year $t+1$ are incomplete. Disregarding other types of errors, this implies that the number of promotees and repeaters in $t+1$ will be under-estimated and the number of drop-outs over-estimated. If, in addition, the data for school-year $t+2$ are complete, this will imply that some of the promotees and repeaters that year were not included in the enrolment the previous year, leading to over-estimation of the promotion and repetition rates and under-estimation of the drop-out rate, which may appear negative in some cases.

While the errors discussed under points 1 and 2 above probably affect mainly the flow rates for the first grade of primary education, incomplete data will naturally distort the rates for all grades. All these types of error can lead to biases in the indicators of internal efficiency. Since the drop-out rate is determined as a residual, it often serves as a test for some of these errors: a negative drop-out rate, particularly, is a sign of errors in the raw data, i.e. reported enrolment and repeaters.

Note: A comparison of the apparent cohort and reconstructed cohort methods shows that neglecting the repetition factor (apparent cohort method) leads to an under-estimation of survival rates and an over-estimation of drop-out.

* * END * *
