

NATIONAL HOUSEHOLD SURVEY CAPABILITY PROGRAMME

MEASURING LITERACY THROUGH HOUSEHOLD SURVEYS:
A technical study on Literacy Assessment
and Related Education Topics through
Household Surveys

UNITED NATIONS

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UNITED NATIONS
DEPARTMENT OF TECHNICAL
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P R E F A C E

This study on Measuring Literacy through Household Surveys is one of a series of technical studies undertaken by the Statistical Office of the United Nations in pursuance of the National Household Survey Capability Programme, to assist developing countries in the organization of household surveys.

The National Household Survey Capability Programme, (NHSCP), is sponsored by the United Nations in collaboration with the specialized agencies concerned and co-sponsored and/or supported by the United Nations Population Fund, the United Nations Children's Fund and the World Bank. It is aimed at helping developing countries obtain, through an integrated programme of household surveys, demographic, social and socio-economic statistics required for development planning, policy formulation and programme implementation. The United Nations Handbook of Household Surveys (revised, 1984)*, which provides basic guidance on the organization and methodology of household surveys, reviews, on a general plane, problems of organization, design, operations and survey content. The handbook has been followed by a series of technical studies dealing in greater detail with sampling frames and sampling designs for integrated household survey programmes, assessment and control of non-sampling errors, development and design of survey questionnaires, data processing and the role of NHSCP in providing health information. The latest in the series is a manual on How to Weigh and Measure Children published in 1986. Other related studies recently brought out by the Statistical Office deal with collection of data on women in development and on disabilities through household surveys.

The topics covered in this study include the measurement of literacy through self-assessment and objective testing. A step by step account is given on how to plan, conduct and execute the literacy survey. Classification of individuals into the basic dichotomy "literate/illiterate" is stressed throughout the study, with an alternative for further categorization discussed in the final chapter.

The United Nations was assisted by the consultants Mr. Daniel A. Wagner and Mr. A.B.L. Srivastava in the preparation of the first draft of this document. The draft was reviewed at a technical meeting held at UNESCO Headquarters in July 1987. It is being issued in preliminary form to elicit comments and feedback from as many readers and users as possible prior to its publication in final form. Comments should be sent to the Programme Co-ordinator, National Household Survey Capability Programme, Statistical Office, United Nations, New York, 10017.

* Studies in Methods, Series F, No. 31 (ST.ESA.STAT.SER.F/31)

CHAPTER 1. INTRODUCTION

1.1 This document is one of a series of Technical Studies prepared for the use of countries participating in the United Nations National Household Survey Capability Programme (NHSCP). The NHSCP is designed to help interested developing countries obtain, through household surveys and in conjunction with data from censuses and other sources, a continuing flow of integrated statistics for their development plans, policies and programmes, in line with their own priorities. For this purpose, the NHSCP aims to assist the interested countries to develop enduring national instruments and skills for survey-taking. As a country-oriented programme, the NHSCP does not recommend any fixed model of surveys. The scope and complexity of the data collection programmes will differ from country to country, depending on specific needs and potentialities. However, continuity and integration of household survey activities are essential features of all NHSCP country programmes.

Audience, scope, and national expertise

1.2 This technical study is meant primarily for statistical and planning units dealing with literacy within Ministries of Education, and for statisticians in charge of household survey design within the central statistical offices (CSO's) of developing countries. Government officials with a portfolio concerned with literacy and education, survey managers, programme officers of relevant international agencies, local and/or international experts in literacy and education can also benefit from different parts of this document.

1.3 At the outset, it should be emphasized that substantial experience in population censuses and special surveys indicates that the measurement of literacy presents special problems. The concept itself may be given varying interpretations by those planning a survey, the enumerators, the heads of households and the persons whose level of literacy is being measured. In effect, literacy in this connection can be seen as a continuous variable, ranging from the most elementary and mechanical ability to read and write a few words with great difficulty and no or little understanding to well-developed reading and writing skills that can be utilized for the most advanced purposes of communication. It is obvious that a person who can, for example, write only his name and some numerals and/or read just a few very simple words such as "yes", "no", "good" or "bad", is not literate in any meaningful sense. The crucial problem is, therefore, to determine within this wide range a threshold level that corresponds to a reading and writing ability that really makes some sense for the individual concerned by enabling him to communicate with other people and to be informed by means of written language, at least in a very modest way.

1.4 The main goal of this technical study is to provide general practical guidelines that will assist readers in planning for and executing a successful literacy survey. It is not possible to present a detailed account of all steps and procedures to

cover every possible set of circumstances. However, readers are given, in Annex A, a list of basic and extended bibliography to cover special relevant topics and particular interests in the fields of literacy assessment and household surveys. Countries undertaking this type of survey for the first time are advised to obtain proper ad hoc technical assistance.

- 1.5 NHSCP supports the carrying out of household level surveys on a variety of issues. As in other household surveys, it is very important to bring together individuals who have the requisite knowledge to prepare the best possible instrument. In the case of a literacy survey, the CSO would typically find it useful to collaborate with the following types of individuals: specialists and responsible officials in the Ministry of Education, other Ministries (such as Women's Affairs, Health, Social Affairs and Welfare, and Religious Affairs), and departments of planning which have an interest in literacy training and/or literacy outcomes. Since the data derived from this survey would be of particular interest for policy formulation within the above Ministries, it is crucial that the Ministries be involved from the beginning in the discussions and formulations which lead to carrying out the survey.
- 1.6 In many countries, literacy programming also takes place through various religious or non-governmental organizations (NGO's), local or foreign-sponsored, in addition to the budgeted governmental programmes. Some of these organizations may have particular expertise. For example, NGO's might have knowledge of adult literacy training on the use of local

languages in the instruction and assessment of literacy. Such information might be of considerable value in the assessment of the full range of literacy ability at the national level.

1.7 There may also be literacy specialists who work in university departments or research centres and institutes. These specialists may be able to provide very useful information for the survey. It is not unusual, for example, to find that a reading specialist in a university or teacher's college has had substantial experience in the assessment of reading, writing and mathematics in relevant languages, and may also have experience in the use of social surveys at the family level. This combination of skills may be of great benefit to the other individuals involved in the survey. In addition, some CSO's have found that university-based research assistants (usually undergraduate and graduate students) make useful additions to the survey team.

1.8 Furthermore, This type of household survey, which includes methods for the direct assessment of literacy abilities may profit from assessment instruments already developed and in use in the country concerned. In other cases, where such instruments either do not exist or are inappropriate for this type of survey and sample population, the present technical study provides suggestions on how appropriate instruments may be created. It should be emphasized, however, that the use of such assessment measures for establishing literacy categories or rates, is not designed for instructional purposes. That is, the assessment instruments for household surveys provide only

rough levels of ability, rather than a standardized and well-refined test such as those used in industrialized countries with a long history of education testing.

- 1.9 Finally, development and use of a literacy survey should enable countries to better understand the factors associated with different categories of literacy at a national, and/or regional level, which would be useful for policy planning in education and literacy programmes, while at the same time allowing comparison of this new information with previously determined literacy rates.

Organization of this technical study

- 1.10 This technical study provides a basic approach on how to conduct a household literacy survey designed primarily to assess literacy rates through self-assessment and direct measurement. In Chapter 2, a rationale is given for "why a literacy survey?", addressing some of the major concerns regarding literacy and how a household survey can help investigate these concerns. Advice is given on the full exploitation of available data, particularly national population censuses, before embarking on a full-scale literacy survey. Finally, Chapter 2 gives a cautionary note on some of the problems that should be kept in mind and dealt with ahead of time to avoid "wrecking the survey".

- 1.11 Chapters 3, 4 and 5 give a step-by-step account on how to plan, conduct and execute a literacy survey. The basic approach adheres to measuring the basic dichotomy literates/illiterates as defined by UNESCO (1978). Steps follow the planning and preparation phase (Chapter 3), development of the survey instruments (Chapter 4), data collection and data processing and, finally, data analysis, reporting and dissemination of survey results (Chapter 5). An exercise is discussed to illustrate the issues in defining and constructing measures that can lead to categorization of individuals in the basic dichotomy via direct measurement, with illustrations of the concepts for test development given in Annex B and examples of actual questionnaires and tests given in Annex C.
- 1.12 The final chapter, Chapter 6, is an optional chapter and is not essential for undertaking a literacy survey with the basic approach. It highlights some of the issues that need further discussion in going beyond the basic approach, and is a suggested reading only for countries that already have considerable experience and sufficient data gathered through the basic approach. The exercises and examples used for discussion are by no means models to follow and are only meant as illustrations.
- 1.13 Annex A provides basic bibliography and ample references for further reading. Annex B illustrates how to construct test items and Annex C gives actual examples of literacy surveys and the tests they used.

CHAPTER 2. WHY A LITERACY SURVEY?

- 2.1 The importance of literacy in a national community can hardly be over-stressed. The skills of literacy help people to acquire knowledge and to communicate with others, thereby making them more effective as members of a society, workers and citizens. The economic value of a literate work-force is generally recognized, and the link between basic education and development efforts is taken into account in all national planning. In the social spheres of community relations, cultural participation and family life, the place of literacy may be less emphasized, yet it is no less essential. This is clear, for example, in developing countries, where very often women are primarily responsible for rearing the children. Furthermore, measures to improve family health, reduce infant and child mortality by simple "do-able" actions, and ultimately to lower fertility rates, all rest on the capacity of women to understand the issues and follow advice that is usually recorded in written form. Politically, too, literate members of a community are better endowed for co-operation and participation, and are thus empowered by their skills to become the agents of local development.
- 2.2 It is no small wonder, then, that the literacy rate of a national population is taken by all international agencies as one of the basic indicators of national progress. Whether it be the result or the cause of development or both, there is little doubt that literacy is a measure of the well-being of the citizens of a given society.

- 2.3 The main instrument for ensuring literacy is the school system. In every country the purpose of primary education is to provide the rising generation with the skills of reading, writing and arithmetic. And beyond this, an increasingly complex array of adult education programmes and institutions are added to formal schooling to provide further training in skills. Here too, literacy training has to be included whenever the school system has been unable to reach the entire population. For every country, organized efforts to achieve literacy for all make up a massive enterprise that absorbs a large part of public expenditure.
- 2.4 Both the importance and the cost of national literacy make it essential to consider how to measure progress in this direction. To be able to offer a reliable national indicator is one aim; but the major purpose is to meet the needs of policy-makers within the country. To measure the extent of literacy in the national population is one step in assessing the effectiveness of current programmes and offering accurate data for shaping future programmes in the educational and social fields. For example, projects in primary health care will be influenced by the degree of literacy in the target population.
- 2.5 Traditionally, two kinds of measures are used: First, the regular school registration data compiled by the Ministry of Education, which record enrolments and qualifications. If literacy is arbitrarily defined as completion of the third or fourth grade of schooling, some measure of persons literate (but not of persons illiterate) can be obtained from these

data. Since, not all countries have achieved universal enrolment and some students passing through the school system revert to illiteracy and many adolescents and adults without schooling do acquire literacy skills informally or through adult education programmes, school statistics give at best a partial view of the situation.

2.6 Second, the national population census, which is usually taken every ten years and collects data on such characteristics as age, sex, marital status, fertility, religion and occupation for the entire population of the country at the time of the census. Very often the census also provides self-reported information on literacy, educational attainment, school attendance and language spoken at home. This census information, however, suffers from two drawbacks if used for measuring literacy. One is the lengthy period of time from one enumeration to the next, which results in less than up-to-date information. And the other is the risk of inaccuracy because of misunderstanding or misapplication of the definition of literacy used in enumeration. For example, the ability to read, write and count ranges along a scale from "not at all" to "extremely well". An exercise in classification will depend a good deal on the exact definition used in the census and the enumerator's and respondent's understanding and correct application of it. Moreover, in a multilingual society, an additional disturbing factor occurs: read and write in what language? Although these questions are usually taken into account in the preparation of census schedules and in training enumerators, it remains true that the education-literacy variable forms only a small part of the total census and may be

hard to avoid errors of interpretation. This issue, which is inherent in the process of self-assessment through self-reporting, is further confounded when proxy respondents are involved.

A. SOME MAJOR ADVANTAGES OF A HOUSEHOLD LITERACY SURVEY

2.7 As stated above, most national-level investigations of literacy up to the present time have tended to gather data in two main ways: from relatively few questions included in large-scale censuses; and from surveys of formal and non-formal institutions which provide detailed information on such issues as attendance, expenses and so forth. In contrast, the household survey permits an inquiry into literacy and education in greater depth and through contact with each household member. Such investigation provide an important complement to existing data on literacy by providing not only a check on the validity of prior literacy estimates, but also a means of exploring the relationship between an individual's literacy level and other factors such as educational attainment, employment experience, familial environment and language background.

2.8 Household surveys offer several major advantages: 1) Because it is possible to collect data simultaneously on a number of social and economic characteristics of the household, and to relate them with information on literacy and educational attainment, one can study such relationships more efficiently and with greater statistical validity than if the information on socio-economic characteristics were not collected in the

same survey, but from other sources. 2) Household surveys, are under certain conditions, less expensive and take less time than censuses to provide the required data for planning and other purposes. 3) Household surveys can, through the application of well-designed, objective measures of literacy levels, provide more detailed and more reliable data on literacy than other data collection efforts, 4) Depending on need and the availability of resources, household surveys can be organized more frequently than censuses and targetted at a national, regional or local level. 5) Data on such items as dropping out from school and its causes, private expenditure on education and enrolment in non-recognized educational programmes, which are used to assess overall rates for the target population and not just school attendance, can be collected only or much more easily through household surveys. Various rates and ratios (e.g. enrolment ratios, literacy rate) can be derived easily from household survey data since estimates of the target populations by age and sex, to be used in the denominator of these rates and ratios, are obtained by scientific sampling methods in the course of household surveys.

2.9 A household survey devoted to literacy normally gathers the facts about the main characteristics of the families and individuals in the sample by interview and self-assessment. In addition, it provides an opportunity to introduce direct measurement in the reporting process - that is, the enumerator gives a simple test to each respondent and in this way ensures a standardized measurement of what is being reported on. Such an approach is not intended primarily as a check on self-assessment (although it may serve the purpose of assessing

the accuracy of previous census data obtained by self-assessment) but rather as a means of securing a more differentiated view of the extent of literacy in the population.

2.10 Finally, although there has been some effort to evaluate some components of existing government-sponsored literacy programmes, there is very little detailed information available on literacy levels or rates among the adult populations of most countries. Of the literacy evaluations which are currently available perhaps the best known is that produced by UNESCO (1976a), which covered the Experimental World Literacy Program; a more recent review (Bhola, 1985) has provided information on a variety of literacy campaigns, and one in-depth evaluation -- on the Ethiopian campaign -- has been prepared by Sjostrom & Sjostrom (1983), as well as an overview of adult literacy by Lind and Johnston (1986). The unavailability of further information of this type makes it difficult for government planners to make informed decisions about educational programmes, especially at the adult level. A household level survey is one method for obtaining more detailed information.

B. SOME POTENTIAL USES OF A HOUSEHOLD LITERACY SURVEY

2.11 Literacy and education data obtained from household surveys are primarily used for both basic series and indicators for policy-making, planning and monitoring. They can be used to provide tabulations and analysis to highlight educational disparities among major regions or population sub-groups (e.g. ethnic groups, linguistic groups, groups based on religious

affiliation); to analyse past trends; to make projections for the future, and to provide indicators to help in planning, monitoring and overall evaluation of the educational process in the country. Special studies can be produced from the survey data that diagnose problems and propose improvements in the educational system. The data on educational attainment in particular, can be effectively used for manpower planning, thus checking possible imbalances in outputs from the existing educational system and needs.

2.12 The data on literacy and education obtained from multi-subject household surveys are used to study relationships with various socio-economic characteristics of the population. Such studies are useful for national development planning as they highlight the role of education in all areas of social and economic development, and are fundamental in identifying social and economic imbalances and inequities.

2.13 In addition, household survey data on literacy and education can help in checking the accuracy of similar data obtained from other sources (e.g. literacy data from population census and enrolment data from school surveys). Sometimes the survey data can reveal shortcomings and inaccuracies in the data obtained from other sources, as well as provide data to fill in gaps.

1) School attendance, access to educational system and wastage

.14 In addition to data on literacy and educational attainment - the latter defined in terms of the highest grade completed and/or the highest level of education attained or completed by

the person in the system of regular, special and adult education (UNESCO, 1978) - household surveys can provide data on certain items related to education which can help in studies of the status and performance of the educational system. Such items can be grouped into: (a) items related to participation in educational activity, e.g. whether the person is attending school or an adult education programme; the grade, level and type of education programme in which he/she is enrolled; time devoted to educational activity, and factors associated with non-participation in education; and (b) items related to access to education, e.g. availability of schooling and adult education facilities, distance of the school from home; whether the person is a drop-out and, if so, the stage at which he/she dropped out.

- 2.15 The term educational "wastage" refers to the educational or economic loss associated with children who do not finish (often due to dropping out) what is considered to be the minimum educational level of a given country (often 5-8 years of primary school). Most specialists who work within this area gather data on the number of children who enter school each year, the number who progress on to the next grade, those who repeat a given year (quite common in many developing countries), and those who quit school altogether. The concept of wastage, then, refers to those children for whom an economic investment in educational resources has already been made, but who, literally, waste that investment by not completing the appropriate level of studies.

2) Literacy retention

2.16 Literacy retention is important because what children learn and retain from their school years -- and adults from non-formal literacy programmes -- is thought to be what can be employed in economic activities later on. When students drop out of an educational programme, a society is wasting its resources because those individuals (children or adults) will not reach some presumed threshold or minimum learning so that what has been acquired will not be lost. Thus, retention of literacy is a key goal of educational planners around the world. 1/

2.17 The literacy survey, which collects data on years of schooling and years since last schooling, will be in a position to provide useful information on the retention issue. In countries where there have not been major changes in the curriculum and educational system over a period of years, it ought to be possible to compare the literacy skills of individuals who completed five years of primary school only last year with others who completed the same five years of schooling, say six years previously. The scientific accuracy of such comparisons are clouded somewhat by what are called "cohort effects" (i.e. the effects of change over generations

/ The study of literacy retention has received a rather small amount of attention (cf. IDRC, 1979; Sheffield, 1976), and only a small number of empirical studies have dealt directly with these issues (e.g., Hartley & Swanson, 1986; National Educational Testing Center, 1982; Roy & Kapoor, 1975).

or time), but, nonetheless, such comparisons can give a useful idea of how years-after-schooling affect literacy skills.

- 2.18 The issue of wastage caused by school drop-outs is more complicated because drop-outs may already be assumed to be among the lowest achievers in a school, making it difficult to compare their abilities after dropping out with those who remained in school. On the other hand, the survey will permit the comparison of drop-outs from different grade-levels in school, and over a number of years after schooling. Thus, it would be possible to compare the literacy ability among drop-outs from third grade and similar drop-outs from fourth grade, both of whom were, say, out of school for four years. If there exists a "threshold" for the learning and retention of minimal literacy skills, such comparisons would be one useful way to identify it.

3) Literacy diffusion

- 2.19 How literacy ability is distributed within and across generations is sometimes referred to as literacy "diffusion". The data collected from a household survey can be quite useful for understanding how this diffusion takes place in a given society. As discussed, there are a number of key variables which are thought to influence the spread of literacy, such as age, gender, access to education and educated parents. Using statistical multiple regression techniques, it should be possible to gain some idea about the various social and economic factors associated with literacy in a given language/script. In this regard, it would also be quite

helpful to supplement these data with a more sociological or anthropological descriptive account of literacy use in the home and community. 1/

4) Female literacy

2.20 According to most estimates, the number of female illiterates in today's world exceeds that of the male illiterates by between 50-100% depending on the geographic region of the world. UNESCO (1985) states that world illiteracy rates (for the adult population aged 15 and over) were 34.9% for females, while the male rate was 20.5%. In Africa, the rates were 64.5% and 43.3% respectively; in Latin America, 19.2% and 15.3%; in Asia 47.4% and 25.6%; in Oceania 10.2% and 7.6%, and in Europe (including USSR), 3.0% and 1.6%. Although these statistics are based on rather uncertain estimates derived from national census information, it is clear that female illiteracy has generally been found to be considerably higher in all parts of the world. Given the common recognition of the key roles that women play in (a) economic development and (b) fertility planning and child survival, care, nutrition and health, it is not surprising that female illiteracy is seen as a major

1/ Ethnographic or descriptive accounts of literacy in both industrialized and developing countries may be found in several recent volumes: Heath (1983), Schieffelin and Gilmore (1986), Scribner and Cole (1981), and Wagner (1983b, 1987).

obstacle to making gains in these areas. A household literacy survey can provide vital information for planning adequate investment in sound literacy and adult education programmes for women, thereby contributing immeasurably to realizing the potential of women in social and economic development. 1/.

- 2.21 As noted earlier, because national censuses involve 100% enumeration of the population, they have usually included only very brief questions on literacy and education. By focusing on literacy and education within a well-defined, modest-sized and representative sample, the household survey offers the opportunity to undertake much more in-depth analyses of socio-demographic variables and individual competencies. Country survey experience in literacy is rather limited, however. As noted earlier, with the exception of a few programme evaluation studies and research studies, there has only been one NHSCP-sponsored survey on literacy, undertaken in Zimbabwe in 1986. This survey took approximately 6 weeks of preparation and 6 weeks for actual field work at the household level and was undertaken by the Central Statistical Office of Zimbabwe. Data analysis has not yet been completed, though many of the lessons from this experience have been incorporated in the present document, and some of the Zimbabwe materials for

1/ For further discussion on women's roles in development, see, for example, Bernard and Gayfer (1983), Charlton (1984), Stromquist (1985), UN Population Division (1985), and Warwick (1982).

questionnaires and literacy assessment have been used as examples in Annexes B and C.

2.22 To summarize, a household literacy survey can be designed to cover a wide variety of topics relevant to educational as well as economic and social planners, policy-makers, and various national and international agencies. It can be focused at a national, regional or local level. It can introduce direct and objective measures of literacy levels. The benefits to be derived are so considerable that every country with a survey capability should seriously consider the possibility of undertaking such a survey. The aim of this technical study is to trace, step-by-step, what the process would entail.

C. PROBLEMS THAT CAN WRECK A SURVEY

2.23 Dealing with competing local interests. Participants from ministries with possible competing interests often participate in the planning of a literacy survey. While this can be quite useful in bringing additional expertise to the planning process, it can also create decision-making problems due to possible differences not only in points of view, but also in the responsibilities for different aspects of the survey. For example, a participant in the planning group who is head of a national literacy campaign might consider it desirable to measure literacy in a manner which would parallel closely his own evaluation work of the literacy campaign, so as to make his results more likely to be confirmed by the survey. The coordinator of the literacy survey, however, needs to measure literacy on a national basis, not biased toward a particular

type of instruction or language, which may be emphasized in the literacy campaign. Different interests can also generate too many special topics wanted by the various participants in the planning group. The questionnaire would then become unwieldy or too lengthy for valid collection.

2.24 There are, of course, no easy solutions to such problems. Obviously, wide consultation coupled with clear responsibility and lines of authority is essential. Perhaps the most important response is to get participants who have a vested interest in the conduct and results of the literacy survey to be involved as early as possible in the planning process, so that they feel that their input and interests have been listened to. Another useful response would be to involve a high-level ministry official who might discuss the issue informally with an equivalent level official in the competing ministry: occasionally, competition issues among lower-level staff can be resolved through the intervention of senior officials. A third possibility is the informal intervention of an independent respected outsider, such as a programme officer of an international agency, particularly when the agency is providing the material support for the literacy survey.

2.25 When time, financial and human resources become insufficient.
Pressures to scale back a well-planned effort after a cut-back on initially allotted resources or higher than expected costs is one of the most difficult problems faced by a survey team. The most straightforward solution is to start from scratch: revise goals and statistical objectives and re-design sample size and selection schemes accordingly. If the survey is already in the

field when the cut-back occurs, a simplistic reduction of the sample size or cancellation of pending field work is not a solution and would risk losing the entire survey. Any changes undertaken as a result of a cut-back in resources available to complete the work should be implemented only after all implications have been clearly presented and amply discussed with the survey planning group.

2.26 If the cut-back occurs after the survey questionnaires have been collected, the data processing and data analysis plan needs to be revised by the planning group and priorities determined. However, even though it is possible to focus on certain parts of the tabulation plan which are most crucial to the participants in the planning group, and leave additional tabulations to a later time, it rarely happens that the remaining tabulations ever get completed, given the pressing nature of organizational work. Thus, the planning group should always undertake any change in the original survey plan with a great deal of care.

2.27 When the instructions seem difficult to understand. In any survey it is absolutely critical that the interviewers understand the instructions of the survey, and that the respondent understand what is being asked in the questions posed by the interviewer. Pretesting and the inclusion of a pilot survey in the survey design are meant to avoid problems in this area before full field collection. If, however, at any point, an interviewer, supervisor, or other participant in the survey believes that instructions are not well understood, immediate corrective action should be taken. Lack of

comprehension of instructions is one of the main causes of invalid results in a survey, and needs to be attended promptly and thoroughly at all times. The supervisors of the interviewers or the interviewers themselves are usually in the best position to report such difficulties.

2.28 Inadequate conceptual framework

As is the case with all statistical undertakings, household surveys depend first of all upon a rational, systematic and logical approach with a well delineated universe and clear-cut concepts, definitions and classifications to meet their objectives. An important prerequisite for carrying out a survey successfully is, therefore, a strict and concise conceptual framework. For those in charge of a household survey in which data on education are to be collected, it is thus essential to be at least reasonably familiar with common terminology used in this field.

2.29 It goes without saying that strict adherence to standards and norms established for the survey is of the utmost importance for achieving consistency and comparability of the statistics obtained. In countries where national statistical standards already exist for the field of education, these must be taken into account when organizing surveys, and this is one important reason for maintaining close collaboration with ministries of education and other relevant agencies, as discussed above.

2.30 However, many countries, particularly among the developing ones, have not as yet established a comprehensive system of

definitions and classifications relating to education. Therefore, this technical study draws heavily on international standards, norms and terminology which are widely used and accepted. This should, however, in no way prevent countries from working towards national definitions and classifications which properly reflect characteristic features of their respective educational systems and particular conditions in each country. At the same time, it is highly desirable that such national standards be as compatible as possible with current international systems.

D. NATIONAL POPULATION CENSUSES AND LITERACY

1) Censuses as a source of information on literacy and education

2.31 The population census, which most countries organize every ten years, is the main source of data on various demographic, social and socio-economic characteristics of the population. The census aims at collecting data on such characteristics as age, sex, marital status, fertility, religion and economic activity for all the individuals living in the country at the time of the census. With respect to literacy and educational characteristics, it usually collects self-assessed information on: (1) literacy (2) educational attainment (3) school attendance and (4) language spoken at home (or mother tongue.)

2.32 The census, by its very nature, covers the entire population. All the provinces or administrative zones of the country are divided into enumeration area, all the households in each enumeration area are listed, and census enumerators collect

the required data from the head and other members of the household through face to face interviews and record it in the census schedules (mail censuses use a scheme that combines postal services for distribution and collection, self-filling of schedules by the households, and personal enumeration only for non-respondents). Census tables on key variables can thus be provided not only for the whole country, but for each administrative zone or region.

- 2.33 While the main advantage of census data is that statistics can be derived for any region or small sub-group of the population, a drawback is that enumeration errors are harder to control. For example, content errors arise when the information recorded by the enumerator (or respondents in mail censuses) is of doubtful accuracy. Sometimes, the characteristic on which information is needed can only be observed superficially or measured crudely due to limitations of time and other constraints in a census operation. This is particularly true of literacy in a census, as will be discussed later on.

2) Data on literacy from a census

- 2.34 Most countries collect data on literacy through population censuses. Census literacy tables usually give the distribution of the self-assessed illiterate population by sex, age, rural/urban residence and in some cases by other variables such as religion, ethnic, social and linguistic groups. The age groups for which the figures are normally provided are: 15 years and over, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-54, 55-64 and 65 and over, but country to country differences in respect of age-groups and definitions of

illiteracy used for tabulating the illiterate population make inter-country comparisons difficult. The full exploitation - through analysis and further tabulation - of available data on literacy from recent censuses should be exhaustively explored before embarking on a literacy survey. This exercise will lighten the survey goals and provide insight for better planning of the survey. This is further discussed in Section A of Chapter 3.

3) Data on languages from a census

2.35 Data on language background are particularly important in a multilingual society and are basic for assessment of literacy. The census schedules usually contain an item or two on the mother tongue or the language commonly spoken in the household, and sometimes the information on other languages known to the individual is also collected. But such data is often of doubtful reliability, since the census enumerators have to accept the respondents' word about their knowledge of the different languages.

4) Data on educational attainment from a census

2.36 Educational attainment is usually defined as the highest grade or level of schooling completed by an individual, defined in terms of the educational system of the survey country. In some countries, however, total years of school enrollment is utilized, which may lead to confusion by giving weight to the years lost due to repeating a grade. As was the case with literacy data, statistics of educational attainment are normally available by sex, age and rural/urban residence.

2.37 The statistics on educational attainment derived from the census have certain limitations. Diversities in the structure of education and duration of training at each level cause difficulty in comparison between countries, and sometimes within the same country. Furthermore, there is no unique question asked to collect specific data. In some countries, it is the type of diploma or certificate awarded; in others, the grade completed. Finally, in some countries data on educational attainment are available only for those who are literate or have completed their education.

5) Data on school attendance from a census

2.38 In census taking, school attendance is defined as enrolment in any regular educational institution, public or private, for systematic instruction at any level of education at the time of census (or at the end of the last school year if the census is taken during vacation time). This does not imply attendance in the sense of being physically present in the school on a particular day. Enrolment in programmes of in-service training which are not a part of the recognized educational structure is excluded. Data on school attendance is usually collected for the age group 5 to 24, and tabulated by sex, age and urban/rural residence.

2.39 A limitation of census data on school attendance is that there is usually no provision for verification, which is particularly problematic when non-attendance in certain age groups is contrary to law or custom. There are instances of significant differences between attendance data obtained from census and

those from school records (UNESCO, 1983B). A further problem is ambiguity about the type of schools included in the regular system; some countries include commercial schools, dancing schools, and language schools while others do not.

6) Census experience with literacy data in some countries

2.40 As already mentioned, most countries collect data on literacy through their censuses, though these may not permit comparability between countries and even between censuses within a country, and the data may not be well verified. Problems are often due to variations in the operational definition of literacy used in the census, and inability of census enumerators to apply the definition uniformly while collecting data from the respondents. The issue of definition is illustrated below by the actual census experience of a few developing countries.

2.41 India: India has been collecting data on literacy in all its censuses since 1871. However, the definition of literacy has changed over the years. In earlier times, literacy was vaguely defined as the ability to read and write. For example, the census report of 1911 points out that no instructions were issued about the required degree of proficiency in reading and writing for literacy. Actually the criterion of literacy varied from province to province; in one, a person was considered literate upon passing the upper primary school examination, in another a literate person was the one who could write a simple letter and read the reply to it. While the ability of a person to read and write a simple letter continued to be the definition of literacy until 1951, in later censuses

India adopted the UNESCO definition. A sudden increase in literacy rate in all age groups between 1951 and 1961 was partly attributed to the change in definition. Gunnar Myrdal (1968), commented that this increase, was grossly exaggerated, and that the possible reasons for such exaggeration were that (a) the new UNESCO definition adopted in 1961 (ability to read and write with understanding) perhaps carried a less concrete meaning than the old definition (ability to read and write a simple letter), and (b) with increasing prestige of literacy many more people who were not literate started claiming that they were.

2.42 In the 1981 census of India, the following instructions were given to enumerators for determining whether the respondent (of age 5 years or more) was literate or not:

"A literate person is one who can both read and write with understanding in any language. If there is doubt, the test that may be applied is his/her ability to read any portion of the printed matter in the enumerator's instruction booklet (provided he knows that language), and for writing, he should accept the respondent's word or the testimony of other members of the household".

In practice, however, the enumerators generally ended up accepting the respondent's word, and it is likely that the literacy rates derived from the census data were over-estimated, at least in terms of the previous, more comprehensive definition.

- 2.43 In India, like many other countries, there are wide variations in the literacy rates between males and females, different states of the country, rural and urban areas, and different ethnic and social groups. These variations determine the need to present literacy data separately for various regions and sub-groups of the population. These are usually reported for the population aged 5 or more.
- 2.44 Thailand: In the population and housing census of 1980, persons of 5 years of age and over who were able to read and write simple statements in any language were defined as literate. A person who could read but not write was classified as illiterate.
- 2.45 Pakistan: In the 1951 census, the definition of literacy employed was "the ability to read and write in clear print", without reference to understanding the text. It yielded a literacy rate of 22% for population aged 5 years and over. It was estimated that over a third of the literates were only able to read the Quran in Arabic, without understanding. In the 1961 census, separate tabulations were provided, using three different definitions: (1) the ability to read and write a simple letter, (2) the ability to read with understanding and (3) the ability to read the Quran without understanding.
- 2.46 Bangladesh: Up to 1941, the criterion for literacy was the ability to read and write Bengali. In the 1951 census, literacy was defined as the ability to read and write in any language. In the 1961 census, it was redefined as the ability to read with understanding a passage in any language, and the

same definition was used in the 1974 census, which was undertaken after Bangladesh became an independent country.

2.47 According to the United Nations Handbook of Household Surveys, the need for a more qualified concept of literacy to supplement the "bare minimum" level has been felt ever since the first definition of literacy was introduced by UNESCO in 1958. It has been deemed necessary to aim at a more ambitious degree of literacy, focusing primarily on the proper "functioning" of the individual in relation to his community and socio-economic situation, especially in formulating objectives for mass campaigns at the international as well as at the national level. Thus the concept of "functional literacy" has been created.

2.48 Functional literacy represents a significantly higher level of literacy which is clearly "work-oriented" and which puts special emphasis on the continuous use of the acquired ability in reading, writing and also calculation for practical purposes. The skills must be sufficiently advanced to make it possible for the individual to participate fully and effectively in activities commonly occurring in his life that require a reasonable capability of communicating by written language. This is applicable to both occupational activities and community life. A functionally literate person must, for example, be able to receive written instructions for his work, read newspapers, notices, advertisements, popular literature and the like, write ordinary letters, notes and messages, make elementary calculations, keep simple accounts, and so forth.

2.49 In view of this dualistic approach to the level of literacy, it is especially important that a sharp distinction be consistently maintained between the concepts of literacy and functional literacy. The relevant questions in the survey form should closely follow the respective definitions and the enumerators must be provided with comprehensive instructions on how to ensure a correct interpretation of the replies obtained. It is also essential that such questions are not just answered by the head of the household on behalf of its other members but put directly to each individual. The enumerator will in this way have a better opportunity of controlling the answers received. The method of private interviews may also have the advantage of overcoming certain psychological inhibitions and prestige attitudes which tend to disguise the real literacy status.

7) Census experience with other educational variables in some countries

2.50 Country experience in the collection of data on educational attainment and the population attending school may be useful in illuminating some of the problems that are encountered. A few cases are presented below for illustrative purposes.

2.51 India: Out of 16 items included in the Individual Slip (questionnaire) used in the 1981 census, 5 items were of interest for educational purposes. One was on the mother tongue of the individual (defined as the language in which a person's mother addressed him/her during childhood), and another sought information about two other languages known to the individual. Only a working knowledge of the language

(i.e., ability to converse with understanding without necessarily knowing how to read and write that language) was considered sufficient.

2.52 In addition there were two items on education. One related to educational attainment and the other to school attendance.

2.53 The question on educational attainment was addressed only to those literate. Enumerators had to find out the highest educational level attained in terms of the grade actually passed by the respondents. However, if a respondent said that he/she had received education up to a certain level (e.g., primary, middle, school final, etc.), the answer was to be recorded as such. For the persons having graduate/post-graduate qualifications, the major subject was also to be noted. For a person having both general and technical qualifications, information on both qualifications were to be recorded.

2.54 With respect to school attendance the information required was whether or not the person was currently attending any school. The question was to be put to everyone, including illiterates and elderly persons. The answer was to be "yes" even in cases of an "unrecognized" school, a correspondence course or an adult education programme.

2.55 In general, the enrolled population figures obtained from the census did not agree with those derived from the school statistics of that year. Usually the census provides higher enrolment figures than those obtained from official school statistics, but in 1961 in India, enrolment from school

statistics at the first level of education was reported as 41.7 million, which was about 20% more than the number of full-time students reported by the census of that year (34.6 million) among non-workers in age group 0-14. The difference was largely due to the inclusion in the school statistics of a high percentage of children over 14 years of age who were enrolled at the first level of education and the exclusion in the census of workers who were also attending school.

2.56 Thailand: The 1980 census of Thailand collected data on educational attainment and school attendance. For school attendance, persons in the age group 5-30 were asked whether they attended school or not as of 1 January 1980, or during the 1979-80 school year. If they answered "yes", they were asked about the grade in which they were enrolled. Defined as schools were institutions with regular academic streams, including vocational schools, teacher training schools, colleges and universities, but excluding tutorial and other schools providing short term training in such areas as hairdressing, dress-making, etc. For educational attainment, persons aged 5 years or more were asked about the highest grade of education completed in school, college or university as of 1 January 1980.

2.57 For the population aged 6-29, the data were tabulated to provide rates of school attendance (i.e., those enrolled in schools) by sex. Educational attainment tables were prepared by sex and level of education. The figures were provided separately for municipal and non-municipal areas. The same concepts for educational items were used in subsequent household surveys conducted by the National Statistical Office.

- 2.58 Mauritius: In the population and housing census of 1983, data were collected on school attendance for the age group 5-19, and information was sought about the grades in which they were enrolled. The census data were compared with education statistics obtained from schools and compiled by the Ministry of Education. While the census was taken in July, the school statistics referred to April, and it was found that the children reported to be attending school in the census exceeded those reported in school statistics by 2 to 3 percent.

E. MEASURING THE CONSEQUENCES OF LITERACY 1/

- 2.59 The following discussion illustrates some of the issues that a literacy survey can assist in elucidating.
- 2.60 Will a change from a lower to higher level of literacy make a concrete difference in an individual's life? Perhaps the only way to determine an answer is through ethnographic and case studies which delve into the actual lives of individuals (cf., Heath, 1983), as looking at the "average literacy rate" and comparing this statistic with health indicators (such as infant mortality rates or fertility rates), or estimating "employability" from such a rate only tends to obscure the diversity of human plights. As an example, work in rural low-literacy Morocco has demonstrated that those with higher literacy tend to be better off economically, but also that an

1/ This section is based on D.A. Wagner's "Literacy Assessment in the Third World: An Overview and Proposed Schema for Survey Use" (1988, in press Comparative Education Review).

increasing number of young adults believe that more education and more literacy will not necessarily lead to greater wealth, since more and more school graduates have not found work. A common perception in rural Morocco is that both some literacy and some level of education are needed by some individuals in every family (or extended family) to meet the tasks required by government bureaucracy, but not everyone need be literate in order to accomplish such tasks (cf. Wagner, Messick & Spratt, 1986).

2.61 Perhaps the most compelling argument that has been made for human resources development is that literacy and schooling will lead to economic growth in countries which make a sufficient investment in them. This is the approach sometimes referred to as investment in human capital (e.g., Psacharopoulos & Woodhall, 1985; Shultz, 1981). Anderson and Bowman (1965), for example, went so far as to say that an 80% national adult literacy rate would be necessary for rapid economic development, on the basis of the finding of significant correlation between GNP and literacy rates in aggregated data across many countries. But claiming causality using such correlations is very hazardous. One could probably be just as correct in claiming that literacy rates, like infant mortality rates, are a function of the degree of economic development in most countries. One usually finds that, if there is social and economic progress, then literacy rates climb and infant mortality rates drop. Blaug (1985), once a supporter of human capital theory, has come to the conclusion that neither years of schooling nor specific literacy rates have any direct effect on economic growth.

2.62 It would seem that the intellectual tide is turning against those who argued that universal literacy would, in and of itself, have important economic outcomes. Increasing numbers of policy-makers in the area of educational planning have questioned whether nations can bear the burden of ever-expanding educational costs with fixed or lowered economic resources. And one hears increasing reference to moral imperatives for literacy, in both the developing and industrialized worlds, mixed with the economic arguments (e.g., Bhola, 1984; 1985). Yet there are many moral imperatives in today's world, such as life, liberty, and health in addition to literacy, and choosing among them is not, strictly speaking, a scientific enterprise. Nonetheless, the association of literacy with health, nutrition and other positive social outcomes is such that it is unlikely that governments will cease efforts to universalize literacy and primary education. Moreover, high rates of literacy have taken generations to achieve, in spite of the rhetoric of the literature on literacy campaigns and educational revolutions (cf., Wagner, 1986; Eklof, 1987). As with economic development, literacy development has not taken place overnight.

2.63 The issue is not whether but rather how to promote literacy. Even if we had conclusive evidence of the marginal economic benefits of literacy, the question for literacy and development specialists ought to be: How can we most efficiently achieve appropriate literacy levels with the available economic and social resources? The emphasis is on efficiency and appropriateness (cf. Wagner, 1988), domains in which specialists can play a crucial role. A campaign may be

efficient in a country undergoing revolutionary change, such as Nicaragua, where schools had been closed for years and urban high school students were available for rural teaching. But such a campaign may be relatively less efficient in a country like Zimbabwe, where public schooling has a long and organized history, and it is difficult and expensive to provide teachers for the less literate countryside. What is efficient, of course, brings forth a whole series of qualifiers, such as: for whom, in which language, for what purpose, using what methods, and so on. Only through a better understanding of the types and levels of literacy in a given society can adequate policy initiatives be formulated. It is to the issue of improved literacy assessment that we now turn.

CHAPTER 3. PLANNING AND PREPARATION

- 3.1 A household literacy survey will typically be conducted through the Central (National) Statistical Office(CSO). Even though this office may be attached to a single ministry or other governmental unit, it is essential that other relevant ministries and/or units be involved in the planning process because literacy programming (e.g., through schooling, national or regional campaigns, religious teaching, health programmes) is often undertaken by these different, and occasionally competing, organizational units. Thus the expertise, experience, and motivation of their personnel should be tapped from the very first planning meeting. These participants together with the senior technical staff (survey co-ordinator, sampling expert, literacy measurement expert, systems analyst, etc.), should form the nucleus of a planning group which should meet on a regular basis in order to prepare the literacy survey, and to discuss the results when they become available.
- 3.2 It should be clear that this technical study is designed principally for policy and programming purposes -- i.e. to determine broad-based literacy levels in a country with an eye to implementing or adapting literacy programming. It has become increasingly obvious that this purpose needs to be distinguished from the issue of instruction, because even though both purposes typically rely on test data, the measurement instruments differ. When designing assessment instruments for instructional purposes, the objective is to try to determine the specific abilities possessed or lacked by the respondent, so that instruction can be

tailored to need. In the type of survey discussed in the present document, only rough estimates of ability will be possible, and, therefore, instructional decision-making will usually be impossible, although reading assessment for the purpose of diagnosis and remedying of reading difficulties has a long, if controversial, history. However, policy-makers will generally be able to better understand the levels of literacy by age, gender, maternal language and geographical region, which in turn might be of utility to other sectors of the ministry of education.

- 3.3 The success of a household survey depends on a number of factors, and even an outstanding plan will not guarantee success in the undertaking. However, inadequate planning will almost certainly lead to failure. But it must be recognized at the very outset that development of an adequate survey plan requires time as well as staff and money and the political commitment for this endeavour must be sought and obtained at the proper levels.

A. REVIEW OF PAST EXPERIENCE

- 3.4 A very useful but often overlooked step in the early stages of planning, is a thorough review of past experience in the survey's subject-matter: previous surveys, censuses, or other statistical sources in the country. Methodological and procedural documentation, when available, may prove to be particularly important.
- 3.5 It is common for these reviews to find that there is a gap between data generation and their subsequent analysis. Thus, access to data sources should be sought and the possibility of further analysis explored, a step that will help define the

current survey as a complementary, integrated and co-ordinated effort to increase knowledge about literacy without duplication and waste of scarce resources. The expertise and experience of the planning group will play a major role here.

- 3.6 The review will also provide an opportunity to recall and consider relevant issues of the household survey approach. For instance 1) Household surveys are particularly appropriate for the derivation of estimates at the national level or for large segments of population; they cannot - as a census can - provide adequate basis for estimates for all political administrative units and/or small areas and population groups. For extensive cross-classifications with a large number of sub-national groups, a very large sample would be needed. 2) Household surveys based on probability sampling require the expert guidance of statisticians in planning, selection of sample, analysis of data, development of questionnaires, and test construction work to provide the required infrastructure especially if the country is currently constructing its sampling frame and general survey infrastructure. 3) For those educational characteristics which have low frequency of occurrence (e.g. in countries with very low literacy or illiteracy rates), large samples are required to provide sufficiently reliable estimates of the population having those characteristics, and vice versa; hopefully the review will also provide some useful parameter estimates to assist in determining the required sample size.

B. THE SURVEY GOALS

- 3.7 If literacy and education are the main topics, or two of several major topics, of a survey, the purpose, in principle, is to provide statistical information concerning the status and development of education (regular, adult and special, of all levels, types and grades) which is needed and which is not available elsewhere. The information should refer to the country as a whole but to the extent possible, depending upon survey design, it is desirable to provide for breakdowns by major regions. Given the scope of the data which deal essentially with educational characteristics of the population, the aim of the household survey in this connection is generally to throw light upon the outcome of the educational process in the country. This is reflected in the educational situation of individuals, that is, acquired knowledge and skills or lack of them.
- 3.8 Data concerning the main educational characteristics, literacy and educational attainment are key indicators of progress or critical shortcomings of the educational system over a long period of time. They thus have an important role to play in national plans for the advancement of both regular and adult education. In this connection it should be noted that it may be particularly helpful to provide appropriate breakdowns by age and by specific categories within the population, such as the economically active, ethnic and religious groups, urban and rural residents, migrant workers, and so on.
- 3.9 Literacy data are essential for developing an adequate network of adult education centres to combat illiteracy. Statistics on

educational attainment of total as well as of the economically active population provide benchmark data for the process of planning the future educational system to better meet the requirements of overall economic and social development.

- 3.10 The survey goals should also state whether emphasis is to be placed on measuring current levels or measuring change (i.e. as a monitoring and control tool). In the latter case, comparability of data across time is a major concern and repeated surveying will most likely be called for and should be adequately planned for and scheduled. If definitions, categories and classifications vary, it becomes difficult if not impossible to compare data collected from these different surveys. On the other hand, if comparability is the primary goal, paying little attention to the current validity of the definitions, categories and classifications for the sampled population, then the data becomes meaningless. Comparability of data amongst different countries is also of concern, and international and national needs may or may not come into conflict depending on the issue discussed.
- 3.11 To summarize, the major goal for household surveys mainly focusing upon literacy and education, is to provide data which, along with other types of information, can serve as a basis for administration, planning, evaluation, study and research in the field of literacy and education.
- 3.12 Given the above general remarks on purpose and use of literacy and education surveys, the goals -- both practical and theoretical -- of the literacy survey need to be carefully delineated and agreed upon by the survey participants. The promotion of literacy and

its analysis through a household survey may be commonly agreed goals without much disagreement; yet there are a number of issues which may be contentious in this domain and have an impact on the survey goals and design features, and thus need to be explored carefully. Among such issues, the following are suggested: (a) Definitions: Some participants may believe that very elementary skills are sufficient for literacy to be achieved, while others may feel that fluent reading with comprehension is necessary. (b) Language of literacy: Some participants (and some ministries) may have different political views on this matter. (c) Age of individuals to be included in the survey: Some participants may wish to view the survey as a measure of "adult literacy", while others may wish to cover a broader age range.

- 3.13 The goals agreed upon should be clear with respect to target population and the different domains for which results are needed, and the type of measurement instruments to be used should also be clearly stated (for example, self-assessment and/or direct testing for literacy), since their definitions will have a direct impact on sample size, field strategy and budget. Several iterations amongst these elements may be needed before reaching a final statement.

C.TYPE OF HOUSEHOLD SURVEY

- 3.14 Having reviewed past experience and specified the survey goals, the most adequate survey vehicle for the study can now be examined.

3.15 Different types of household surveys are distinguished on the basis of content, and the frequency with which they are organized. A household survey may be either ad hoc (carried out only once) or it may be repeated several times. In the latter case, it may be either a periodic or a continuing survey. For the former, data collection is carried out during discrete time periods, usually spaced at regular intervals; for the latter continuously. Each survey in a series of periodic or continuous surveys is referred to as a survey round. In a continuing survey the term survey round refers to the period for which separate estimates are produced.

3.16 A survey which is confined to a single subject such as literacy or education, is called a specialized survey. Surveys which cover more than one major subject are called multi-subject surveys. In either case, it is possible to have a single round or multiple rounds. Usually, in periodic or continuing multi-subject surveys, some of the survey content remains constant from round to round. Some countries organize single subject surveys on literacy or education in order to collect baseline data needed for planning action programmes. In other countries, data on literacy and education as well as on other variables are collected for the periodic evaluation of progress in these domains.

3.17 In programmes of periodic or continuing household surveys, it is important to achieve integration, that is, linkages between different surveys and/or different rounds of a single survey. Such linkages help in reducing the overall cost of the survey programme and enhancing the value of survey results. Linkages

between repeated surveys covering literacy imply that the same definitions and tools of measuring literacy are used in the different rounds, and that the data on other classification variables (e.g., age, sex, religion), are collected so that comparable tabulations and analyses can be provided for the different rounds of the survey. Integration would also imply sharing of personnel and facilities between the different rounds. Since considerable effort is needed to train survey staff and build up facilities for survey work, it is economical to use them for several rounds in a programme of household surveys. Furthermore, the cost of preparing the sampling frame, which is often substantial, can be distributed over several rounds in an integrated programme of surveys.

3.18 Periodic surveys are essential for monitoring and evaluation of literacy and education programmes. In a programme of periodic household surveys (such as those sponsored by NHSCP), it would be useful to include a literacy and educational component once in 3 to 5 years, to obtain data for measuring the progress achieved in levels of literacy and educational attainment. Periodicity of 5 years may be more practical and useful in countries with 5-year development planning cycles, as the survey could be timed to provide the needed data just before the formulation of a 5-year plan. However, literacy and educational modules cannot always be introduced in a household survey to be conducted just before the formulation of a new 5-year plan, as several other items may be competing for inclusion at such a time. As an alternative, it may be useful to cover literacy and education items just after 5 years of the decennial population census, so as to provide estimates for the mid point between two censuses.

In this case there need not be any literacy survey during the census years, but if the resources permit to repeat the survey quinquennially, every alternate survey would coincide with the census.

- 3.19 While there are certain advantages in collecting data on literacy and education periodically in an integrated programme of multi-subject household surveys, it may sometimes be necessary to organize an independent ad hoc survey (i.e. one round only) on literacy to meet special requirements, such as when the data for specific policy decisions are needed quickly and the required infrastructure for an integrated programme of periodic surveys does not exist. Even where the infrastructure does exist, the policy makers and planners concerned with literacy programmes may prefer to organize a specialized literacy survey with specific objectives as part of a survey programme, using the facilities of the available infrastructure, rather than make it a part of a multi-subject survey in which literacy might not receive the desired attention and emphasis.

D.COST ESTIMATES AND SCHEDULING

- 3.20 Money and time are, as in most human endeavours, essential ingredients in a survey operation. As soon as an overall survey plan is under discussion, steps are usually taken to develop approximate budget estimates for implementing the proposals and a time-table for producing the results. These preliminary figures and time-tables will need to be revised and detailed as the survey develops. Table 1, taken from the UN Handbook of Household Surveys serves to illustrate the elements involved in budgeting.

- 3.21 A detailed calendar of operations specifying all the steps that have to be accomplished helps guide the survey execution and enhances the chances for meeting its target for producing results. Preparation of a calendar can actually go hand-in-hand with budgeting. In both cases, an early exercise in spelling out all of the activities, including tentative starting and ending dates that have been examined realistically for each significant activity will prove to be extremely useful.
- 3.22 The literacy survey usually requires more time in preparation and execution than other surveys, primarily due to the complexities of developing literacy assessment instruments, and the nature of individual testing in the household. For example, in a number of surveys the head of the household (or spouse) is the primary or only respondent interviewed. But in the literacy survey, several individuals are usually interviewed and their literacy assessed, thus increasing considerably the average interview time spent with each household.
- 3.23 In particular, the preparation of assessment instruments each of which could take a significant amount of time, as there are several essential steps involved. On the other hand preparation of the survey questionnaire, if based on some of the illustrations contained in the Annexes, can be fairly straightforward, though still requiring several weeks of testing and refinement before going to print.

3.24 The preparation of assessment materials, including all pretesting and pilot-testing, can take considerably longer. Depending on the kind of expert advice available on instrument (test) preparation, one must allocate time for the following categories of activity:

- (1) decision-making on literacy (or literacies) for assessment (1-4 weeks, depending on local consensus);
- (2) preliminary preparation of test materials, including gathering of all relevant local materials in the form of tests, primers, campaign materials, etc. (2-3 weeks);
- (3) construction of preliminary assessment instrument (1-2 weeks);
- (4) pretesting of assessment instrument on small sample (about 10-15 individuals per language/literacy group) (1-3 weeks);
- (5) refinement of instruments in the light of pretesting (1-2 weeks);
- (6) training of interviewers on all procedures in preparation for pilot-testing (1-3 weeks);
- (7) pilot-testing of assessment instrument on a modest sample (2-3 weeks);
- (8) final construction of assessment instrument (1 week);

- (9) printing of assessment instrument and questionnaire
(depends on local means).

3.25 Regular follow-up meetings should be scheduled well in advance for the planning group participants. It is important to schedule meetings even for the period after the survey data collection has taken place, not only to maintain momentum on the data analysis, but also to allow the planning group to see how the results could be useful for the needs of their own government ministries or units. Table 2 illustrates a time schedule exercise for some of the most significant survey activities.

TABLE 1

TABLE 1. ILLUSTRATION OF A COST WORKSHEET FOR A HOUSEHOLD SURVEY PROGRAMME

Activity	Estimated units of work (person months except where otherwise indicated)	Unit cost (relevant unit of currency per person month)	Estimated total cost (relevant unit of currency)
I. PLANNING AND PREPARATORY ACTIVITIES			
A. Initial planning and subsequent monitoring (Senior staff).....			
B. Selection and specification of subject-matter			
1. Subject-matter planning.....			
2. Preparation of tabulation plans.....			
3. Secretarial and other services.....			
C. Development of survey design			
1. Initial design planning: survey structure, population coverage, sampling procedures, data collection methods etc. (professional staff).....			
2. Development of sampling materials:			
(a) Cartographic materials (assumes census materials available):			
Personnel costs.....			
Maps and supplies.....			
(b) Field household listings (2,000 enumeration areas):			
Personnel costs (mainly interviewers).....			
Travel costs.....			
(c) Sample selection and preparation from field lists.....			
D. Design and printing of questionnaires and other forms			
1. Professional staff.....			
2. Secretarial and other services.....			
3. Printing costs (after pre-tests).....			
E. Pre-testing			
1. Professional staff planning:			
(a) Initial preparations.....			
(b) Analysis of results and revision of materials.....			
2. Field supervisors:			
(a) Personnel costs.....			
(b) Travel costs.....			

TABLE 1. ILLUSTRATION OF A COST WORKSHEET FOR A HOUSEHOLD SURVEY PROGRAMME

Activity	Estimated units of work (person months except where otherwise indicated)	Unit cost (relevant unit of currency per person month)	Estimated total cost (relevant unit of currency)
PLANNING AND PREPARATORY ACTIVITIES (continued)			
3. Interviewers:			
(a) Personnel costs.....			
(b) Travel costs.....			
4. Preparation of instructional and training materials for field use			
1. Professional staff.....			
2. Secretarial and other services.....			
3. Reproduction costs.....			
5. Miscellaneous planning activities (for example public relations and publicity)			
6. Subtotal components			
1. Senior staff.....			
2. Professional staff.....			
3. Technical staff.....			
4. Service staff.....			
5. Travel.....			
6. Printing.....			
7. Cartography & miscellaneous.....			
	SUBTOTAL		
7. FIELD OPERATIONS			
Training of field supervisors			
1. Personnel costs.....			
2. Lodging and meals.....			
3. Travel costs.....			
Training of interviewers			
1. Supervisor costs.....			
2. Interviewer costs:			
(a) Personnel costs.....			
(b) Travel costs.....			
Data collection (including quality control)			
1. Supervisor costs:			
(a) Personnel costs.....			
(b) Travel costs.....			
2. Interviewer costs.....			
Field administration.....			
1. Field direction.....			
2. Travel.....			
3. Other costs (for example, control and shipment of materials).....			

TABLE 1. ILLUSTRATION OF A COST WORKSHEET FOR A HOUSEHOLD SURVEY PROGRAMME

Activity	Estimated units of work (person months except where otherwise indicated)	Unit cost (relevant unit of currency per person month)	Estimated total cost (relevant unit of currency)
E. Subtotal components			
1. Professional staff.....			
2. Technical staff.....			
3. Service staff.....			
4. Travel.....			
5. Travel subsistence.....			
6. Interviewing.....			
7. Miscellaneous.....			
	SUBTOTAL		
III. DATA PROCESSING			
A. Systems planning.....			
B. Computer programming.....			
C. Clerical coding			
1. Initial coding.....			
2. Quality control.....			
3. Supervision.....			
D. Key-to-disk operations			
1. Initial keying.....			
2. Quality control.....			
3. Supervision.....			
E. Computer time (including operator and maintenance costs).....			
F. Miscellaneous processing costs (Supplies etc.).....			
G. Subtotal components			
1. Professional staff.....			
2. Technical staff.....			
3. Quality control staff.....			
4. Service staff.....			
5. Computing.....			
6. Miscellaneous.....			
	SUBTOTAL		
IV DATA REVIEW AND PUBLICATION			
A. Professional time.....			
B. Publication costs.....			

TABLE 1. ILLUSTRATION OF A COST WORKSHEET FOR A HOUSEHOLD SURVEY PROGRAMME

Activity	Estimated units of work (person months except where otherwise indicated)	Unit cost (relevant unit of currency per person month)	Estimated total cost (relevant unit of currency)
SURVEY DIRECTION AND CO-ORDINATION (continuing oversight over all activities)...			
SUBTOTAL.....			
I EVALUATION STUDIES AND METHODOLOGICAL RESEARCH (may be estimated at 10 per cent of cumulative total)			
II GENERAL OVERHEAD (may be estimated at 15 per cent of cumulative total for administrative costs, space rental, general supplies and the like).....			
TOTAL.....			

Source: UN Handbook of Household Surveys

TABLE 2. ILLUSTRATION OF A TIME SCHEDULE FOR A HOUSEHOLD LITERACY SURVEY

Activity	Month from start of literacy survey project																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Overall planning and review	x	x	x																
Specification of survey goals		x	x	x	x														
Cost estimates and scheduling			x	x	x														
Survey Design:																			
Types of survey				x	x														
Sample design					x	x													
Sample selection						x	x	x											
Measurement instruments:																			
Design			x	x	x	x													
Pilot test							x	x											
Final adjustments								x	x										
Field Programme																			
Design (logistics)					x	x													
Recruitment of personnel						x	x												
Training							x			x									
Data collection											x	x	x						
Data Processing																			
Design				x	x	x	x	x	x										
Programming						x	x	x	x	x									
Processing									x	x		x	x	x	x	y			
Reporting																			
Analysis									x	x	x	x	x	x	x	x	x	x	x
Reporting													x	x	x	x	x	x	x
Dissemination																x	x	x	x

E.LOCATING ADEQUATE TECHNICAL PERSONNEL AND MATERIAL RESOURCES

3.26 Since the literacy survey may require more expertise, particularly in the area of literacy and numeracy assessment, than is usually available in the CSO, and because of the number of government units already involved in literacy work, it is advisable to directly involve and engage outside expertise. In particular, it may be helpful to call on these resources (either national or international) to aid in the development of the assessment instruments, and the CSO should also try to recruit expertise from participants (such as university literacy specialists). In addition, data analysis skills for testing and interpretation of test scores, neither of which is usually available in CSO's will also be needed. Given this diversity of needed expertise, it is especially important that the CSO convey to a single individual (the survey co-ordinator) the overall responsibility for the survey, from the beginning to the completion of the final report.

3.27 In most aspects of financial and human resources the needs of the literacy survey will be similar to other surveys. Supplies, materials and vehicles for reaching rural areas are likely to be similar to previous survey work. In terms of human resources, there will have to be a planning group (as mentioned in 3.1) and a survey co-ordinator, a group of regional supervisors, and a number of interviewers working directly under each supervisor. The number of supervisors and interviewers will depend, of course, on the size of the survey sample. It should be remembered, however, that since more household members will be interviewed and assessed than in most other types of surveys,

more interviewers and/or more time will have to be allocated to survey data collection.

- 3.28 Since the literacy survey will often be carried out among households who not only speak different languages, but also have different literacy abilities, it is important to include bilingual and trilingual and bi-literate and tri-literate interviewers in regions where multiple languages and literacies are regularly practiced. Since not all interviewers are likely to have these linguistic and literacy skills, the co-ordinator should try to allocate multilingual interviewers to regions or locales where multilingual respondents are most likely to reside.

F.SURVEY POPULATION AND DOMAINS OF STUDY

1) Coverage

- 3.29 A detailed definition of the target population (beyond the general concept discussed in 3.12) is now needed for operational purposes. Discussions may lead to a compromise which differs from the original goal. It is often not possible to conduct a survey covering the entire target population: certain types of units have to be excluded from the survey because they may be very costly or otherwise difficult to cover; persons belonging to non-significant (see 4.19) linguistic groups may be excluded; if necessary, persons living in remote, isolated areas, immigrant populations, nomads and citizens living abroad may be excluded because of the difficulties in data collection and/or low relevance of the data for national planning and/or because

they are subjects of specific government programmes with separate monitoring and evaluation procedures. The population remaining after all exclusions, usually referred to as the survey population, is the one from which the sample is drawn.

2) Exclusion rules

3.30 Another type of exclusion may be made in a literacy survey at the measurement stage during the survey investigation, for ruling on which two suggestions are offered for consideration. First, age groups. The planning group will need to decide according to national needs and priorities, and resources available, whether to include all household residents 10 years and older, or 15 years and older. There are pros and cons to each cut-off point and these should be discussed within the planning group. Using the higher age point (15 years) will definitely save resources, but will skip the 10-14 year age group which is included in UNESCO's Recommendation (1978), and which is undergoing rapid change in many countries, particularly in terms of women's education and fertility rates. It is also possible to consider excluding adults over a certain age (such as 55 years) from testing procedures, since these individuals are less likely to be retrained to re-enter the work force in many countries. Clear rationales must be provided for any exclusion rules of this type.

3.31 Second, consideration may be given to the exclusion from part of the literacy assessment of individuals who have already received certain minimum education, and are, therefore, assumed to be literate. In this case, it is suggested that persons with

"successful completion of primary level" according to national standards (final test, certificate, etc.) be excluded from the literacy testing procedures.

3) Domains of study

3.32 Once the survey population has been clearly defined, the domains of study - major segments of the survey population for which separate statistics are needed -- should be amply discussed and agreed on. In the course of tabulation data may actually be provided for many population segments; however, a domain of study would be a segment identified as one for which a certain level of detail and certain data reliability were required at the planning stage. The definition of domains of study will have a direct impact on sample size and overall budget for the survey.

3.33 It is generally desirable to provide reliable estimates of the literacy level and other educational characteristics of the survey population at national level with urban/rural breakdown, for major regions defined for planning, development or administrative purposes, and for population sub-groups of national interest such as cross-classifications by age and sex, ethnic groups, religious affiliation and mother tongue. Obviously, there should not be too many domains of study in any one analysis, so that the demand on overall sample size is not drastically increased.

G. SAMPLE SIZE

- 3.34 The determination of sample size is generally based on both the given budget for the survey and the required level of reliability for the estimates. It would be preferable to start with the latter, and when the budget is a constraint to assess the precision that can be achieved under that constraint, and decide whether it is acceptable or if the budget must necessarily be increased. Also, since estimates are required for certain domains of study, calculations have to be made for every domain and the resulting sample sizes added up (when geographical) or compared (when categorical), or both, to arrive at the national sample size. Flexibility and compromise within the planning group will be required to arrive at a final sample size.
- 3.35 To illustrate some of the calculations involved, consider the following exercise. But first it should be pointed out the illustration is oversimplified as the literacy rate is actually the estimation of a ratio and not a percentage, and, furthermore, the illustration should not be taken as a recommendation, since the sample size, n , is highly sensitive to the assumed value of the design effect.
- 3.36 In this exercise, it is assumed that the overall prevalent rate of illiteracy is somewhere between 20 and 30 per cent for age group considered appropriate, 10+, as estimated from previous surveys, censuses, pre-tests, or other studies (considerable deviations from this "guesstimate" would not affect the computations very much). Let r be the estimate that the

literacy survey will produce, and R the true value of the parameter. Assume also that the object is to measure this rate within 3 percentage points, $|r-R| < .03$, at the 90 per cent confidence level ($\alpha = .10$), or within 1.6 standard errors.

3.37 A common procedure is to make computations using assumptions of simple random sampling of population, and then adjust upward to allow for a clustered design. Hence, we start with

$$\sigma_r^2 = \frac{r(1-r)}{n} (1-f)$$

where:

σ_r^2 = the sampling variance of r

r = the overall rate of illiterates, using the value .25 in the calculations

f = the sampling ratio, that is, the proportion of all persons 10+ that are sampled. When the sampling ratio is small, as for most household surveys, $(1-f)$ is usually taken as 1, as will be in this exercise.

n = sample size

3.38 Since it is desired to measure the rate r within 3 percentage points at a confidence level of 90 per cent, then

$$\sigma_r = \frac{.03}{1.6} \quad (\text{since } |r-R| < .03 = 1.6\sigma_r)$$

$$= .0188$$

$$\text{and } \sigma_r^2 = .000353$$

- 3.39 Substituting in the equation in paragraph 3.37 and solving for n , a value close to 531 persons is obtained. If all persons 10+ within a household are to be interviewed, and if on the average there are 3 such persons, then approximately 177 households are needed.
- 3.40 If it is taken into account that the sample will not be a simple random sample, but probably a stratified clustered sample, the design effect, D , must be allowed for. The value of D depends upon the size of the cluster (to which it is highly sensitive) and the heterogeneity (i.e. variability) of the survey population within the clusters used to select them (households and groups of households). It is usually derived from previous surveys, pilot tests, or is based on census data. A value of $D=3.5$ will be used in this exercise. Thus the required number of households to be selected is now approximately 620 (177×3.5).
- 3.41 If five to ten geographical domains of study are needed, the number of households in the sample will be between 3,100 and 6,200. If a particular cross-classification is used as a study domain (e.g. age-by-sex), then this should be accounted for by using the age-by-sex structure of the population from a recent survey or census and also by estimating the number of cases obtained from the sample size being considered in order to see if it satisfies the demands of the cross-classification, or if it should be adjusted to fewer cells, or the sample size increased.

3.42 Finally, the sample size should be adjusted to account for the cases lost to non-response. Previous surveys can provide good "guesstimates" as to its expected level. The expertise of the CSO can be put to good use in this topic as well as the following one (sample design) and should be sought at an early stage to have sufficient time to select the sample. Finally, it must be kept in mind that the different requirements on precision and confidence, sampling procedures at the household level (e.g. interview all vs. only one element belonging to the survey population), design effect, domains of study, non-response, etc., will lead to different sample sizes of households.

H. SAMPLE DESIGN

3.43 Once the survey population is defined and the approximate sample size is known, it is necessary to have a sampling plan or sample design in order to reach the persons to be interviewed and tested. A sample of housing units or households is usually selected by adopting a stratified multi-stage sampling procedure. Details of different sampling procedures are contained in the NHSCP manual on "Sampling Frames and Sample Designs for Integrated Household Survey Programmes". Note that the requirements for a literacy survey with respect to sample design, are not intrinsically different from any general-purpose household survey. Thus, if an adequate sampling frame or current survey sample already exists which might be used for the literacy survey, then a major component of the survey task is simplified considerably.

3.44 To illustrate, let us consider some features of multi-stage sampling. First, the country is divided into several strata (hopefully homogeneous for efficient sampling), which may be the major political or administrative divisions (e.g. districts, provinces, states) or groups of them. These strata may coincide with some of the domains of study. Next, each stratum may be divided into smaller administrative units such as districts or zones, some of which may be predominantly urban and others rural. In a three-stage sampling plan, these would constitute the first stage or primary sampling units (PSU's), since at the first stage a sample of these units will be drawn to represent both rural and urban areas adequately. Next, from each sampled PSU, a sample of second stage or secondary sampling units (SSU's) will be selected, which would be smaller areas with well-defined boundaries (e.g. administrative blocks, villages or specially defined areas like enumeration areas used in a population census), each consisting of a number of housing units or households. Frequently, there are from 100 to 200 households in an enumeration area. At the third stage of sampling, 5, 10 or 20 housing units may be selected from within each SSU. There is close to a one-to-one correspondence between housing units and households, with perhaps small variations from strata to strata.

3.45 Frequently, a two-stage only sampling procedure is used. Then each stratum is usually divided directly into enumeration areas, which become the first stage units, while the housing units or households become the second stage units. In such a situation, the strata are generally smaller in size and greater in number than in three-stage sampling.

3.46 In order to select samples, whether it be a sample of PSU's or of housing units or households, sampling frames are needed, that is, lists of units (or well-defined areas) in which each and every sampling unit is listed (contained) distinctly and without duplication. The advantage of multi-stage sampling is that the sampling frame has to be prepared for only those SSU's which are included in sample PSU's - and similarly for subsequent sampling stages. Thus, there could be a considerable amount of saving in the cost of preparing sampling frames, and also in the cost of travel for data collection, as the houses included in the sample are clustered in the sampled areas.

3.47 The procedure recommended for selecting units at any stage of sampling is that of probability sampling which ensures for all units at each stage a known chance of being included in the sample. Selection of PSU's or SSU's is frequently done according to probability proportional to size (i.e. PPS; the size of the population of the PSU or SSU) and systematic or simple random sampling at the last stage, combined to produce overall self-weighting samples which are convenient for simple processing and estimation procedures of population parameters.

3.48 When self-weighting samples are not desired (e.g., over-representation of some sub-populations may be required) or not possible or not achieved due to execution contingencies of the sample design (e.g., poor measures of size, faulty cartographic materials, etc.), proper procedures must be followed to determine and record the actual sampling probability of each household and thus determine its proper

weight. These weights will need to be entered at the proper step in data processing to permit producing population estimates based on sample data (see 4.27). Current available software for both mainframe and microcomputers allow for easy handling of weighted data.

- 3.49 Updated lists of sampling units are hard to come by, specially in the latter and ultimate stage, so area samples are often used. A fundamental requirement for area sample selection and later for enumeration purposes is adequate maps and other cartographic materials. Many CSO's will have a considerable store of these materials on hand as a result of prior population censuses and the capability to update or otherwise adapt these materials is also likely to exist. However, this is a complex and time-consuming operation which needs adequate budgeting and scheduling. The planning group will do well if it bears in mind that this has high priority.
- 3.50 Finally, it may be observed once more that in countries which already have a programme of periodic or continuing household surveys, the sampling frame and design developed for them can be profitably used for literacy surveys whether they are independent surveys or components of general surveys.

CHAPTER 4. SURVEY CONTENT AND INSTRUMENTS

- 4.1 It must be strongly emphasized again that for difficult decisions regarding the types of data and degree of detail to be retained in the field of literacy and education for a given household survey, very close cooperation must be established with those who will use the results of the survey. Only after a careful examination of survey content with users and with specialists in the various fields of statistics will it be possible to arrive at a realistic and balanced decision on the data needs choice of items and degree of detail. The survey goals discussed in general terms by the planning group now have to be stated in operational terms in order to clearly envision the required survey products as well as the instruments and procedures that will produce them. Development of the survey questionnaire and other measurement instruments should be an activity closely tied to (and interactive with) the tabulation plan. These two topics will be discussed separately, but the reader should never lose sight of the inter-dependency of these activities. Once more, as discussions progress, flexibility and compromise will need to be exercised to bring the "desirable" and the "operationally attainable" closer together towards a feasible and successful survey endeavour.
- 4.2 The survey questionnaire, as discussed below, may be derived to a great extent from prior household survey questionnaires, since the literacy survey requires a similar sort of background information. By contrast, the literacy assessment instrument involves materials quite different from those typically used in other household surveys. In particular, it would be very

useful to gather all available types of literacy assessment materials from local sources, such as schools (and school textbooks), literacy campaign organizations and religious organizations wherever literacy teaching and assessment have taken place.

4.3 In certain topics, household surveys have made increasing use of measurement rather than complete reliance on self-report. Even though somewhat more time-consuming, direct measurement of such indicators as infant height and weight, energy consumption, and literacy ability are thought to bring much greater reliability and validity to policy issues. Thus, structured interviews combined with direct assessment of literacy ability are thought to be the preferred method of obtaining information about literacy in a given society. As noted in the following sections, the complementary nature of both, questions and assessment, can also provide useful opportunities to extrapolate findings to other data sets.

4.4 The survey content and instruments will rely heavily on a well defined conceptual framework. Some basic conceptual issues, taken from the Handbook of Household Surveys and pertaining to education variables in general, follow in paragraphs 4.5 - 4.29 and will be particularly useful in defining the survey questionnaire.

4.5 Concept of education for statistical purposes: A general discussion of conceptual issues should first concentrate on delimiting the field under study, namely, education. The first concern is to draw the boundaries of the universe to be covered

as neatly and sharply as possible. Numerous words and concepts may be encountered in education terminology, such as education, instruction, learning, training, study courses and programmes of different levels and types intended for a variety of groups and specific categories within the population and with a broad range of objectives. This is not the place for a full-fledged discussion of such words and concepts nor for an attempt at a comprehensive definition of education for overall purposes, and still less for trying to impose a standardized philosophy, aims, or content of education or reflect on its ideological or cultural aspects. What is essential here is to have a simple, deliberately short definition of education, even if it is arbitrary, to meet the practical requirements of statisticians. Such a definition is given in the International Standard Classification of Education (ISCED) established by UNESCO, namely:

"Education is taken to comprise organized and sustained communication designed to bring about learning".

- 4.6 For a proper interpretation of this definition, the following supplementary clarifications are provided: a) communication requires a relationship between two or more persons involving the transfer of information; b) "organized" is intended to mean planned in a pattern or sequence with established aims or curricula; it involves an educational agency which organizes the learning situation and/or teachers who are employed (including unpaid volunteers) to consciously organize the communication; c) "sustained" is intended to mean that the learning experience has the elements of duration and

continuity; d) learning is taken as any change in behaviour, information, knowledge, understanding, attitudes, skills or capabilities which can be retained and cannot be ascribed to physical growth or to the development of inherited behaviour patterns.

4.7 Included, therefore, are activities that in some countries and in some languages may not usually be described as education, but rather as training or as cultural development. Excluded, however, are types of communication that are not designed to bring about learning or that are not planned in a pattern or sequence with established aims. Thus, all education involves learning but many forms of learning are not regarded as education. Leisure activities such as recreation, sports, and tourism which are not designed to bring about learning and which do not involve an organized educational programme are excluded from education. "Self-directed learning", "family and socially directed learning" and "random learning" are excluded because they involve no organized agency or teacher in the above sense. Also excluded are isolated events involving no sustained educational activity, such as one or two public lectures, conferences or meetings, entertainment, information, advertising and sales programmes, other social and corporate activities, such as meetings of clubs or associations and work camps.

4.8 Principal types of education From the administrative and organizational point of view, there are three principal types of education to be distinguished: a) regular education; b) adult education; c) special education.

- 4.9 The first type of education corresponds to the traditional educational system, at all levels, that is, the system that provides a "ladder" for children and young people to progress from pre-primary or primary school to university (although many drop out on the way). Education of this type is covered regardless of ownership or sponsorship of the institution concerned (for example, public or private).
- 4.10 The second principal category, adult education, comprises education provided to people who are not in the regular school and university system, including adult literacy programmes as well as organized and sustained training for such groups as farmers, craftsmen, industrial workers and homemakers. Programmes of this kind may be arranged by government departments, industry, trade unions, the armed forces, and many other agencies. From a statistical point of view, this implies that this category is a highly differentiated and complex one, giving rise to numerous problems with regard to data collection as its administrative framework is much less rigid and well-defined than for the regular education system. However, the statistician must face these difficulties and find practicable solutions so that the data collected reflect the factual situation as faithfully as possible.
- 4.11 In the past, the adult education sector was of relatively minor quantitative importance in many countries. Presently, however, in line with modern developments in educational policy and planning, it is widely recognized that education is not an instructional "package" provided to children and young persons in schools and universities, but a continuing process providing

opportunities for enlarging experience, understanding and skill throughout the life of the individual through "permanent education" or "life-long education". Household surveys, because of their comprehensive population coverage, are well-suited to collecting statistics in this section.

4.12 The third category is, in effect, one which overlaps the former two categories in the sense that special education, organized specifically for various groups of handicapped or otherwise exceptional children, adolescents, or adults, may be provided within both the regular and the adult education systems.

4.13 Content of education It should be noted that teaching and learning may take place in all kinds of places, for example classrooms, community centres, the open air; by many methods, for example lectures, discussions, practice work, correspondence, and through many media, such as books, teaching machines, radio, films, and television. It is thus the content and objectives of a learning process rather than the organizational technical arrangements that determine whether any given process should be considered education or not. Given this conceptual focus on content or subject-matter, it is appropriate to give here a brief presentation of current terminology in that respect.

4.14 The simplest unit of education is a course. It represents a planned series of learning experiences in a particular range of subject-matter or skills, offered by a sponsoring agency and undertaken by one or more students. One or more courses oriented towards a specific field and with an expressed or

implied aim, such as qualification for more advanced study or for one or several occupations, or solely an increase in knowledge and understanding, constitute a programme. Programmes which are related in terms of level and major subject-matter content may be combined into programme groups, identified in the ISCED system by a five-digit code. Programme groups related to the same general subject-matter or area are further aggregated into fields (ISCED three-digit code).

- 4.15 Level of education: This final concept (ISCED one-digit code), corresponds to the broad sections across the education "ladder", that is, in the progression from very elementary to more complicated learning experiences, to each stage of the progression, all fields and programme groups included.
- 4.16 Use of ISCED in household surveys: As has been explained, the International Standard Classification of Education is a three-stage classification with a coding system of five-digits, providing successive subdivisions from level to field to programme group. This system, adapted as necessary to particular conditions and requirements in the country concerned, may also be used in household surveys for classification of education. The degree of detail will depend on the purpose and nature of the survey. At this stage, it will suffice to indicate some basic elements in the ISCED system.
- 4.17 The "education ladder" is made up of the following major levels: a) Education at the first level (ISCED category 1), which usually begins between ages five and seven and lasts for

about five or six years; b) Education at the second level, first stage (ISCED category 2), which begins at about age 10 - 12 and lasts for about three years; c) Education at the second level, second stage (ISCED category 3), which begins at about age 13-15 and lasts for about three years; d) Education at the third level (ISCED categories 5, 6 and 7), which begins at about age 17-19 and is of varying durations depending upon the stage, as discussed below.

4.18 A more comprehensive picture of the ISCED level-category pattern is obtained by using the one-digit classification in full, as follows:

- 0 Education preceding the first level
- 1 Education at the first level
- 2 Education at the second level, first stage
- 3 Education at the second level, second stage
- 5 Education at the third level, first stage, of the type that leads to an award not equivalent to a first university degree
- 6 Education at the third level, first stage, of the type that leads to a first university degree or equivalent
- 7 Education at the third level, second stage, of the type that leads to a post-graduate university degree or equivalent
- 9 Education not definable by level

4.19 Here two new categories have been introduced: 0 (for pre-school education, nursery schools, kindergartens and similar institutions) and 9 (for types of education which do not lend themselves to the level concept). In addition, education at the third level has been broken down into three categories to

provide for a more differentiated presentation of what has usually been called "university and other higher education" or "post-secondary education".

4.20 The next category in the ISCED system is the field. A detailed description of this part of the structure is beyond the scope of the present discussion, thus, ISCED itself should be consulted. However, by way of example, it may be mentioned that the two second level categories (ISCED codes 2 and 3) can be subdivided into the following major groupings of fields:

- a) General education, which stresses the theoretical, philosophic and mathematical subjects, with little emphasis on technical subjects dealing with practical skills (ISCED codes 201 and 301);
- b) Teacher training (ISCED codes 214 and 314);
- c) Other education at the second level (ISCED codes 224, 234, 250, 252, 262, 266, 270, 278, 289, 318, 326, 334, 350, 352, 354, 362, 366, 370, 378 and 389).

4.21 With a similar subdivision at the third level, one arrives at an intermediate grouping of levels and fields comprising 18 categories, which might be of interest for some household surveys. The full three-digit classification contains some 100 categories and is thus relevant mainly for specialized surveys aiming at an in-depth study of education.

4.22 Other conceptual issues of a general nature Having dealt above with central conceptual issues in the field of education, this section will refer to a few concepts and terminology specific to educational statistics in order to help place this whole area, educational statistics, in perspective.

4.23 Stock/flow Educational statistics in the past were predominantly static. Figures were presented for number of pupils registered (enrolment) and teachers engaged at given points in time, without any attempt to describe in detail the continuous process of evolution and change in these respects during and, above all, between the school years. In modern educational statistics, there is a very clear trend towards a more dynamic approach. To this end, the concepts of stock and flow have been introduced. Instead of simply observing and reporting net changes in enrolment figures (stock data) from one school year to the next, educational statisticians have recently developed and improved methods to follow cohorts of pupils year by year as they progress through the educational system (flow data). These are used to describe what happens to cohorts at each particular step of their "school career". The same flow approach can be used for teachers, analysing the movements into, within and out of the teaching staff.

4.24 Even with modest means, it is feasible to arrive at a fairly satisfactory data base for flow studies. With a view to assisting countries where only stock data still exist, UNESCO has developed a methodology for flow analyses that gives special attention to evaluation of "educational wastage". Another methodology of interest to developing countries has been designed using specific registration numbers for pupils, identifying them with the original cohort of school entry. This coding system represents a substitute for a complete individualized data system and is intended for countries where lack of computer facilities makes the latter, more sophisticated approach impractical.

- 4.25 Educational wastage: This important concept is currently used as a "main heading" for the two phenomena of "repetition" and "drop-out". For statistical purposes, the following definitions may be used. Drop-out or school desertion: leaving school before the completion of a given stage of education or leaving at some intermediate or non-terminal point in a cycle of schooling. Repetition: a year spent by a pupil doing the same work in the same grade as in his previous year in school. Educational wastage: incidence, in a country's education system, of drop-out and repetition.
- 4.26 Very high levels of drop-out and repetition constitute an extremely serious problem in some countries. Continuous analysis is then indispensable to evaluate what might be called the internal efficiency or the "output" of the educational system. This is all the more important in situations where available resources are severely limited and where it is, therefore, imperative to use them with maximum efficiency. Household surveys may be used to collect data on enrolment, repetition and drop-out using a retrospective approach to obtain in-depth data at individual level.
- 4.27 Educational disparities: This concept also focuses on potential deficiencies of the educational system. Here it is the social aspect that is decisive, namely, questions of equal access to various kinds of education, the position of different population groups vis-à-vis the educational infrastructure, handicaps of a geographical, economic, cultural, ethnical nature, and the like. This area has so far been much neglected, as traditional educational statistics have tended to

the education system in terms of structures and institutions. The resulting information gap can be filled by using the household survey approach, in which the unit of observation is the individual, since the concern is with the individual's relation to the supply of educational services, that is, how people avail or do not avail themselves of educational facilities. In this connection, other concepts such as access to education and distance to school also come to the fore.

- 4.28 Although this relatively new and unexplored sector of educational statistics still lacks a generally accepted conceptual framework and a standardized terminology, the situation is changing as interested survey organizers undertake new work in this area and try various approaches in order to shed light on a complex problem of great importance for educational policy and planning.

A. CREATING THE SURVEY QUESTIONNAIRE

- 4.29 NHSCP, and the United Nations more generally, have considerable experience in the development and design of questionnaires for the collection of information through household surveys on a wide variety of subjects and topics of social concern (cf. NHSCP 1985). For the study of literacy and education in general, there are a number of well-known methodological standards for data collection, classification and analysis, such as the International Standard Classification of Education (Unesco, 1976D) mentioned above, and various documents for the evaluation of education programmes.

4.30 However, there are currently no well-established procedures available in a published form on questionnaires for the specific study of literacy at the household level. One of the purposes of this document is to contribute to the rectification of this situation. Questions concerning education, language use and educational background have, however, appeared in various surveys in recent years. The basic structure has two parts: the first is for the "principal respondent" (i.e., the person who agrees to speak for the household and/or is informed of general data on the household) and the second is designed for the "individual respondents" (all persons 10 or 15 years of age or older, depending on the chosen age range) in the family dwelling. Some of the central elements of the interviews in these surveys have been pulled together and used in the NHSCP household survey completed in Zimbabwe (see Annex C). The general procedure used in the Zimbabwe case may be applicable in other countries as well.

4.31 The principal respondent questionnaire is intended ideally for the head of household or spouse, and is designed to gather information on family composition by listing each person by age, sex, ethnic group, maternal language, education, occupation, as per other household surveys. It is also important to know which children within the age range included in the survey (10 or 15 years and above) may be still attending school, and where that school is located. This information may be especially helpful for assessing school-aged children in the sample, for they can then be gathered at the school and interviewed and assessed in an efficient manner.

4.32 The individual questionnaire should be administered to each respondent 10 (or 15) years or older in the survey sample, including the head of household. This questionnaire will generally include individual educational history (educational attainment, school attendance), including participation in any kind of literacy classes outside the school experience. In addition, self-assessment on a variety of questions concerning literacy abilities, languages and scripts (orthographies) used, and how much reading, and writing the individual engages in on a regular basis are also included. Examples of this type of individual questionnaire may be seen in Annex C.

B. CREATING THE LITERACY ASSESSMENT INSTRUMENTS

4.33 Unesco (1978, p.2) has recommended two principal methods for the determination of literacy at the national level: (a) self-assessment as part of a complete census or sample survey; and/or (b) use of a standardized test of literacy in a special survey. Both of these methods are recommended for use in household surveys, since they each provide useful and complementary data.

1) Self-assessment

4.34 Due to the complex nature of literacy assessment, most national assessments of literacy have involved one or more simple questions addressed to the respondent, such as "Can you read and write?" Occasionally, census takers have collected information on the language or languages involved in the above question, but rarely has there been time or resources invested

beyond this point. Analysis of the relationship between self-assessment and direct measurement of literacy abilities has rarely been carried out; available information suggests that the correlation between self-assessment and measured literacy can be relatively high or low, depending in part on the rapport between the survey interviewer and the respondent being interviewed, and in part on the respondent's "concept of literacy". There are cases where a respondent might be literate only in a non-official language and therefore believe himself or herself to be non-literate or be viewed as such by survey interviewers. Thus, especially given the generally low level of social science training among survey field workers, it would seem prudent to complement self-assessment with the direct measurement or assessment of literacy in a household survey.

- 4.35 The tradition of using self-assessment in the estimation of national literacy rates is such that it is important to continue to collect and aggregate these data for comparison with prior estimates. While different countries have utilized different definitions, the basic categorization has referred to the dichotomy "illiterate" versus "literate". It is important to retain this terminology so as to provide continuity with other data sets. It is hoped that the joint use of both self-assessment measures and direct measurement will provide a better sense of the utility of these two methods.

2) Direct measurement instruments

- 4.36 Direct measurement instruments are tests constructed for the purpose of assessing individual literacy abilities. The large number and variety of literacy assessment instruments precludes a complete discussion within this document. Generally, they all attempt to balance what are sometimes referred to as "objective" and "subjective" measures.
- 4.37 Objective measures are tests to elicit valid and reliable data from the individual, with rather strict controls on the context and structure so that all individuals have the same chance to answer correctly. An example is the multiple choice test, in which, on the basis of reading a short paragraph or text, the individual is asked to choose among 4 responses that which best describes the information contained in the paragraph. These measures are usually quite reliable in school settings and for silent reading, where test-retest correlations and cross-test correlations may be quite high. Their use in non-school settings and with low-literate adults is less known, since these tests assume a certain equivalence in "test-taking skill" across individuals tested. Given that these assumptions are adequately validated in the test design stage, such objective tests are particularly useful in settings where the interviewer has little prior experience in literacy assessment, since relatively little interpretation of test performance is required.
- 4.38 Subjective measures require making a judgment about the performance of the respondent being assessed. Thus, an

interviewer might judge that a respondent reads "well" or "poorly" based on some criteria which may be more or less well-related to judgments by other interviewers. In certain domains, such as judgments concerning writing ability, subjective assessments have been more widely used. Naturally, the more well-trained the literacy interviewer the more likely that he or she will make consistent and accurate judgments. The survey issue, however, is not whether an individual interviewer makes consistent or accurate judgments but whether there is consistency across interviewers or interviewer variance. If no previous studies are available on interviewer variance, it would be best to have many interviewers with smaller assignments so as to neutralize interviewer variance as much as possible and thus produce better subjective measures of literacy.

- 3.39 It should be understood that both objective and subjective tests have one obvious point in common: both seek to measure individual performance. Though distinguishable from one another in a rough manner, there is clear overlap, since no measure is entirely subjective or objective. An important implication is that, given the fact that survey interviewers and supervisors are typically untrained in educational assessment, objective measures should be used as much as possible in literacy assessment as long as all tests can be pretested to guarantee a level of validity and reliability.

C. OPERATIONAL DEFINITIONS

- 4.40 Operational definitions of literacy and related categories are needed to clearly understand and define the corresponding questions and procedures to be used in the survey questionnaire(s) and assessment instrument(s), and different countries and different circumstances will be reflected in different survey goals and survey capabilities. Accordingly, the literacy survey can vary from a very basic to a highly complex operation. In what follows this technical study stresses the basic approach in what follows, and adheres to the current Unesco recommendations and definitions.
- 4.41 For countries with considerable experience and sufficient data gathered through the basic approach -- both self-assessment and direct measurement -- Chapter 6 offers a discussion of some of the issues that need further development in going beyond the basic dichotomy between "literacy" and "illiteracy". The presentation in that chapter is intended to motivate further discussion through illustration of how additional information might be effectively utilized.

1) Basic Categories based on self-assessment

4.42 Citing Unesco (1978), "a person is literate who can with understanding both read and write a short simple statement on his everyday life." In the censuses of many countries respondents have been asked some variation(s) of the question "can you read and write?". Similar questions are included in the individual interview section of the household survey directed at the respondent's estimation of his or her own literacy abilities. For the purpose of comparison with prior data sets, it is suggested that a respondent who says "yes" to the question "Can you read?" and also to the question "can you write?" (or some variation used in previous censuses and/or household surveys) be classified as "literate"; all others are defined as "illiterate". Again, it is important to bear in mind that this dichotomy represents the traditional basis for international comparability in self-assessment measures. Thus, the two basic definitions in self-assessment are:

I. ILLITERATE

A person is "illiterate" who says he/she cannot read and write with understanding a short simple statement on his/her everyday life in a significant language of his/her choice.

II. LITERATE

A person is "literate" who says he/she can both read and write with understanding a short simple statement on his/her everyday life in a significant language of his/her choice.

4.43 How to determine whether the response includes the concept of "with understanding" restricted to "a short simple statement on his/her everyday life" is a different and complex matter. Frequently, it is simply assumed to be the case; occasionally, the question(s) specify an ambiguous context as in: "Can you read a simple message?" The basic definitions I and II are formulated with the intention of describing a "bare minimum". The key words "with understanding" are meant to eliminate any kind of merely mechanical ability with no practical meaning; "a short simple statement" to indicate a quite humble level of communication; and "on his/her everyday life" to signify that the message refers only to things that are very elementary and familiar to the person concerned.

4.44 Specific interview techniques and tools have to be developed, taking into due account relevant national, cultural and, where required, linguistic factors. The enumerators must be carefully prepared and trained in applying such techniques and methods of measurement through self-assessment in order to determine the degree of literacy of respondents as accurately as possible. In particular, detailed instructions should be given concerning the use of control questions for checking the reliability of the answers.

2) What is a significant language or literacy?

4.45 To operationalize the classification into the categories of the basic approach needs specifying what is meant by "significant language" and restricting or not the provision "of his/her choice". A significant national language typically includes

the national (or official) language or languages of the country, and languages which are spoken by significant linguistic groups in the country. Which literacies should be assessed depends on three factors: whether or not the language has a script and is used for literacy activities; the national language policy of the country, and available survey resources for assessment (though the increase is marginal in self-assessment). To determine which languages/literacies to include, an arbitrary cut-off point might be picked, e.g. where the estimated population of a minority group exceeds a certain percentage of the national population, or simply the most used three languages/literacies might be selected. In practice, of course, there are countries such as China and India where even a small percentage may represent such a large number of people that smaller linguistic/literacy groups might need to be assessed; conversely, in countries such as Niger and Botswana, where many small population groups exist, a different strategy may be necessary.

4.46 Naturally, there are also cases where a major spoken language has a written script (orthography), but is not used in education or other official contexts, so that its literacy usage is quite restricted. Such an example would be Vai literacy in Liberia, as documented in the work of Scribner and Cole (1981). Whether to assess for Vai literacy would be a matter for the survey planning group to consider.

4.47 Most countries have formulated an explicit language policy, which typically states which language or languages have official status. Often, the decision on national or official

languages(s) is based on such factors as major linguistic groups, colonial or post-colonial history, and importance of a given language to the concerns of economic development and international trade. Official languages are also those commonly used in public schools, though there may be differences between languages used in the beginning of primary school and those used later on.

4.48 More than three decades ago, Unesco (1953) suggested that the use of local or "vernacular" languages would optimize learning and literacy acquisition, and many countries followed this recommendation by using local languages in both primary schooling for children and in non-formal literacy programmes for adults.^{1/} There has been surprisingly little evaluation of this assertion in terms of adult literacy since its original proposal, though some recent studies appear to be in contradiction (Sjostrom & Sjostrom, 1983; Wagner, Spratt and Ezzaki, 1988).

.49 While there is general agreement in that the official language(s) ought to be assessed in a literacy survey, there may be disagreement over the assessment of literacy in non-official languages (where these have a recognized and usable orthography). For example, in a number of countries, there exist a multitude of local languages which have varying status with respect to the official language; how these languages and literacies are included in the survey may be a matter of debate. In certain predominantly Muslim countries in sub-Saharan Africa, the official language/literacy might be French or English, while Arabic -- which may be taught in

Islamic schools and used by a sizeable population for certain everyday and religious tasks -- may be excluded from literacy assessment. In this case, the CSO and the planning group will have to come to a determination of the proper approach on a country-specific basis.

3) How many literacies per person should be assessed by self-assessment?

4.50 The present technical study supports the proposition that all literacy abilities constitute human and national resources. To ignore such abilities is to underestimate these resources. The basic approach as defined in 4.42, allows self-assessment in any significant language of the respondent's choice. This implies accepting a "yes" answer to both of the basic questions "can you read? can you write?" in any significant language as sufficient to categorize a respondent as literate. If the planning group decides to evaluate literacy rates on each (or some) significant language, then the provision "of his/her choice" in (I) and (II) in 4.42 should be restricted. This implies repeating the self-assessment question(s) in the individual questionnaire for each selected significant language: Can you read in.....? Can you write in.....? The survey budget will not be significantly increased, though the burden in the respondent might prove counter productive if too many literacies are self-assessed.

1/ (See Hamadache & Martin, 1986; Ryan, 1985)

4) Basic categories based on direct measurement

1.51 Utilizing the basic literacy-illiteracy dichotomy in direct measurement is far less common in international studies. Indeed, the nature of direct measurement is such that finer distinctions in terms of skills and processes (e.g. writing as different from reading; comprehension as different from decoding) are needed. Nonetheless, it is recommended that the basic dichotomy be employed in order to validate the self-assessment dichotomy. When experience and resources permit, a more useful and comprehensive breakdown of literacy ability can be employed, such as that described in Chapter 6. The basic definitions given in 4.42 need to be re-worded when the assessment is by direct measurement:

III. ILLITERATE

A person is "illiterate" who cannot read and write with understanding a short simple statement on his/her everyday life, in a significant language of his/her choice (that determined by the planning group), as determined by the direct assessment instrument(s).

IV. Literate

A person is "literate" who can both read and write with understanding a short simple statement on his/her everyday life in a significant language of his/her choice (that determined by the planning group), as determined by the direct assessment instrument(s).

4.52 How many literacies per person should be assessed by direct measurement?

In most situations where resources are limited, the approach would be to assess by direct measurement only in the official language(s) taught in formal schooling, and in the respondent's primary household language (either mother tongue or a written language used by household members). This method would tend to set a two-literacy limit for individual assessment by direct measurement as well as reduce the number of potential literacies to be assessed in a given country. In countries where resources are even more restricted, it may be necessary to simply ask the respondent the literacy in which he or she is most proficient, and simply assess in that single literacy (procedure close to "in a significant language of his/her choice"). If resources permit, and the respondent claims knowledge of more than one literacy, a second language/literacy assessment is advised. Note that, even though an individual may be assessed in only one or two literacies, the survey itself may be obliged to prepare more than two literacy instruments, depending on how many significant languages there are in the country.

4.53 Given the time-consuming effort to create parallel assessment instruments in multiple languages and literacies, a balance will have to be achieved in each situation. Resources may simply not be available in the short term to create all the assessment instruments desired, and some of this work can be left to later surveys. As a compromise, relatively small linguistic groups might be directly assessed in the official

language(s)/literacies, but also "self-assessed" or questioned about their abilities in their mother tongue. In any case, it is recommended that each respondent be tested in at most two literacies, probably in the literacy of schooling and in a local literacy where applicable. This may mean that the survey itself covers several language literacy tests, but only a subset of (at most) two literacies would be used to test the respondent.

D. DEVELOPMENT OF LITERACY ASSESSMENT PROCEDURES

4.54 There has been considerable concern over the classification of individuals in terms of literacy abilities as determined by direct assessment instruments, that is, the determination of literacy levels. Given the diversity of literacy skills which even one person might possess, and then the diversity of individuals in multilingual and multi-ethnic societies (which are the large majority), it is theoretically and practically difficult to create a "fair" assessment instrument. There are two main types of assessment instruments in the area of learning and literacy: 1) criterion-referenced tests, and 2) norm-referenced tests. Both have been used extensively, particularly in the measurement of school achievement.

1) Types of tests

4.55 Criterion-referenced tests. These are tests linked to pre-determined levels of performance on specific types of skills. A test would be developed around a set of skills -- such as word decoding or reading comprehension -- that the test

developers think are important to measure. Level of literacy would then be a function of how well an individual can perform the skills which are measured.

- 4.56 This type of test is well suited for use in the basic approach as defined in 4.51. Defining a cut-off point to arrive at the basic dichotomy remains a delicate task, and is further discussed in sections E and F. This direct measurement will allow checking the validity of responses obtained through self-assessment as defined in 4.42.
- 4.57 Refinements beyond the basic dichotomy are possible as more skills and/or cut-off points in the test's scale are defined. Countries with experience and sufficient data gathered through the basic approach may want to explore this further, and some ideas are discussed in Chapter 6. The exercise given in section E is ample enough to cover both the basic approach and illustrate further refinements.
- 4.58 In a major study of illiteracy among American youth, Kirsh and Jungblut (1986) used criterion referenced tests which were developed by constructing a "matrix" of tasks derived from the intersection between materials on which the test is performed (e.g., signs, forms, notices) and types of tasks (e.g., knowledge, evaluation, use of specific information). The present method of literacy assessment approaches skill measurement in roughly the same manner.
- 4.59 Naturally, establishing pre-determined levels of literacy constitutes a major challenge. In one recent evaluation study

in Ethiopia an adaptation of this method was used to measure the progress of a literacy campaign (Sjostrom & Sjostrom, 1983): literacy was measured in terms of "component skills" (such as "breaking the code," writing, reading comprehension, and reading comprehension/advanced, and numeracy), with each skill being assessed by a certain number of questions to be answered. Three major categories: illiterate, partially literate and literate were set at pre-determined score levels, and each individual's total score thus corresponded to one category of. One problem was that, if an individual was very poor in numeracy ability, he or she might be characterized as "illiterate", even if his/her scores were generally in the "partially literate" level on reading and writing abilities. This suggests that care must be taken to develop reasonable levels and combinations of abilities and, in particular, not to combine literacy and numeracy scores into a single total score. In addition, it is important to avoid simplified three-point literacy scales, since there is a natural tendency for interviewers to over-classify respondents as "in the middle" on such scales.

4.60 Norm-referenced tests. These are tests which use the performance of a reference group or sample to compare against an individual's performance. In such tests, an effort is usually made to refine (or standardize) the test instrument using a population sample similar to those who will eventually be taking the test for the purpose of assessment later on. Naturally, the norms themselves depend not only on the test items or materials included but also on the make-up of the norming sample. In the domain of literacy it has not been

uncommon to use the abilities found in certain grade levels in primary education, as the way to describe beginning literates, whether children or adults. This tendency to use primary school norms for adults has been increasingly challenged by adult literacy specialists though, there is yet no consensus on the issue (cf. Sticht, 1986). This type of test is well-suited for further categorization beyond the basic dichotomy.

- 4.61 However, in the case of a literacy survey, the choice of a norming sample is a difficult problem, especially because the range of abilities across a diverse population such as typically included in a literacy survey necessitates a broader range of assessment items than in grade-level school-based tests. A significant advantage of using a norm-referenced test is that the population itself determines what is high, middle, or low performance, and this categorization of levels may be done within each language/literacy investigated. However, it remains difficult to interpret how a "high" score in one literacy (or for one population) compares with a "high" score in a second literacy (or a second population), since the criteria for determining an individual's level depends only on the scores of individuals within a single literacy test (or a single population).
- 4.62 Synthetic method. A synthetic method, that is, a method which uses aspects of both norm - and criterion-referenced tests, is proposed for purposes of household surveys. A criterion-referenced procedure, with some predetermined categories, is necessary for the comparison of abilities across languages/literacies. For example, word-decoding ability (its

presence or absence) is a skill which may be understood across languages/literacies, and ought not to depend on a specific core within a specific normed population, thus enabling a better interpretation of the scores on a given set of items.

2) Cross-language comparability in multilingual contexts

4.63 Cross-language and cross-orthographic (cross-script) comparison of literacy has been a topic of increasing research, partly due to interest in bilingualism in industrialized nations; however, there has been little effort to make systematic observations as part of national statistics or in programme evaluation in developing nations.^{1/} Much less is known about the effects of bi- and multi-literacy, and on the comparability (in terms of difficulty of acquisition, retention, etc.) of literacy acquisition across different languages and orthographies.^{2/}

4.64 The present technical study suggests that "rough equivalency" be sought between the assessment instruments designed for multilingual/multi-literacy contexts. This may be achieved through the use of a framework (see Section E) which gathers information on the same types of component skills in each

^{1/} A recent review of rather substantial evidence on the effects of bilingualism and bilingual education is available in Hakuta (1986).

^{2/} A review of comparative reading issues is available in Downing (1973); specific orthographic issues are discussed in Henderson (1984).

language, and, at the same time, using pre- and pilot-testing to obtain approximate norms which are reliable within a single language/literacy.

3) Preparation time required for instrument development

- 4.65 In any survey or census time limitations pose especially difficult constraints on the quality of the instruments used. In the case of literacy assessment, the issue becomes even more important because the time required for instrument preparation is a critical matter. It is, therefore, particularly important that sufficient time and qualified specialists be provided well in advance of carrying out data collection. It is estimated that roughly 3-6 months are necessary for the development of survey questionnaires and assessment instruments.

E. AN EXERCISE IN CONSTRUCTING A FRAMEWORK FOR MEASURING LITERACY LEVELS

- 4.66 There is no general agreement on how to actually assign category labels to individuals. Does scoring above 50% on a test of paragraph comprehension qualify an individual as literate, illiterate or in-between? To a great extent, such labelling has been and continues to be arbitrary. Also, as discussed earlier, while most assessment instruments use school-based curriculum-based materials, there is, in addition, a trend (especially in the assessment of adults) towards the measurement of "everyday" or practical literacy abilities. One method for dealing with literacy assessment is to determine the intersection of both literacy skills and domains of literacy practice.

1) Types of literacy skills

4.67 There are, as noted earlier, a great many types of literacy tests, and a great number of skills which specialists have thought were important not only for the measurement of actual literacy ability, but also in terms of the underlying processes involved in being a competent reader or writer. The literacy survey cannot address, of course, all of these issues. For the present survey and drawing on other recent survey work (cf. Kirsch & Jungeblut, 1986; Guthrie, 1986), it would be useful to think of literacy skills as involving at least four basic types of processes:

- i. Decoding (e.g., pronouncing words: matching a familiar word with a simple picture)
- ii. Comprehension (e.g., literal understanding of a paragraph; recognizing the paraphrase of a sentence)
- iii. Writing (e.g., signing one's name; copying a written text; creating a text)
- iv. Locating information (e.g., pointing to the required word in a paragraph)

2) Types of literacy text domains

4.68 In any society, individuals who use literacy may perform literate functions on a wide array of materials; in addition, certain individuals may specialize in specific types of literate domains (e.g., lawyers, doctors, agricultural agents). Even individuals with low general levels of literacy skill may be able to cope successfully with written materials

in a domain in which they have a great deal of practice (e.g., farm workers who deal often with insecticides). Therefore, since governments are generally interested in providing literacy for many categories of people, it would be prudent to sample across the domains where literate functions typically are found. Materials may appear as single words or short phrases as well as in longer texts. The following breakdown suggests the types of text domains found in most societies.

- i. Words, sentences (e.g., labels for objects: labels ("poison"), signs ("danger", "stop"); short simple statement on everyday life ("I walk to school"))
- ii. Prose (e.g., simple newspaper story)
- iii. Documents (e.g., official forms; directions on medicine bottle, filling in blank forms, advertisements)

3. Matrix of skills by text domains

4.69 The following (Table 3) is a matrix of the intersection of literacy skills with domains in which literacy skills are applied

Table 3 : Matrix for literacy assessment

	TYPE OF SKILL			
	<u>Decoding</u>	<u>Comprehension</u>	<u>Writing</u>	<u>Locating Information</u>
<u>DOMAIN OF TEXT</u>				
Words, Sentences	a*	b	c	-
Prose	-	d	e	f
Documents	-	-	-	g

*The letters indicate intersections or "cells" which are to be assessed

4) Estimation of literacy levels

4.70 The matrix in table 3 provides a breakdown of the types of component skills in literacy which may be measured by the instruments described in section F and which may then be used for the operational definitions of literacy described in section C. It should be understood that there is rarely consensus on which specific skills to test; the present choices

are not only based on the basic importance of the skills described above, but also on the short-term practicalities of developing reasonable assessment instruments with available resources, as each of the above concerns put constraints on the development of these instruments. It should also be noted that the cells are only roughly ordered from "a" to "g" and this order may vary depending on life experience. For example, an individual who works in a regional cooperative might be quite competent at finding appropriate numbers and other information in a roster, but not be competent at writing a short letter.

4.71 Table 3 can now be used to discriminate the basic dichotomy given by definitions III and IV in 4.51:

Category I. A person is classified as "illiterate" who cannot effectively decode, comprehend and write words and sentences as defined in 4.67 and 4.68 in a significant language of his/her choice (or that determined by the planning group); that is, fails the assessment represented by a, b and c. in table 3.

Category 2. A person is classified as "literate" who can effectively decode, comprehend and write words and sentences as defined in 4.67 and 4.68 in a significant language of his/her choice (or that determined by the planning group), that is, is successfully assessed in a, b and c in table 3.

4.72 Categories 1 and 2 will allow an evaluation of the data obtained through self-assessment for the basic dichotomy as

defined in 4.42. Recall that this implies having the assessment instruments in all significant languages as discussed in 4.52. If literacy is to be assessed in specific significant languages determined by the planning group, then the respondent would have to be assessed in each, though in this case at most two tests are recommended for each respondent, as discussed in 4.53. Definitions of categories 1 and 2 would have to eliminate the provision "in a significant language of his choice" and specify each assessed language: ... "illiterate" in (specified language) ...; "literate" in (specified language). Finally, Table 3 also provides a basis (i.e. an exercise to illustrate) for refinements beyond the basic dichotomy when conditions warrant it, as stated in 4.57. This is further discussed in Chapter 6.

F. CONSTRUCTION OF LITERACY ASSESSMENT INSTRUMENTS

1) Skill domains: some useful instruments

4.73 Many literacy skill assessment tests are currently available, although probably the large majority of these have been constructed and normed on school children. Across this proliferation of test instruments, a number of types of tests have gained popularity due to their ease of construction, ease of explanation to the respondent being assessed, and ease of scoring. They are, therefore, the kinds of tests which would make good sense to use for assessment in a literacy survey.

4.74 The majority of these tests are predominantly non-verbal and are in multiple-choice format. That is, the respondent does

not need to "explain" his answer or write out the answer, but merely needs to point, circle or underline the correct answer. Practice questions (see 4.102, 4.103) should always be provided so that each respondent understands the nature of multiple-choice tests. Several general testing principles must be kept in mind when creating literacy assessment instruments: (1) all instructions about the test should be, whenever possible, provided in the respondent's maternal language to insure oral comprehension: (2) there should always be at least two or three practice questions preceding the main questions so that additional instructional information may be presented (during these questions) without influencing the real score of the test; (3) on multiple-choice tests, the "correct" choice should appear in random fashion on both practice and real items on the test, and (4) there should be enough (at least 3) test items on each skill so that a reliable judgment can be made.

- 4.75 It should be understood that in all of the tests described below the language/literacy to be assessed should be in a significant national language and should be, as far as is known, in the respondent's most proficient language/literacy for the first literacy test; respondents who are proficient in additional literacies would usually be assessed subsequently in at most one of those literacies as well. Finally, details and examples on the actual construction of such tests are contained in Annex B. Appropriate cells from Table 3 are listed in brackets. All cells of Table 3 are discussed for future reference, though as pointed out in 4.71, only cells a, b, and c are needed for the basic dichotomy illiterate, literate.

- 4.76 i. Oral reading [a]. In many languages, reading with understanding can be accomplished if the person understands the alphabetic principle and knows how to pronounce letters in combination (i.e., words) and words in combination (i.e., sentences). Sometimes the visual context in which the word or sentence is embedded can aid the individual in understanding what he or she is reading. A common way to measure oral reading is to present the respondent with a series of common words to pronounce; then a series of common sentences. An additional series of words which are embedded in pictorial 2-dimensional displays (such as read the "stop" on a stop-sign) serve as an additional measure of early reading ability.
- 4.77 ii. Word-picture matching [b]. A common way to measure beginning reading ability is to find out if the respondent can recognize which of several words "matches" a given picture. Show, say, (over 10 trials) a series of 4 words spread out in a row and ask the respondent to find a specific word which matches the picture.
- 4.78 iii. Name signing and writing [c,e]. The most elementary writing skills are signing one's name and the ability to copy text [c]. They are also useful everyday skills. The signing skill can be used for voting, receiving a package at the post-office and other essential tasks; copying text not only demonstrates elementary ability, but may be used, among others, to fill out forms. In testing, the signing task simply requires the respondent to sign his name on a dotted lines, the copying task requires the respondent to copy two sentences on dotted lines below each printed sentence.

4.79 Skilled writing [e] consists on the ability of the respondent to write a few sentences relating a simple oral story told him to correspond to a picture shown in the test. For example, the picture might show a woman leading a donkey to a tree. The orally presented story relates that the woman lost her donkey and is now going to tie him to a tree. The respondent is asked to write this story in his/her own words.

4.80 iv. Paragraph comprehension [d]. This test generally consists of a paragraph of expository text a few sentences long followed by several (3 or 4) written questions. The respondent is asked to select the best from a series of 4 possible responses. It is helpful to have at least 12 items total; therefore 3 paragraphs would be sufficient.

4.81 vi. Locating information [f, g]. Simple locating of information (f) requires the individual to point to (or underline) a given word in a paragraph. Skilled locating of information in complex documents [g] has increasing utility in many societies. To test it, the respondent is presented with a document such as a government electricity bill, and is asked to find out, for example: who the bill is addressed to, and what is the amount that needs to be paid.

2) Selecting appropriate text domains

4.82 A comprehensive assessment instrument should include the possible domains in which literacy is practiced in each

language in a society, without focussing, as some tests do, on domains based only on school-related exercises. As described in the preceding sections, and in Table 3, an attempt has been made to combine both school-related domains with those typically found in everyday activities. Nonetheless, there are some obvious activities which have been excluded, such as literacy in religious domains. In many parts of the world, individuals learn to read and write through religious training and, in particular, by practicing such skills on religious texts themselves (e.g., the Bible or the Koran; cf. Wagner, 1983a). The present Manual assumes that this kind of literacy is important, since being literate in any significant language/literacy is a resource. Therefore, as noted earlier (section C (2)), such religious languages should sometimes be included in the survey. However, since the religious texts themselves are also subject to memorization as part of religious practice, it would not be appropriate to use the religious texts themselves as part of the assessment instruments.

- 4.83 In sum, the text domains ought to include, as noted in Table 3, a selection from written materials such as those that appear in books and newspapers, as well as those that appear on signs and documents. Particular care should be taken not to artificially bias results due to familiarity with a particular domain. For example, a railroad train might be much more familiar to urban than rural individuals, and therefore should be avoided in the picture-matching test (see 4.77). Although equivalent

familiarity across ethnic and linguistic groups is probably impossible to achieve overall, a serious effort should be made, during and after pilot-testing to avoid obvious biases in domain materials.

3) Developing scoring procedures

4.84 i. Determining a correct answer. In most cases, the test developers have a sense of what is a correct answer. Unfortunately, the developer's sense may not necessarily coincide with the respondents interpretation of the question or its possible answers. Thus, pretesting is a way to compare what "literate" say with what the developers thought when they created the questions in the first place. Using objective test instruments which have multiple choice type responses, it should be possible to refine the questions during the pretesting period so as to reduce ambiguity and clarify the one acceptable correct response. A two point scale can be considered: 0 for an incorrect answer and 1 for the correct answer on each test item.

4.85 Determining a single correct answer to subjective type questions, such as the analysis of the writing tests is difficult or impossible, since performance may only be seen in a relative manner. What is needed in this case is a procedure for scaling the respondent's performance. The test developers may consider, for example, a 3-point scale for all subjective questions, such as the following: 0 for an incorrect answer, 1 for a correct answer, and 0.5 for a

partially correct answer. In this manner, on a simple writing task, a respondent who could not write at all would receive a score of 0; one who could write some words with some errors would receive a score of 0.5, and one who could write the complete sentence with few errors would receive a score of 1. These are subjective scores, and therefore those who score the tests would have to receive training and feed back in the proper scoring routine. For the purpose of determining subscores or levels (see below), it will be necessary to count a "1" as a correct answer; a "0.5" as a half-correct answer; and a "0" as incorrect. However, two partially correct items would add to 1 point, three partially correct items would be considered as one point, and four partially correct items would add up to 2 points. Partially correct items would only be added within each test section, that is, within each skill (or group of skills) that the test section is assessing.

- 4.86 ii. Subscores. The cells in Table 3 represent component skills which may be considered and calculated separately. This will allow determining the basic dichotomy illiterate/literate (and further categories as discussed in Chapter 6). As different surveys may have different interests, having these subscores provides an opportunity to learn more about the nature of literacy across the national population. Thus, in a given linguistic community, the skill of writing may be especially strong for a variety of historical reasons, while in another community oral recitation may be emphasized with little attention given to writing.

4.87 Determining what constitutes adequate or competent performance on a given component skill is a somewhat arbitrary decision. In the present case, several items in the literacy test will represent each component skill. Household surveys which are designed to consider component skills of literacy will have to keep track of which items represent each component skill, so that appropriate calculations may be made during data tabulation.

4.88 iii. Creating and using test sections. Test sections should be developed to correspond to the skills in Table 3 that need to be assessed to discriminate respondents in the categories defined in the survey goals. For the basic dichotomy as defined by categories 1 and 2 in 4.71, the skills that need assessment are a, b and c in Table 3. The test can thus be divided in two sections: 1) one for decoding and comprehension, and 2) one for writing. Each skill can be assessed, for example, with 3 test items (see Appendix B). The possible scores on the test are from "0" to "6" in section 1 and "0" to "3" in section 2. Respondents would then be classified in categories 1 and 2 as follows:

Category 1: "ILLITERATE". Respondents whose score in section 1 goes from "0" to "3", irrespective of score in section 2; or whose score in section 2 is "0" or "1", irrespective of score in section 1.

Category 2: "LITERATE" Respondents whose score in section 1 is "4" or higher and whose score in section 2 is "2" or higher.

4.89 Whenever possible, it would be useful to include more test items on each skill, thereby improving the reliability of the assessment. The criteria to classify respondents would be adjusted accordingly (for example with 4 test items on each skill the cut-off point would be "5" for section 1 and "3" for section 2 instead of "4" and "2" as above). Direct assessment is a time consuming operation and large numbers of test items can prove burdensome to the respondent and the survey's budget (as interviewer work-load is affected). Nonetheless, a literacy survey is a major investment and reliable direct measurement is an important part of the survey.

4.90 The matrix presented in Table 3 allows for the construction of more complex tests and further discrimination of respondents into more than two categories. This is illustrated in Chapter 6, and some illustration of test items is given in Annex B.

G.TRANSLATION ISSUES

4.91 There are two main issues concerning translation: the problem of accurate comprehension of the oral instructions and procedures for both respondents and interviewers, and the problem of translation of the written contents of instruments when the survey is undertaken in multi-lingual and multi-literate societies.

1) Oral instructions and procedures

- 4.92 It is very important that every respondent interviewed and assessed completely understand what is meant by a given question or set of questions. The developers of the survey must make considerable effort in this regard, since there are many examples of surveys which introduced distortions in the data because one group or another had misinterpreted the requirements of a question or task.
- 4.93 While there is now a substantial scientific literature on various aspects of this problem (cf., Brislin, 1986), two main principles should be followed in order to achieve maximum comprehension:
- 4.94 First, all oral instructions to the respondent should be communicated, where possible, in his mother tongue (or an acceptable household language if there is more than a single mother tongue in the household). At no time should the interviewer assume that a second language is sufficient for clear understanding of instructions or procedures. Naturally, this also means that the survey team must use interviewers who are competent in the maternal language of each respondent. One way to deal with this problem is to assign bilingual (or multilingual) interviewers to those communities or regions which have populations known to speak more than one language.
- 4.95 Second, all instructions must be able to pass the process of "back-translation". This is a procedure whereby

instructions are translated from one language to a second, and then, by a different person, are retranslated into the first language. Any discrepancies between the original and retranslated versions in the first language are considered errors in the mutual intelligibility of the two versions of the instructions. The back-translation procedure should be repeated until no errors are present. If more than two languages are involved, one (usually the national language) should be chosen for all other languages to be back-translated into it.

2) Written contents

- 4.96 The question of how to provide equivalent written contents in the assessment instruments themselves is a complex topic which has, as noted earlier, received little scientific attention. As in the discussion of text domains (see 4.68), there is no clear agreement about how to adequately sample from the linguistic knowledge of the respondent. For example, how much should a literacy test "select" from the various text domains which are available, but not necessarily practiced, within and across a given society. Similarly, the contents of a given question or phrase in one language may not be analagous in a second language.. For example, in Zimbabwe, the English word "ant" may be translated into Ndebele as "nyenama", and into Shona as "nhoda". While the meaning of "ant" is probably similar across the other two languages (unless ants are greatly different across these two linguistic groups), nonetheless the Ndebele and

Shona words may be more difficult, if only because they have more syllables (hence letters) to process. Similarly, a sentence in Ndebele might have the same number of words as Shona to express roughly the same thought, but each word might be almost twice as long in letters. There is as yet no adequate theory of comparative reading to enable the developer of tests to reach more than an approximation of equivalency across languages and orthographies.

- 4.97 It is suggested, therefore, that back-translation (see 4.96 above) be used as a rough guide to obtaining equivalent concepts across languages, though such translation would be insufficient for achieving true equivalence. At present common sense will have to guide the development of approximate levels of difficulty across languages. A word (or aspect of syntax) which is common and very easy in one language, but whose translatable equivalent in the second language is known to be both less common and more difficult (in terms of word length and syllabic construction) should be avoided. Attention should be paid to these rough equivalents both in the pretesting and pilot-testing phases of instrument development.

H. DEVELOPING MULTIPLE "ORDERS" FOR THE INSTRUMENT

- 4.98 One major difference between a single "informed" household member survey and the present survey of individual household members concerns lies in the possibility of

information flow between household members. In many households it is not unusual for individuals to wish to collaborate during the survey with others (brothers, aunts, parents, etc.) who might be in the household at the same moment. Naturally, in order to gather a respondent's own answers, it is necessary to try to avoid, particularly during the literacy assessment, such communication and collaboration since the intent is to gain individual assessments.

4.99 To accomplish individual testing is not always easy, especially in societies where group-centered activities are the norm. In order to deal with this problem, it is recommended that multiple "orders" of the test instruments be developed during the pretesting and pilot testing. Having multiple orders allows the interviewer to use a different order on consecutive respondents interviewed/assessed in a given household. It is recommended that three orders be created for each test. Then, in each household order A would be given to the first respondent ; order B to the second; order C to the third; order A to the fourth; and so forth. These orders are versions of the same test, but simply arranged in a different sequence.

.100 A second way to assure independent assessment of household individuals is to create several different forms of the test itself, that is, with completely different sets of items. In the case of Zimbabwe (see Annex B), three forms were made up for each of the three languages assessed. For countries with sufficient resources, this method may increase the reliability of the individual assessment.

I. REFINEMENT OF ASSESSMENT INSTRUMENTS AND TRAINING

4.101 Development and refinement of survey questionnaires and assessment instruments as discussed below will provide valuable insight to critical points that need to be highlighted and reinforced during interviewer training activities. It is recommended that records be kept of relevant issues, situations and practical considerations that develop while constructing the survey questionnaires and assessment instruments, for later use in the development of the interviewer manual and field strategy.

1) Practice questions

4.102 It should be noted that there is considerable variation in how individuals begin to take tests. For example, some understand quickly how to interpret multiple choice tests, while others may not easily comprehend what is required, and others may not be familiar with the use of a pencil. Since the assessment instrument contains a variety of different test formats, it is essential to ensure that each individual understands what is being required by the test.

4.103 Each type of test (e.g., multiple choice, writing a word, locating information) should be preceded by at least two (2) practice questions of the same type. When administering these practice items it IS appropriate for the interviewer to provide coaching and additional instructional information to the respondent, since these items do NOT count toward the

score achieved on the regular test. However, it is NOT appropriate to provide additional coaching during the test itself. The interviewer should repeat the practice questions until the respondent indicates that he or she fully understands what is required. Pretesting will be useful in determining how many and what kind of practice items are necessary within a given population of respondents.

2) The Pretest

4.104 First of all, it should be recognized that detailed coverage of educational topics is relatively rare in household surveys and that survey organizers, enumerators and respondents as a rule are not sufficiently familiar with educational terminology, concepts and structures. Special care must be taken to ensure a clear, concise and consistent presentation of questions relating to literacy and education in the survey form. It is essential to pre-test the questionnaire in order to find out whether these questions are properly understood and whether the answers can be considered as reasonably correct; also to see if the assessment instruments are adequate for respondents under normal conditions. That is, are the instructions clear and comprehensible? Do the practice questions provide sufficient experience so that the regular questions can be assumed to be understood? Are there some questions that are too difficult or too easy? What ranges of response are given on the different types of questions? These and similar questions may be addressed in the pretest.

4.105 In addition, the pretest provides an early opportunity to consider assessment difficulties which result from differences among populations in language and literacy background. It is important, therefore, to include a subsample from each of the disparate linguistic groups in the larger survey sample. For example, in Zimbabwe, it would be important to pretest on Ndebele and Shona speakers, and not just assume that if one group has difficulty with certain instructions, the other will also have them.

3) The pilot-test

4.106 The pilot test is an enlarged version of the pretest, which has the benefit of changes in the instruments as a function of the prior pretest experience. It should be administered to a modest-sized sample, but of course, with households other than those to be chosen for the survey itself. The main purpose of the pilot-test is to gain a sense of the actual operating circumstances of the full scale literacy survey in order to adjust its operations and logistics if necessary. A sense of the likely norms of the assessment instruments can also be gained.

4.107 The pilot-test is also an opportunity for the key field personnel to gain valuable experience. While basic training will take place before pilot-testing, practice at administering the questionnaire and the assessment instruments can be very useful. For countries with no or little experience in household surveys on education and literacy in particular, pilot studies are indispensable to make sure that

the envisaged survey is practicable in terms of operating procedures, time, budget and personnel allocation, etc. Their findings and experience acquired should be fully utilized for amending and improving questionnaires and instructions, and for preparing manuals and organizing training programmes for enumerators so as to achieve a technically correct and meaningful treatment of the education component of the survey. To that effect it is of great importance that the agency in charge of the survey operation maintain very close co-operation with the relevant educational authorities, particularly with the ministry of education, and where required, with local educational agencies, school inspectors, and others as well.

4.108 One particular form of educational involvement in survey planning and operation is achieved by recruiting enumerators from the teaching profession and/or among students and pupils in higher and secondary education, as appropriate. This type of arrangement has been practised in some countries where conditions are favourable and where the survey operations can be efficiently synchronized with the respective educational activities. Use of such educated field staff, often possessing valuable knowledge and experience of local conditions of relevance to the survey, is undoubtedly an asset for the survey project.

4) Revising and norming the instruments

4.109 The general task of revising and norming the instruments typically takes place during the periods preceding the initial

pretesting, the pilot-testing and the final survey administration. These preliminary trials of the instruments are crucial to refining the final assessment instruments.

4.110 Particularly important is the opportunity to compare performance on the assessment instruments across different literacies -- i.e., to compare norms. To the extent possible, the different language versions of the assessment instrument should have the same distribution of correct and incorrect scores. Since the instruments will not be an exact translation across tests -- given the wide variation between the grammar (syntax) and meaning (semantics) across literacies, it is important that the survey team exercise careful and sensitive judgements concerning the selection of items of equivalent difficulty.

4.111 Given the limited resources of the typical household survey, the survey team should be aware that complete statistical norms for the instruments are not being sought here -- primarily because establishing equivalent norms across language/literacy boundaries is still something that test specialists find very difficult to achieve. What is being sought is rough equivalency across assessment instruments, such that respondents with approximately the same level of literacy component skills (e.g., decoding, comprehending and writing simple sentences) will be classified in the same category of the assessed languages.

5) Psychometric issues

4.112 A comprehensive or even short review of the problems associated with the systematic measurement of mental skills -- i.e., psychometrics -- is beyond the scope of this technical study. However, it is useful to provide a list of the types of problems which often arise in the development of any test, such as a literacy assessment instrument in the household survey. These include: (1) How many items are necessary to achieve a reliable estimate of a component skill; (2) How many component skill can be reliably assessed in the limited number of test items; (3) How reliable is the instrument in terms of relating each component skill with the others; (4) On subjective measures (such as writing evaluation), how reliable are the interviewers' judgements (i.e., inter-rater reliability)? These and other related psychometric issues may be considered by the survey team during data analysis or at any later moment. If a second survey is planned, or if the household literacy assessment instrument is to be adapted for other uses, these psychometric issues must receive serious consideration.

6) Training interviewers

4.113 Training of interviewers is central to any household survey. It is even more crucial when it involves individual literacy assessment, where the interviewer must know how to evaluate performance on tests. In most cases, interviewers have some prior knowledge of how to obtain answers on the household questionnaire, but this too needs to be assured in a training

session, particularly if the interviewer is working in a multilingual area.

- 4.114 For them to learn how to conduct the testing, how to score the tests, and so forth, interviewers must receive training and feedback during practice sessions. It is also important to understand the language and literacy constraints of the interviewers themselves. It makes little sense to send an interviewer to assess respondents' literacy abilities if the interviewers cannot read and write the language.
- 4.115 It is essential, therefore, that sufficient attention be given to the training of interviewers. It is recommended that at least one week, preferably two, be set aside for training sessions, preferably in different parts of the country, but with the same supervisors. This assures some cultural and linguistic sensitivity on the part of the survey team, since they will train with individuals from the region in which the survey will be carried out. In addition, it will provide opportunities for the supervisors to understand the complexities of assessment in different contexts, understanding that can be useful in the final construction of the survey materials.
- 4.116 One of the most important planning tasks is the preparation of the interviewer's instruction manual which contains the instructions necessary for carrying out the interview and the literacy assessment and will help the interviewer in many situations where the supervisor is not available both during training and the actual survey. Issues discussed in the

manual include: quality control, concepts and definitions used in the survey, explanations of all the survey items, and procedures for asking questions and testing for literacy skills.

4.117 The general conduct of the survey interview is, in most ways, similar to that of other household surveys within NHSCP. The following are estimates of the time required to complete each unit of the literacy survey in an average household: 10 minutes for the principal respondent questionnaire; 10 minutes for each individual questionnaire; and 20 minutes for each literacy/language assessment (assuming an average of 2 literacy/languages per person). Thus, the equation for amount of time/household would be: $T(\text{minutes}) = 10 + 30N$ (number of respondents in a household). For example, in a household of 3 adults 15 years or over, the expected time required would be 100 minutes; for 5 adults, the time estimate would be 160 minutes.

4.118 Another issue in carrying out the literacy survey is locating the households and the appropriate respondents. It is possible that school-aged respondents may not be at the household, but in school. In such cases, it is recommended that the interviewer keep a list of all such children within a given locale, so that he/she will be able to visit the school and, in one or more visits, assess all the children from the household sample. Clearly, the interviewer and supervisor will need to advise the school authorities in order to proceed as smoothly as possible.

7) First checking of the survey data

- 4.119 Naturally, the very first persons to check the data should be the interviewers themselves. They should make certain that each question has been asked of each respondent, and that the appropriate marks have been made on the survey forms. The supervisors have two opportunities to check the survey data: first, while they observe and supervise interviewers in the field, and second, when they have gathered all the survey forms in the regional office. If problems or discrepancies of any nature are found in this latter stage, the supervisor should notify the survey coordinator immediately, and solicit advice as to how to proceed.
- 4.120 As in other household surveys, it is prudent to recheck a subsample of the households which were included in the survey sample. This subsample is typically one household in each 20 (i.e., 5% of the total). The survey team will need to decide how to accomplish this task, and, in particular, who will do the rechecking and what to do about systematic errors which may be found.
- 4.121 Once the survey forms are collected at the central survey office, the coordinator should select a few completed survey forms from each region to examine whether the forms have been filled out in the proper manner. It is critical that this be accomplished speedily, so that regional supervisors can make corrections, and still have time to retrain interviewers and explain why any discrepancy was found.

CHAPTER 5. TABULATION PLANS, DATA PROCESSING AND REPORTING

5.1 After data collection, the major task is that of data processing. There are two main aspects to it: data preparation and data analysis. As stated in 4.1, plans of tabulation and data analysis should be drawn-up right at the beginning while discussing the survey goals and designing the survey questionnaires and assessment instruments. Analyzing survey data can be an arduous and time-consuming process that burdens human and material (computer) resources. Thus it needs to be planned for very carefully. It is very helpful for the individuals who will be involved in the data analysis to be also directly involved in the preparation of the survey instruments, not only for the purpose of understanding the categories to be coded, entered and analyzed, but also to facilitate the development of the survey materials as efficiently as possible.

A. TABULATION PLANS

5.2 The possibilities for compiling tables on various educational items collected in household surveys depend on numerous factors, including the principal purpose and nature of the survey, the specific place and role of education in this context and whether it is a major topic or an ancillary subject, the various educational items included, the data base and its degree of detail, the need for and feasibility of cross-classifications in different respects, and sampling considerations. Careful attention must evidently also be given to the anticipated use of the tables for analysis and research

purposes. A comprehensive and detailed tabulation programme can therefore only be drawn up for a particular survey programme with due consideration to all these factors as well as to specific national circumstances with regard to educational structures and socio-economic conditions.

5.3 This subsection therefore provides only a tentative list of a few basic and typical tabulations, corresponding to commonly occurring requirements for interpretation and analysis of survey data relating to the various educational items. These might provide a starting point for further adaptation to specific conditions and needs in each programme. Having said this, it is emphasized that a properly designed tabulation programme constitutes in itself a basic instrument for interpretation and analysis of the data. Appropriate breakdowns and cross-classifications in these tables are essential for studying relationships between educational characteristics and certain demographic and socio-economic factors, such as age, sex, occupation and income.

5.4 Since the main rationale for a literacy survey is to determine literacy levels and their relationship with other variables thought to be important in a given country, a significant number of tabulations will have the basic dichotomy as a column or row variable. As described earlier (see Chapter 4, B and E), the classification of individuals into literacy levels is not an easy matter; two ways to classify have been discussed:

- i. Classifying by self-assessment. When categorizing by self-assessment, one may simply calculate the numbers of individuals who label themselves as being literate or illiterate

- ii. Classifying by direct measurement. When categorizing by direct measurement (i.e., using the literacy assessment instruments), a respondent will be put into a level as a function of his or her scores on the literacy test.

5.5 Each classification procedure will allow the computation of different statistical measures such as percentages, rates, ratios, etc. The two commonly used statistical measures related to literacy are complementary. The positive one, the literacy rate, represents the percentage of a given population which is literate. The negative measure, the illiteracy rate, gives the percentage of the population concerned which is illiterate. These rates have identical meanings, but there is a tendency to prefer the latter as the more "striking" measure, particularly in countries where mass illiteracy constitutes a serious problem.

5.6 It should be emphasized that these rates can be used for a variety of analytical purposes, not only within the static context for comparing different population groups at a given point in time but also in a dynamic sense, for studying changes in literacy over time on the basis of data from a series of surveys and censuses. Such time series are particularly important in connection with educational reforms and massive literacy campaigns in many developing countries, as they provide basic statistics for the evaluation of progress towards the eradication of illiteracy and other educational objectives.

5.7 Typically, much of the analysis, particularly at the early stages, will be in the form of cross-tabulations such as for region, residence (urban/rural), age and/or sex by literacy category. In general, it would be useful to obtain cross-tabulations of literacy categories for each of the main comparison variables in the study and, at this point, to see whether there are expected or unexpected patterns in the data. This is also another opportunity to check for possible errors in data collection or entry. It is suggested to do this exercise both for tabulations with sample data (that is, unweighted) and weighted data (that is, the estimates of cells for the survey population) as given by the sample design. For example, if it was found, unexpectedly, that rural literacy rates exceed urban rates, it would be important to recheck the data entry and the analysis procedures to see if this finding was really accurate. Checking the "sense" of the data is an essential part of the process of data analysis.

5.8 In considering the variables to be included in tabulation plans, it is useful to refer to the UN document entitled "Principles and Recommendations for Population and Housing Censuses" (1980), particularly, Part Two, which deals with tabulation plans. Among the many factors which may be considered as determinants of literacy, the following are often said to be the most important:

- i. Age
- ii. Sex
- iii. Rural/urban residence
- iv. Ethnicity
- v. Religion

- vi. First language & orthography/alphabet
- vii. Education level (educational attainment)
- viii. Employment/occupation
- ix. Fertility/mortality & health status
- x. Other relevant socio-demographic factors

5.9 The survey team should know early in the planning process how it intends to compare and contrast various subgroups within the overall sample, and which variables to relate to one another. For example, in the literacy survey in Zimbabwe, main issues included: to compare literacy skills across the three main language/literacy groups within the country, to consider possible sex differences, and to determine the relationship between formal schooling and literacy achievement. The corresponding variables, would then be contained in the formal tabulation plan.

5.10 Unesco (1978, p.2) suggests that adult literacy be measured in populations 10 years and over, in the following categories: 10-14, 15-19, 20-24, 25-34, 35-44, 45-54, 55-64, and 65 and over. For most countries, this type of classification presents few problems at the level of census information. In a household survey, however, depending on the sample size and number of categories on the other variables with which age will be cross-tabulated, the number of age categories may need to be reduced. Initial tabulation plans may consider using a basic breakdown that, if sample size permits, may be later expanded if the analysis so requires. The basic age categories suggested are: 10-14, 15-24, 25-44, and 45 and over. This allows collapsing the last three to the 15 and over group,

which is frequently of particular interest. Categories that might be considered are 15-19 to study the impact of schooling in literacy rates, and 60 and over, which is the United Nations recommended cut-off point for the aged population.

5.11 A recommended practice is to prepare basic tables that compare the structure of the survey results with population data obtained from an independent source (e.g., recent census, previous survey, administrative records). To illustrate, Tables 4 and 5 give examples of distribution of households and persons by region and urban/rural classification, and of persons by age and sex in the population from a recent census and the survey results.

Table 4: Distribution of households and persons in the survey and census (year) by region and urban/rural residence

Region	Urban		Rural		Total	
	(a)	(b)	(a)	(b)	(a)	(b)
1 Census Survey						
2 Census Survey						
o						
o						
o						
Total Census Survey						

(a) No. of households (b) No. of persons

Table 5: Distribution of persons by sex and age in the
survey and census (year)

Age Group*	Census			Survey		
	Male	Female	Total	Male	Female	Total
10-14						
15-24						
25-44						
45+						
Total						

*Basic categories

5.12 For the tabulation of data on educational attainment, it is suggested that tables cover the different categories of attainment. Categories would reflect the highest grade level completed. In the case of persons having completed second or third level of education, additional tables giving the field of study/subjects of specialization may also be provided if desired. These tables should have the different levels of attainment in columns and other variables such as sex, age and region in rows.

5.13 Initial tabulations might include: a) Population 15 years of age and over, by educational attainment, age group (see 5.8) and sex; b) Population 15 years of age and over, by educational attainment, sex, urban and rural areas and possibly major regions; c) Population 15 years of age and over, by educational attainment, sex and ethnic group; d) Population 15 years of age and over, by educational attainment, sex and social group.

- 5.14 In principle, these tabulations should concern the total population of the particular age group, including both persons with completed education (that is, having left the educational system) and children and young people still undergoing education at the time of the survey (that is, remaining within this system). However, if the latter category includes a significant proportion of the population aged 15-24, it is recommended that the age group 25 years of age and over be used in preference to that of 15 years and over, as the educational status of those still in school is subject to change in the future.
- 5.15 Depending on the purpose and orientation of the survey, the tabulation programme might also provide for cross-classifications between educational attainment and certain demographic and socio-economic subjects of particular interest, such as fertility, mortality, employment, economic activity and income.
- 5.16 The most direct and simple method for these cross-classifications is to use percentage distributions by educational attainment for the different population groups in order to illustrate and compare their educational profiles. In effect, each percentage in such a distribution can be considered as an educational attainment rate for a specific level, or level and grade as the case may be, within the population group concerned.
- 5.17 It should be noted that the percentage rate for each category or grade of attainment relates to the completion of that grade, no more and no less. In order to measure the stock of educated

people having completed at least a given grade, a cumulative grade attainment rate can be used.

5.18 Where a full distribution by grade is available, it is also possible to introduce a central tendency measure, for example, the median number of school years completed (taking care not to include repeated years). This measure may be defined as the value which divides the distribution of the population by educational attainment (expressed as the number of school years completed and treated as a continuous quantitative variable) into two equal parts, one half of the cases falling below this value and the other half exceeding it. The median number of school years completed may be quite useful for the purpose of comparisons between different population groups and over time. However, for countries where the majority of the population has no or very little schooling, this measure is not very useful. In the extreme case, it can even assume the value of 0 (more than 50 per cent of the population with no schooling at all).

5.19 As for orientation of the analytical work, it may be mentioned that in multi-subject surveys there are particularly interesting possibilities for studying relationships between educational attainment and certain demographic and socio-economic factors such as fertility, economic activity and income.

5.20 A typical tabulation of data on current school attendance will give the percentage distribution for persons in the age-group 5-24 by age, sex and level of education in which they are enrolled (see Table 6). Data from this type of table can be compared with recent census data or administrative records.

Table 6: Percentage distribution of persons in age group 5- 24
attending school, by age, sex and level of education

Age Group	Pre- Primary		Secondary Lower Upper		Higher education
	Primary	Primary	Lower	Upper	
5- 9					
10-14					
15-19					
20-24					
Total					

5.21 For Table 6 it may be advisable to use such age-groups as correspond to the different levels of education in the educational structure of the country. For example, if the age group 12-14 corresponds to lower secondary and the age group 15-17 to upper secondary, and so on, then one could use these groups. This will help in providing information on enrolment ratios, which can be compared with enrolment ratios obtained from school statistics.

5.22 Educational qualification: Initial tabulations might include:
a) Population that has successfully completed a course of study at the third level of education, by educational qualifications (degrees, diplomas, certificates, etc.), age group and sex; b) Population that has successfully completed a course of study at the third level of education, by educational qualifications, sex, urban and rural areas and possibly major regions. If the survey also covers qualifications (diplomas and certificates) pertaining to the second stage of second level education,

similar tables should be prepared for the population that has completed this stage. With due regard to the purpose and coverage of the survey and to sample error, educational qualifications might be cross-classified with, for example, economic activity, occupation and income.

5.23 Educational qualifications: Methods of presentation and analysis for this item have to be rather flexible, depending on the particular survey, the degree of detail of available data, the type of classification used, etc.

5.24 In general, at least some overall educational qualification rates should be calculated for relevant broad age groups of the population, to indicate the relative size of the stock of persons with special qualifications. To the extent possible further differentiation should be made by fields of specialization in order to allow comparisons of available numbers with needs for skilled personnel in various economic and social sectors. However, as has been mentioned above, caution should be exercised to avoid too detailed a breakdown of this usually rather small category of highly educated people, taking the sampling error into proper consideration.

5.25 Distance from school: Initial tabulations might include: a) number of households and population in households, by distance from the home to the nearest school at the first level of education, by urban and rural areas, and by major regions; b) number of households and population in households, by distance from the home to the nearest school at the second level of education, by urban and rural areas and possibly by major regions.

- 5.26 Depending on the local situation, ranges of distance from home to school may be indicated in linear units (for example, 0-1 km, 1-3, 3-6, 6-10, 10 km and over), or, especially where school transport facilities exist, in travel time (for example, 0-10 minutes, 10-30, 30-60, 60-100, 100 minutes and over).
- 5.27 These examples of distance classification are intended for schools at the first level of education. For second level schools, usually located at much greater distances, the classification has to be adapted to the actual conditions. Moreover, in countries with a very sparse network of such schools, tabulation (b) would be of a rather theoretical interest in so far as rural areas are concerned.
- 5.28 Where special school travel and boarding facilities are organized, a supplementary table regarding the availability and use of such facilities should be introduced.
- 5.29 A percentage distribution of households, as well as population by distance from school is the natural basis for studying the physical aspect of access to education. In addition, the median distance, expressed in physical distance or in travel time, as appropriate, could be used as a central tendency measure so as not to overrate extreme distances.
- 5.30 Pertinent information on school transport and boarding facilities should be taken into account in the analysis. Useful indicators in this respect could be the proportions of households having access to such facilities on the one hand, and of households actually utilizing them on the other.

5.31 If data have been collected on other educational items such as school drop-outs and educational expenditure, tables can be prepared to provide the relevant distributions such as the following:

Drop-outs

- i. Distribution of drop-outs by sex, age and grade level in which they dropped out.
- ii. Distribution of drop-outs by sex, level/grade in which they dropped out and year of dropping out.

Educational Expenditures

- i. Amount spent in a year by item of expenditure (tuition fees, other fees, books and stationery, uniform, etc.)
- ii. Expenditure by number of children being schooled and level of education
- iii. Expenditure on education as percentage of total expenditure by region, urban/rural residence.

5.32 Once the basic tables have been analyzed and used to further check the validity of the overall survey results, the main subject of the literacy survey, that is the assessment of literacy rates and their correlates, can be undertaken. There will be many tables envisioned at the early planning stages, later adjusted while designing the questionnaires and survey assessment instruments, and further adjusted while analyzing the early set of basic tabulations, a natural process resulting from interaction between the data and the survey analysts.

5.33 There should be a set of tables on literacy level for various subclasses of population. The main ones, would be those showing

the percentage of persons of the different sub-classes (age, sex, residence, and so forth) in each literacy sub-group. The format of a typical table is shown below.

Table 7: Percentage of persons aged 10+ classified by self-assessment in literacy levels, by sex and age

Age		Literates	Illiterates
Group	Sex		
10-14	Males		
	Females		
	Total		
15-24	Males		
	Females		
	Total		
25-44	Males		
	Females		
	Total		
45+	Males		
	Females		
	Total		
Total	Males		
	Females		
	Total		

5.34 A table similar to Table 7 should also be constructed for literacy level classification through direct measurement via the scores on the assessment instruments. The two tables could then be compared with each other to evaluate self-assessment, and with previous census data.

5.35 Additional tables similar to Table 7, should be constructed for other variables instead of age, like region or province, ethnic group, mother tongue, rural/urban residence and the other socio-economic-demographic variables determined by the planning group to study literacy correlates for action and policy design.

5.36 If the samples are not too small for the different age-sex groups, Tables giving distribution of persons by age-group, sex and literacy level may be prepared for each region. For the sample size to remain adequate, it is advisable to limit disaggregation and provide estimates only for subclasses formed by classifying individuals based on two or three variables at a time. To illustrate, consider the following example:

At the national level, literacy category

- By sex and age, using age-groups 10-14, 20-24, 25-29, 30-44, 45-59, 60+ (note that more than the suggested basic age-groups are included here).
- By sex, age (with 3 or 5 age groups) and another variable (e.g., religion, rural/urban, ethnic groups, language).

At the regional level, literacy category

- By sex and age, using age-groups 10-14, 15-24, 25-44, 45+
- By sex or age and other variables (e.g., religion, rural/urban residence, ethnic groups, language).

5.37 Finally, it must be recalled that the various tabulations briefly outlined above are only meant to serve as illustrative examples. The detailed choice and design of tables for a given survey will necessarily depend on the needs, potentialities and constraints of that particular survey. It is especially important to ensure that the degree of disaggregation in

tabulations and cross-classifications is kept within reasonable and realistic limits, taking sampling error into account. Too detailed breakdowns may lead to so many very small figures as to be meaningless. A tabulation plan has many possibilities, and only a few illustrations have been given here. The survey goals, feed back from the planning group, and interaction with the data itself will provide the necessary guidance in this activity.

5.38 Apart from providing the indicators suggested above, the data on literacy and education variables obtained from household surveys can be analysed in different ways to throw light on the relationship of these and other socio-economic variables. It is possible to use techniques of analysis of variance and regression analysis to investigate the differences in literacy levels between the different subgroups, and to find out which of the variables contribute to achievements in literacy and education. The specific questions for which such analysis may be needed are as follows:

- i. Are there significant differences in respect of literacy and educational attainment between males and females, urban and rural areas, different ethnic groups, different regions, and different linguistic groups?
- ii. Which are the main predictor variables for literacy and education and what is the relative contribution of each? The variables to be considered are those covered in the survey (such as sex, age, occupation, ethnic group, maternal language).

5.39 Since the survey schedule has an item on literacy which is similar to the one included in population census schedules, analysis should be made of the correspondence between literacy level as assessed by the census question and the level given by the literacy test used in the household survey. The analysis should help in establishing cut-off points on the test which correspond to the percentage of literates in the population obtained from the census question.

5.40 It may be noted that literacy could be treated either as a dichotomous or continuous variable, depending on the level of sophistication required in presenting the results. In the first case, each person is classified simply as literate or illiterate and from such data only percentages can be computed. In the second case, scores indicating the level of literacy are available for each person, and mean scores can be used as an indicator of literacy level of any group.

B DATA ENTRY

5.41 Data preparation involves the operations of checking the questionnaire, coding data entry and editing which have to be carried out to make the data ready for computer processing. Of course, the survey schedules and literacy tests should be designed so as to minimize manual coding and to facilitate data collection and data entry (this is one of the tasks of the data processing specialist(s) participating in the planning group). Depending on whether a micro-computer or a main-frame is used, the data entry operations can be organized using direct key to tape (or key to diskettes), or even punch card machines for keying in the coded data.

- 5.42 In many cases, it is possible to enter the data from the questionnaire forms directly into the computer. Staff utilized for this purpose need not be highly trained, but they do need to be reliable and capable of stopping work if they feel they are making errors due to fatigue. It is also important to have data entry checked by a second individual, particularly to catch systematic errors which may occur, such as numbers being entered in the incorrect column. To accomplish this task, it is usually helpful to assume that at least 5% (or 1 out of each 20) of the data points need to be rechecked by a second person.
- 5.43 A second method is to recopy (handwrite) the data from the survey forms onto computer "fortran" sheets. These sheets are typically 80 columns wide, and provide a useful way to condense the data from the survey forms. The method adds an additional step to the data entry process, which not only requires additional labour but may also add errors in the transfer process (i.e., from survey forms to computer sheets, and from computer sheets to computer diskettes); thus it requires the exercise of quality control. On the other hand, fieldwork labour may be more plentiful than central office labour, and it is definitely much quicker to enter data into the computer from computer sheets with rows of numbers than from the more bulky and complicated survey forms. Survey teams may have previous experience with these methods, and can decide which one is easiest for them to utilize.
- 5.44 It is necessary to estimate carefully the time required for data entry operations in order to avoid bottlenecks in producing the survey results. On one hand, the time required for data entry

depends greatly on the ease with which the data can be read from the questionnaire and assessment forms, and on the competence of the staff who enter the data; thus sufficient human resources need to be allocated so that the completed forms can be entered in a reasonable time period. On the other hand, the time spent in entering the data of the household questionnaire and the individual questionnaire and assessment instrument (which depends on the average number of key strokes per schedule/test) has to be estimated and then multiplied by the total number of households and persons in the sample. Then, depending on the number of machines and operators available and the average speed with which they work, the total time required for data entry can be estimated, making some allowance for verification and correction of errors (NHSCP, 1982).

5.45 As with other surveys, it is suggested that the individual in charge of the data entry and data analysis be included in the planning group. This would ensure that the questionnaire and assessment forms will be optimally constructed to facilitate data recording and data entry. It is also very helpful to plan for the kind of computer (mainframe or microcomputer) which will be used in the analysis. The decision on which system to use ought to be based both on the availability of the equipment and on the availability of skilled statistical analysts. If no one on the survey staff is familiar with statistical programmes for the microcomputer (such as SPSS-PC), then it makes little sense to try to work in this mode if skilled staff and equipment are available for the mainframe. If the computing equipment can process rectangular files (basically rows and columns of numbers), secretaries may enter data on word processors which,

for the most part, can produce such files. Technically speaking, almost any microcomputer or mainframe computer can be used to enter data, though many specialists find it easier and more convenient to use the microcomputer, even if the data are later transferred on to a mainframe computer.

- 5.46 Matching questionnaires and printouts. This is a procedure which occasionally is forgotten in data analysis, yet it is central to the process of maintaining reliable data. In much the same way that survey questionnaires were rechecked in the field (see 4.119), the analysis team should check at least 5% of the data on the raw questionnaire forms with the printed-out data set. The purpose is not so much to catch each random error (there are always some of these), as to catch systematic errors which might have resulted from someone misunderstanding the nature of the task or the placement of a particular column where the data should be entered.

C. DATA EDITING AND DATA PROCESSING

- 5.47 A crucial element, and often the limiting factor, in computer usage is the availability of a computer programming capability. Programming services can be purchased from a commercial computer firm or similar sources and computer "software" packages to meet various programming needs are available commercially or, for example, from governmental and intergovernmental organizations. But the lack of such a capability could well represent one of the most serious obstacles to the successful conclusion of the literacy survey.

- 5.48 One of the roadblocks in computer usage is the often inordinate amount of time required to prepare and check out computer programmes. For this reason it is urgent to determine tabulation requirements well in advance, although, as stated earlier, additional ones will suggest themselves as analysis progresses and more insight is gained through interaction with the data. Editing programmes are especially difficult and time-consuming to prepare, and lie at the core of data processing.
- 5.49 As has already been noted, household surveys have rarely been focused on literacy and education and, as a result, experience regarding the quality of educational data collected by means of such surveys is rather limited. There are nevertheless some findings which tend to indicate that data on education are subject to particular risks or error because respondents, and even enumerators and survey organizers, often have not been familiar with educational topics and the related, specific terminology. In addition, it is possible for respondents to sometimes deliberately give inaccurate answers for reasons of personal prestige.
- 5.50 It is thus evident that the problem of data quality has to be given special attention during the whole survey operation. Various methods can be used to reduce the risk of errors, depending on the particular survey situation, personnel and other resources available, supplementary sources of information for comparison and control, and so forth.

5.51 Of primary importance is the continuous evaluation of data quality throughout field operations, data processing, compilation of tables, preparation of reports and analysis. Comparisons should be made wherever possible with data collected by other means, for example population censuses, and from educational institutions. Internal logical checks between different topics in the survey, such as literacy and educational qualifications, should also be made.

5.52 Three broad categories of errors may be distinguished for editing programmes: format errors, identification errors, and content errors. Format errors involve various types of mis-specification of the way in which the information is expected to be recorded. An identification error occurs when a particular unit is given the identification code of another unit or is otherwise incorrectly identified. Neither format errors nor identification errors cause many problems in manual editing, but they can be the cause of serious delays in computer editing. It is, therefore, particularly advisable that computer edit programmes contain features that facilitate the location and correction of format and identification errors early in the computer processing operation.

5.53 Content errors deserve a separate mention. They are typically defined and specified by the subject matter specialist, but how to locate them and what to do about them must be jointly decided with the data processing specialist(s). Content errors likely to be found in editing are:

- i. Omissions. Cases in which an entry is required for an item but none has been made

- ii. Inconsistencies. Cases in which the entries in two or more items are not consistent with each other, such as an 11-year-old boy indicated as being employed as a medical doctor.
- iii. Unreasonable entries. Cases in which the entry is beyond the reasonable limits of an item, such as a tuition fee that is close to household income.
- iv. Impossible entries. Instances in which, for example, a code "3" appears for sex, where provision has been made only for codes 1 and 2.

5.54 Another important aspect of data processing is the implementation of the weighting and estimation procedures which have been decided on. In the simplest form, this may involve the insertion of the sample weight, usually the reciprocal of the sampling ratio, on the computer records as part of the programming. Further adjustments to the data, such as non-response, will not be discussed here and the reader is referred to NHSCP's document "Non-Sampling Errors in Household Surveys: Sources, Assessment and Control".

5.55 Editing, weighting and adjustment for non-response are all activities leading towards a final "clean data file" for use in the estimation procedures and processing of tabulations. For this purpose, careful preparation of specifications is required for each proposed table. Among other things, the specifications must spell out the codes or values which comprise each listed category in the table and the location of this information on computer record.

5.56 Finally, the processing system is not complete without provision for the computation of sampling variances and corresponding standard errors of estimates. The preparation of specifications for this purpose is, in a sense, an extension of the process of tabulation. Computation of sampling variances is recommended at least for the main variables in the survey. Their calculation is a function of the sample design, and several approximative methods exist for complex designs. The experience and expertise of the CSO will prove particularly useful in this matter, especially if the literacy survey is mounted as an integral component of an on-going survey programme with a common master sample.

D. PREPARATION OF THE SURVEY REPORT

5.57 After completing the data analysis, the survey report should be prepared in such a way that the main findings of the survey become available in a readily usable form to the policy makers, planners, administrators and other users of the survey. It is important that the report be written in a simple style and provide full information on the survey objectives and design, the tools and methods of data collection, and include the survey results in the form of tables, indicators and other statistical analyses. The report should also highlight the main findings and conclusions derived from the analysis.

5.58 The survey report must be prepared with a concern for the individuals and organizations who have a direct interest in knowing about literacy survey results. The audience for many surveys would typically be the administrative heads of the

ministry or ministries which requested the survey, and the ministry which carried it out. But in the case of the literacy survey, as noted earlier, there may be a wider set of interested persons, perhaps from the ministries of education, health, social welfare, and so forth, to whom the findings may be useful. It is important to attend to their interest in writing the final report. Thus, if the ministry which carried out a literacy campaign wanted to know how much literacy was retained, say, two years following literacy instruction, it would be useful to attend to this issue in the data analysis and in the discussion of the data. If an international organization such as UNICEF were interested in the relationship between mother's literacy and infant mortality, the report would be more useful if it provided such analysis as well, even though it might not be of major interest to the ministry of education. It is assumed, of course, that these topics were discussed early and planned for in the planning group's statement of the survey goals.

1) Developing an outline

5.59 The first step in writing a draft report is the development of an outline of the set of categories to be dealt with in the report itself. The typical outline would include the following sections: (1) executive summary, which would briefly state the overall findings of the survey; (2) introduction to the context, which would provide a summary of the cultural, historical, linguistic and educational context of the particular country; (3) methodology, which would provide an overview of the methods used in the survey, languages assessed, and so forth, with

documentary materials and instruments provided in appendices; (4) results, which would consist primarily of the results based on the tabulation plans, and additional detailed analyses; (5) general discussion of the results; (6) conclusions and policy recommendations. Each section would have a number of relevant subsections which would then be used to focus the writing and any additional data analysis needed.

2) Determining the necessary pieces of data

5.60 At this point, when a great deal of information has been collected and analyzed, probably to a greater extent than will be needed for the report itself, the key in the analysis is data "reduction", or the process by which the central elements may be extracted from the bits and pieces of data. Here it is important to return to the original planning documents to sharpen the picture of the overall questions which are central to the survey itself. What were the original goals?, what were the policy questions that were addressed? With these questions clarified, the main pieces of data should become more apparent and useful in the graphs and charts described in the next section.

3) Rough graphs and charts

5.61 There are numerous ways to present data in a summary report, but none is better than the visual representation. While it is not possible or equally easy to represent all data visually, the effects of main contrast variables (such as region, age, sex, etc.) can usually be represented in graphs or bar charts. When

data are quite complex and have multiple categories, however, it is recommended that tables be used instead of graphs.

4) How much detail is necessary?

5.62 The simple answer is: "Enough to convince the reader of the conclusions you have reported". Since "enough" is not known, this answer is necessarily subjective. It should be emphasized, however, that detailed breakdowns of data into many small categories of data should be relegated, as much as possible, to the Appendices, while the principal results, with graphs and charts, should be included in the main part of the report.

5) Getting feedback

5.63 Both presenting table after table of data or long narratives without data are inefficient ways to report on a survey. It is far better to provide the reader with a combination of text, context (i.e., cultural information) and data analysis in a way that is not boring, and is clear and focused. Perhaps the best way to determine whether a proper balance has been achieved is to seek constructive criticism on a draft from capable persons. Thus, it is recommended that the draft report be read by interested persons and their comments fed back. Participants in the original planning group, as well as relevant local and international specialists should be included.

6) Refinement of the outline

5.64 The draft report sent out for comments would have advanced beyond the outline initially discussed in 4.57, and would have come closer to the final report format. Broadly speaking, on review, the content of the survey report may be organized under the following topical headings:

i. Introduction

5.65 This should provide information on the general literacy and education situation in the country, and briefly review the policies and action programmes of the government in respect of literacy and education. It should also cover the major existing sources of data (e.g., population census, school statistics) citing some of the important statistics (e.g., literacy rates, enrolment ratios, etc.) and mentioning their limitations. It should then outline the need and justification for the survey and list its specific objectives as stated in the original proposal.

ii. Survey design

5.66 This section should describe the target population covered and define various terms and concepts used in the survey. It should also mention the exclusions, if any, from the target population. It should provide the details of the sampling procedure used, with information about sampling frame, population size for each type of unit, sample size (for households and persons) and the method of selecting the sample. It should also inform on the survey period and the time table followed for the survey work.

iii. Methodology

5.67 In this section, the method used for data collection should be described. The questionnaire, interview schedules and tests to be used for measuring literacy should be described and information about pre-testing, reliability, etc., should be provided. The actual questionnaires/tests may, however, be included in annexes. Various concepts and terminology (e.g., literacy and educational attainment) should also be operationally defined.

iv. Analysis of data and results

5.68 This section should include the main tables obtained from the survey data with a brief description of the salient features of the data in each case. Detailed tables may be included in annexes. Also, the method used for estimating percentages and means should be described, standard errors of estimates reported, and illustrative graphs and charts included. Various indicators (e.g., literacy rates for the different sub-classes) should be reported and interpreted. Comparison with past time series data may be made, using suitable graphs. The differences between regions and other sub-classes of age, sex and so forth, should be discussed. Results of other analyses should be reported under appropriate topical subheadings, and should be discussed in the context of the objectives of the survey.

v. Main findings and summary

5.69 This section should summarize the main findings of the survey and interpret them in the context of the government policies and programmes. Limitations of the survey may also be pointed out and suggestions and recommendations made to policy makers about

further studies, surveys, and, if possible, about the way in which the results of the present survey should be utilized. This section could alternatively be the first section of the report.

- 5.70 A typical survey report may be 100 to 150 pages in length. The content and organization of the report, of course, would depend on the type of survey (i.e., whether it is an independent survey or one of a series of periodic surveys or a part of multi-subject survey), but the chapters should be roughly those indicated above.

E. PUBLICATION AND DISSEMINATION POLICIES

- 5.71 The final report should be prepared and duplicated for a wide range of individuals interested in the findings of the study. There is an occasional tendency, given the complexity of a survey report, to spend a great amount of time in seeking an error-free document, thus delaying the final production of the report. This is, of course, understandable, but needs to be weighed against the importance of producing the report in a timely fashion, and while a competent and familiar staff are still available to complete it. Surveys that take too much time for final reporting may end up never being completed.
- 5.72 After completion of the survey and its report, it is important to consider ways and means to reach potential users, and to make them aware of the important survey findings without too much time lag. Some methods which could help in the quick and effective dissemination of the findings are:

Publicity

- 5.73 There may be press releases, radio and television programmes to inform the public at large about the main findings of the survey. These should be devoid of technical jargon and presented in an attractive manner.

Publication of brochures, summaries of survey reports

- 5.74 It may be useful to publish brochures and short, non-technical summaries of the survey report for wide dissemination of information among potential users. These should be brief (10-15 pages), and should include the main features of the survey design and the main survey results (tables, indicators, graphs and charts) in an attractive format. They should be distributed among institutions and organizations concerned with literacy, such as government departments, media agencies, politicians and other interested individuals.

Publication of non-technical versions of the report

- 5.75 When the main survey report is lengthy and contains statistical analysis which may not interest the average reader, it is useful to publish a short, non-technical version of the report containing all the important tables and indicators. This is different from the brochure mentioned above, which is essentially for publicity. If a non-technical version is published, the brochure could be made even shorter (2 to 4 pages) to be used just for publicity.

Workshops with policy makers and other users

- 5.76 In order to draw attention of the users to the various technical aspects of the design, tools of data collection, data analysis and the results arrived at from the survey, it may be useful to organize workshops after preparation of the first draft, in which specialists, policy makers and other users of data could participate. Such workshops after preparation of the first draft, could help in ensuring future utilization of the data and in improving the final survey report. Workshops may also be organized after publication of the final report with the aim of dissemination of information and greater utilization of data in planning and evaluation of literacy programmes at regional and other levels.

Supply of data on special request

- 5.77 After the survey is completed and the report is published, there are often requests for data which may not be specifically included in the report, but may be available on computer tapes or diskettes. There should be provision for supplying such data or results of data analysis on request to the users, who may be planners, administrators or research workers interested in specific details.
- 5.78 The number of copies of each type of report (brochure, non-technical summary, first draft, final draft) to be published and distributed would depend on the size of the user group. The first draft, usually meant for limited distribution, can be mimeographed (100 to 200 copies). The main report may be

mimeographed or printed, depending on the facilities available, the time required for mimeographing/printing, and the expected demand for the report.

CHAPTER 6. SOME ISSUES BEYOND THE BASIC APPROACH

6.1 This chapter shows that more complex approaches are possible with the exercise discussed in Chapter 4 and using the matrix given in Table 3. However, more complex approaches are not recommended for countries that have not had previous experience and sufficient data generated by the basic approach as suggested in this technical study. Moreover, the possibilities departing from the basic approach are numerous and the illustrations presented here are not intended to serve as a model for the "next stage" beyond the basic approach. Nonetheless, it should be understood that numerous international agencies and government offices may use a literacy survey both for evaluation and programme planning. For these purposes, the basic dichotomy as discussed in Chapter 4 may yield insufficient detail on literacy levels and abilities. Each country planning group will need to assess their own requirements.

6.2 No attempt is made here to present an overall integrated step by step complex approach. Rather, some basic topics are further discussed as isolated important issues that weigh heavily in going beyond the basic dichotomy.

A. SOME CURRENT AREAS OF DEBATE IN LITERACY ASSESSMENT

6.3 While UNESCO has provided helpful guidelines in defining and measuring literacy -- which this technical study adheres to as the building block in developing the basic approach presented

in the previous chapters -- and these have served as the universal basis of international comparability, there is now general agreement that simple dichotomies misrepresent the range or continuum of literacy abilities that are common to most contemporary societies. There is, however, no consensus on how to go beyond the basic dichotomy. Definitions and categories of literacy levels based on direct measurement are at the heart of the debate.

1) Some definitions

6.4 Some specialists have suggested that literacy may be best understood in terms of its functional utility in social context -- hence UNESCO's term "functional literacy". Literacy may be seen as a set of individual skills, but these skills are only relevant in terms of a social and cultural context. Thus, being able to read a newspaper may justify the label "literate" in one context, but, in a second context, may be a less relevant measure than filling in a government form for a mother in need of nutritional help for her sick child.^{1/} Another approach to the issue of cultural relativism is that taken by anthropologists who attempt to describe actual literacy practices, and how they are more (or less) valued by differing persons and groups in a given society ^{2/}. To discuss some definitions, consider the following:

- i. A person is functionally literate when he/she has acquired the knowledge and skills of reading and writing which enable him to engage effectively in all those activities in which literacy is normally assumed in his culture or group (Gray/UNESCO, 1956,p.19).

- ii. A person is functionally literate who can engage in all those activities in which literacy is required for effective functioning of his group and community and also for enabling him to continue to use reading, writing, and calculation for his own and the community's development (UNESCO, 1978).
- iii. Literacy is a characteristic acquired by individuals in varying degrees from just above none to an indeterminate upper level. Some individuals are more literate or less literate than others, but it is really not possible to speak of literate and illiterate persons as two distinct categories.
- iv. (An adequate) conception of literacy (is) not simply ... a set of isolated skills associated with reading and writing, but more importantly ... the application of those skills for specific purposes in specific contexts. ... There is no single measure or specific point on a single scale that separates the "literate" from the "illiterate". Literacy can no longer be defined simply as the ability to sign one's name, completion of a particular year of schooling, or attainment of a specified reading grade level. (Kirsch & Jungeblut, 1986; emphasis added).

1/ A complete discussion of "functional literacy" is beyond the scope of the present document [for critical reviews, see Levine (1982) and Sticht (1986); for a more sympathetic review, see Hunter and Harmon (1979)].

2/ (cf. Heath, 1980; Scribner & Cole, 1981; Street, 1984).

6.5 It is clear from 6.4 that agreeing on definitions beyond the basic dichotomy will prove a formidable task. Moreover, different countries may have different approaches and different ways to operationalize these definitions, thus leaving considerable room for interpretation. However, to proceed with the discussion, the following section considers a possible classification.

2) Categories based on direct measurement

6.6 Literacy may be defined in terms of the individual's ability to read and write within the context of his or her society. The direct measurement of literacy skills using assessment instruments provides information for more refined categories than available in simple self-assessment. Consider the following classifications:

i. Non-literate

A person may be classified as non-literate who cannot read a text with understanding and write a short text in a significant national language, and who cannot recognize some words on signs and documents in everyday contexts, and cannot perform such specific tasks as signing his or her name or recognizing the meaning of certain public signs.

ii. Low literate

A person may be classified as low literate who cannot read a text with understanding and write a short text in a significant national language, but who can recognize some

words on signs and documents in everyday contexts and can perform such specific tasks as signing his or her name or recognizing the meaning of certain public signs.

iii. Moderate literate

A person is moderately literate who can, with some difficulty (i.e. making numerous errors), read a text with understanding and write a short text in a significant national language.

iv. High literate

A person is highly literate who can, with little difficulty (i.e. making few errors), read a text with understanding and write a short text in a significant national language.

6.7 If a person can engage in literacy in more than one significant national language, then he/she should receive a classification for the highest level achieved in a significant language.

6.8 Referring now to the matrix presented in Table 3, the categories given in 6.6 can now be referred to the cells in Table 3:

i. Level 0 (non-literate)

-- cannot effectively use skills in Table 3

ii. Level 1 (low literate) with some errors,

-- Can decode words and sentences [a]

-- Can identify words, signs in everyday context [b]

-- Can write own name, copy some text [c]

-- Can locate information in a short text [f]

iii. Level II (moderate literate)

- Possesses skills in Level i, and with some errors
- Can understand a newspaper article [d]
- Can write short text [e]
- Can locate information in a complex document [g]

iv. Level III (high literate)

- Possesses all skills in Table 3 with few errors

The corresponding testing procedures are those given in chapter 4, section F (4.76-4.81).

6.9 Scoring procedures would follow the guidelines given in 4.84-4.86, but since more categories have been defined another classification criterion is needed. Consider, to further the discussion, the following illustration. As in 4.88 it is assumed that each component skill (a-g) in Table 3 is assessed with 3 test items. However, the test will now be divided in three sections:

Section 1: decoding and comprehension of words and sentences [a,b]

Section 2: writing own name, words and sentences; and locating information in prose [c.f]

Section 3: comprehension and writing of prose; and locating information in documents [d, e, g].

6.10 The possible scores on the test range from "0-6" in sections 1 and 2, and from "0-9" in section 3. A respondent who scores from "0-3" in either (or both) of sections 1 and 2, would NOT be assessed in section 3. Respondents would then be classified in literacy levels given in 6.8 according to the following scheme:

Level	<u>Score in test section</u>		
	1	2	3
"0"	0-3	0-6	-
"0"	0-6	0-3	-
"I"	4-6	4-6	0-3
"II"	4-6	4-6	4-6
"III"	4-6	4-6	7-9

6.11 Recall that 6.9 and 6.10 are only intended to illustrate the issues that have to be tackled in scoring and classifying in more than two literacy levels. Clearly, in 6.10 different classification criteria could be developed more than the four levels given in 6.8 could be devised, and more test items used for each component skill to improve reliability.

B.DEVELOPMENT OF NUMERACY ASSESSMENT PROCEDURES

6.12 The inclusion of "numeracy" in discussions of the problem of illiteracy is a relatively recent phenomenon; it is also an area which has received remarkably little attention by researchers. While there is no standard definition comparable to literacy, most observers would agree that numeracy involves the ability to effectively make use of a number system. In order to provide a way of measuring numerate behaviour, it is essential to describe the types of skills implied in the definition and, as in the case of literacy, the domains where numerate behaviour is practised.

6.13 While UNESCO (1978) includes "reading, writing and calculation" in its definition of functional literacy, international comparative data have typically been gathered only on reading and writing. The origin of the linkage between reading/writing and numeracy remains somewhat obscure. UNESCO, in the 1975 Declaration of Persepolis, consistently linked reading, writing and arithmetic as part of the notion of functional literacy. Yet, there has been very little attention paid to the arithmetic part of the definition by international organizations and development planners; for example, relatively little information has been gathered on mathematical abilities in Third World countries, and the few literacy evaluations that have taken place which provide separate analysis for numeracy (e.g., Sjostrom & Sjostrom, 1983) generally provide insufficient detail for judging specific numeracy abilities. [UNESCO has not provided separate indices on numeracy rates for any member nation.]

6.14 Research on cultural variation in arithmetic systems has been undertaken in a number of traditional societies, such as Papua New Guinea (Lancy, 1983; Saxe, 1981), and Liberia (Gay & Cole, 1967); this work considers indigenous mathematical systems and their relation to "modern" arithmetic systems. Most of the international comparative research on mathematics achievement comes from cross-national studies focused primarily on industrialized nations (Comber & Keeves, 1973; Husen, 1967). One interesting finding from a national survey undertaken in Australia may have some bearing on future comparative studies. In this study, Bourke & Keeves (1977) reported that home and family variables may play a greater role in promoting numeracy

than literacy in school-aged children. There are other reports as well which indicate that practice with numbers, even in unschooled youth or adults, can lead to higher levels of numeracy, (e.g., Carraher, Carraher & Schliemann, 1985; Lave & Greenfield, 1982).

C. A DISCUSSION MODEL FOR MEASURING NUMERACY LEVELS

6.15 As in the case of literacy, a method for dealing with numeracy assessment is to determine the intersection of both numeracy skills and domains of numeracy practice.

1) Types of numeracy skills

6.16 There are, of course, a great many types of mathematics tests and sets of skills which specialists have thought were important for the measurement of numerate ability. In terms of the present discussion, and in a manner similar to literacy, it would be useful to think of numeracy skills as involving at least four basic types of processes.

i. Decoding (e.g., pronouncing written numbers)

ii. Writing (e.g., writing numbers from dictation; copying written numbers)

iii. Solving (e.g., ability to accurately perform the four basic arithmetic functions: addition, subtraction, multiplication, division)

iv. Locating information. (e.g., pointing to the required numbers in a paragraph or document)

2) Types of numeracy domains

6.17 In any society, individuals who use numeracy may perform numerate functions on a wide array of materials. Certain individuals may also specialize in specific types of numerate domains (e.g., accountants, store-keepers, tailors). Even individuals with low general levels of numeracy skill may be able to successfully cope with written materials in a domain in which they have a great deal of practice (e.g, mothers who mix baby formulae). Therefore, since governments are generally interested in providing numeracy for many categories of people, it would be prudent to select across the domains where numeracy functions typically are found. Naturally, these materials may also appear as single numbers or on signs, labels, texts, advertisements or documents. The following breakdown suggests the types of numeracy domains found in most societies.

- i. Written numbers (e.g, single numbers; isolated numbers on signs)
- ii. Numbers in prose text (e.g., labels for commercial or medicinal products; numbers in a newspaper article)
- iii. Numbers in oral text (e.g., using numbers when presented in oral discourse)
- iv. Numbers in documents (e.g., understanding numbers in official forms; understanding directions on a can of infant formula; advertisements; filling in blanks on income generation forms)

3) Matrix of skills by domains

6.18 Table 8 presents a matrix of the intersection of numeracy skills with domains in which numeracy skills are practised.

Table 8: Matrix for numeracy assessment

	Type of skill			
	Decoding	Writing	Solving	Locating information
<u>DOMAIN OF USE</u>				
Written numbers	a*	b	c	-
Numbers in prose text	-	-	d	e
Numbers in oral text	-	-	f	-
Numbers in documents	-	-	-	g

*The letters indicate intersections or "cells" which are to be as
(see below)

4) Estimation of numeracy levels

6.19 Table 8 attempts to provide a rough breakdown of the types of component skills in numeracy which could be measured by the instruments described in section D, and which would then be used for classification according to some operational definitions of numeracy. Relative to literacy, there is perhaps a somewhat greater consensus on which skills to test in numeracy. The present choices are not only based on the basic importance of the skills described above, but also on the

short-term practicalities of developing reasonable assessment instruments with available resources. Both of the above concerns put constraints on the development of numeracy assessment instruments. It should also be noted that the cells are roughly ordered from "a" to "g", in terms of increasing expertise; however, this order could vary depending on life experience. For example, an individual who works in a regional cooperative might be quite competent at finding appropriate numbers and other information in a roster, but not be competent at calculating the quantity of insecticide to use per hectare of maize. For purposes of discussion, three categories of numeracy have been defined below on numeracy. Appropriate cells are listed in brackets[].

i. Level 0 (non-numerate)

-- cannot effectively use skills in Table 8

ii. Level I (semi-numerate), and with some errors,

--Can decode (identify/say) numbers in isolation [a]

--Can decode (identify/say) numbers on signs in everyday
context [a]

--Can write numbers, copy written numbers [b]

--Can locate numerical information in a short text [e]

--Can solve simple "oral" arithmetic problems "in head"[f]

iii. Level II (high numerate)

--Possesses skills in Level I, and with some errors

--Can solve basic written arithmetic problems "on paper"
[c].

--Can solve written story-based problems "on paper" [d]

--Can solve basic "oral" arithmetic problems "in head" [f]

--Can locate and identify numerical information in a
complex document [g]

D. CONSTRUCTION OF NUMERACY ASSESSMENT INSTRUMENTS

1) Selecting skill domains: some useful instruments

6.20 Many mathematics assessment tests are currently available, although probably the large majority of these have been constructed and normed using school children as the norming samples. Across this proliferation of test instruments, a number of types of tests have gained popularity due to their ease of construction, ease of explanation to the respondent being assessed, and ease of scoring. They are, therefore, the kind of tests which would make good sense to use in a numeracy survey.

6.21 These tests are for the most part non-verbal and are in multiple-choice format. That is, the respondent does not need to "explain" his answer or write out the answer, but merely needs to point, circle or underline the "correct" answer. Practice questions should always be provided so that each respondent understands the nature of multiple-choice tests, and several general testing principles must be kept in mind when creating numeracy assessment instruments: (a) all instructions about the test should be, whenever possible, provided in the respondent's maternal language to insure oral comprehension; (b) there should always be at least two or three practice questions preceding the main questions so that additional instructional information may be presented without influencing the real score on the test; (c) on multiple-choice tests, the "correct" choice should appear in random fashion on both practice and real items on the test; and (d) there should be enough test items so that a reliable judgement can be made.

6.22 Unlike literacy, there is usually only one "official" numeracy in a given country, virtually always based on the Euro-Arabic number system. Yet, there also exist traditional indigenous number systems -- using base 5 or base 8, rather than the typical base 10 system -- still utilized by many groups of people, and especially non-schooled women (cf. Girodet, 1983). To the extent possible, the numeracy assessment should be sensitive to these skills, which may be critical to child survival among the poorest populations. Whenever indigenous systems are in use, it will be important to include problems which can make use of, and therefore, measure skill in these mathematical systems. Illustrations on the actual construction of such tests are contained in Annex B. Appropriate cells are again listed in brackets [].

6.23 i. Number naming [a]. In any written numerical system, a basic ability to name the numbers would seem fundamental. In this simple test, the respondent is asked to "name" several numbers on the page, and on simple signs in everyday contexts.

6.24 ii. Number writing [b]. Elementary numeracy skills include being able to write and copy numbers. Since these abilities can be used for recording dates, prices and other numerical information, they constitute useful everyday skills.

6.25 iii. Solving oral arithmetic problems [f]. This test generally consists of several problems presented orally. A simple example would be: "If your father gave you two bushels of corn and your uncle gave you two more bushels of corn; how many bushels of corn would you then have?" A more complex

example might involve more than one arithmetic function, such as the following: "Ahmed inherited 20 hectares of land; he decided to let his uncle farm half of this land, and he allowed his cousin to use two of his remaining hectares. How many hectares did Ahmed farm for himself?" In oral or mental arithmetic, the respondents are required to solve the problems without using pencil and paper. It is important that this test, in particular, allow for the use of indigenous counting systems (as described earlier), both in terms of questions and answers.

6.26 iv. Solving written arithmetic problems [d]. These are often called "story" problems for arithmetic. They are versions of the previous type of problem [iii], written in short paragraphs. They are, of course, dependent on the respondent's literacy as well as numeracy skills, but represent a common form of arithmetic tasks which individuals face in many contexts -- that is, a combination of literacy and numeracy. These problems can be presented in multiple choice format, with four possible written answers provided from which one must be selected.

6.27 v. Solving arithmetic equations [c]. Normally associated with school-based mathematics, the solution of simple arithmetic equations is, nonetheless, a task increasingly seen in everyday contexts, such as in the formulae for mixing instant foods for babies. Given the emphasis on such problems in educational settings, many individuals' arithmetic skills may be assessed through them. Examples might include the following: $2 + 7 = \underline{\quad}$; $81 - 73 = \underline{\quad}$; $5 \times 9 = \underline{\quad}$.

Local school books can provide a relevant series of questions of this sort. This task may also be provided in multiple choice format.

- 6.28 vi. Locating information [e, g]. Simple locating of numbers [f] requires the individual to point to (or underline) a given number in a paragraph. Skilled locating of numbers in complex documents [g] has increasing utility in many societies. In this task, the respondent is presented with a document such as a health document of an infant suffering from diarrhea and is asked to determine, for example: what is the suggested dosage of medicine and, for a given amount of water, how much salt solution to mix in.

2) Selecting appropriate numeracy domains

- 6.29 As with the case of literacy, a numeracy assessment instrument should ideally include all the possible domains in which numeracy is practised in a society, without focusing, as many tests do, on domains based only on school-related exercises. In Table 8, an attempt has been made to combine both school-related domains with those typically found in everyday life. Nonetheless, there are many activities which, for expediency, have been excluded from selection, such as numeracy used in non-arithmetic domains. For example, knowing how to "tell time", or keep accounting books are two skills which would be useful to assess. However, they are probably correlated with the respondent's other numeracy abilities, which will be assessed, and thus would probably add little to this assessment.

6.30 In sum, the numeracy domains ought to include, as noted in Table 8, a selection from both oral and written numeracy, as well as an attempt to include both school-based counting systems and those found indigenously.

3) Developing scoring procedures

6.31 i. Determining a "correct" answer. When compared with literacy assessment, numeracy scoring is a much easier task, particularly when there is one mathematically correct answer. On the other hand, some of the measures require a subjective assessment, such as the pronunciation and location of numbers in text. In such situations, survey personnel should be given adequate training so that they are familiar with the standards for scoring these types of numeracy questions.

6.32 ii. Subscores. The cells in Table 8 represent component skills which can be considered and calculated separately. As different surveys may have different interests, having these subscores provides an opportunity to know more about the nature of numeracy across the national population. For the purpose of most household surveys, however, the numeracy test score will take the form of a combined score which can be used to make more general classifications of levels.

6.33 iii. Scoring numeracy levels. Numeracy levels may be determined from the total score on the numeracy test.

4) Translation issues

- 6.34 It is very important that every respondent interviewed and assessed understand completely what is meant by a given question or set of questions. In numeracy assessment, the same two main principles should be followed in order to achieve maximum comprehension: (1) all oral instructions to the person interviewed/tested should be communicated in his mother tongue (or household language); and (2) all instructions must be able to pass the process of "back-translation".
- 6.35 Since the focus here is on the use of numbers and arithmetic, there is somewhat less concern about the of "written contents" as discussed for literacy assessment. In the rare case that the number systems, themselves, vary greatly within a given society, the survey team will have to find a way to achieve equivalency in scoring methods. Finally, it is important that household members not be able to "collaborate" in answering test questions. In order to deal with this problem, it is recommended that multiple "orders" of the numeracy test instruments be developed.

ANNEX A
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A N N E X B

S H O R T L I T E R A C Y A S S E S S M E N T
I N S T R U M E N T :

Illustrations for the Preparation of a Household Literacy Survey Test

I. ILLUSTRATIONS FOR LITERACY TEST

ORAL READING (skill [a] in Table 3)

Presentation instructions: Respondent is presented with a series of cards, one at a time, for about 15 seconds per card. Interviewer tells respondent: "Please look at this card, on which a word is written. Please read this word".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point

Practice Item a. Card contains written word "COW" For the practice item only, it is possible to "coach" the respondent by providing help and additional information to help him understand what is expected of him.

Item a1. Card contains written word "TRUCK"

Item a2. Card contains picture drawing of sign marked "DANGER"

Item a3. Card contains simple sentence "THE FARMER WENT TO THE MARKET"

IDENTIFY WORDS/SIGNS (skill [b] in Table 3)

Presentation instructions: Respondent is presented with series of wide cards, one at a time, for about 15 seconds per card; respondent must simply point to the "correct" word. Interviewer tells respondent: "Please look at this card, on which is shown a picture of something you know well. There are also four written words on this card. Please point to which word is the name of the picture".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

Practice Item b. Card contains picture of a "CHICKEN"; followed by the words "SNAKE", "HOUSE", "CHICKEN", "SLEEP". For the practice item only, it is possible to "coach" the respondent by providing help and additional information to help him understand what is expected of him.

Item b1. Card contains picture of a "BOWL", with word choices as follows: "BOWL", "FORK", "TRAVEL", "CAR".

Item b2. Card contains picture of a "DRESS", with word choices as follows: "WAVE", "DRESS", "HAMMER", "WALL".

- Item b3. Card contains picture of a "WATCH", with word choices as follows: "MATCH", "WATER", "CIGARETTE", "WATCH".

SIMPLE WRITING/COPYING (skill [c] in Table 3) There is no practice item.

Presentation instructions: Respondent is presented with a series of cards, one at a time, for about 15 seconds per card; respondent must follow specific instructions for each item, as noted below.

Scoring instructions: These items require subjective assessment by the interviewer. Each item is scored as "correct" = 1 point, "incorrect" = 0 point, or partial correct = 0.5 point. Two partially correct items would add to 1 point, three partials would be considered as 1 point, and four partials would be considered as 2 points.

- Item c1. Presentation instructions: "Here is a card with nothing written on it. Please write your family name for me on this card."

- Item c2. Presentation instructions: "Here is a card with nothing written on it. Please write the following sentence on this card. "THE WOMAN GAVE BIRTH TO THREE CHILDREN".

- Item c3. Presentation instructions: "Here is a card with a sentence written on it. Please copy this following sentence on this other (blank) card: "THE POOR MAN POSSESSED NO LAND".

LOCATING INFORMATION IN SIMPLE TEXT (skill [f] in Table 3)

Presentation instructions: Respondent is presented with a series of cards, one at a time, for about 15 seconds per card; respondent must simply point to the "correct" word or words in the text or the document. Interviewer tells respondent: "Please look at this card, on which is written some information. Please point to that word (or words) in the written text which I will ask you for".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

- Practice Item f. A card contains the following text: "LEILA AND FATIMA WENT TO THE MARKET TO BUY CORN. THEY HAD TO WALK THREE KILOMETERS TO THE TOWN WHERE THE MARKET WAS LOCATED". Interviewer asks: "What, where is the word "CORN" in the text? For the practice item only, it is possible to "coach" the respondent by providing help and additional information to help him understand what is expected of him.

- Item f1. Similar to above card: GEORGE EARNS MONEY BY CUTTING FIREWOOD. HIS WORK IS HARD, BUT HE ENJOYS IT VERY MUCH". Interviewer asks: "What, where is the word "CUTTING" in the text?
- Item f2. Similar to above card "MARY HAS MANY FRIENDS IN SCHOOL. SHE SPENDS MOST OF HER TIME PLAYING WITH THEM. Interviewer asks: "What, where is the word "TIME" in the text?
- Item f3. Similar to above. Card: "THE FARMER HAS A COW, TWO HORSES AND TEN CHICKENS". Interviewer asks: "What, where is the word "TEN" in the text?"

UNDERSTANDING SIMPLE TEXT (skill [d] in Table 3)

Presentation instructions: Respondent is presented with a card for about 30 seconds: respondent is then asked a series of 3 questions about what he has read on the card. Interviewer tells respondent: "Please look at this card, on which is written some information, and read it carefully. I would like to ask you a question about what you have read".

Scoring instructions: each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

- Practics Item d. Card contains single sentence ("THE YOUNG MAN DECIDED TO MARRY AN OLDER WOMAN". Respondent is asked a single question about the sentence, for example: "Was the woman in the story older than the man or was the man older than the woman?" For the practice item only it is possible to "coach" the respondent by providing help and additional information to help him understand what is expected of him.
- Item d1. Similar to above. Card: "MARY DECIDED TO INVITE ALL HER FRIENDS TO HER BIRTHDAY PARTY". Interviewer asks respondent: "Why did Mary invite her friends over?
- Item d2. Similar to above. Card: "AFTER THE LONG WINTER SPRING FINALLY ARRIVED." Interviewer asks respondent: "What comes first, spring or winter?"
- Item d3. Similar to above. Card: "THE DONKEY COULD NOT CARRY THE HEAVY LOAD AND WOULD NOT MOVE". Interviewer asks respondent "Why wouldn't the donkey move?"

WRITING SIMPLE TEXT (skill [e] in Table 3) There is no practice item.

Presentation instructions: Respondent is presented with series of cards, one at a time, for about 15 seconds per card; respondent must follow specific instructions for each item, as noted below.

Scoring instructions: These items require subjective assessment by the interviewer. Each item is scored as "correct" = 1 point, "incorrect" = 0 point, or partial correct = 0.5 point. Two partially correct items would add to 1 point, three partials would be considered as 1 point, and four partials would be considered as 2 points.

Item e1. Presentation instructions: "Here is a blank card, with nothing written on it. I am going to read a brief story, and I would like you to write down exactly what I say". Interviewer then reads 2 sentences very slowly: "I EAT A BIG BREAKFAST. I USUALLY TAKE IT EARLY IN THE MORNING." The oral presentation is then presented a second time if needed. No further reading is allowed.

Item e2. Similar to above sentences

LOCATING INFORMATION IN COMPLEX DOCUMENTS (skill [g] in Table 3)

Presentation instructions: Respondent is presented with a series of documents, one at a time, for about 30 seconds per document; respondent must simply point to the "correct" word or words in the document. Interviewer tells respondent; "Please look at this document, on which is written some information. Please point to that word (or words) in the document which I will ask you for.

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

Practice Item g. A card contains a copy of a voter registration credential. Interviewer asks: "Who is this document from?" or "To whom does this document belong to?" For the practice item only, it is possible to "coach" the respondent by providing help and additional information to help him understand what is expected of him.

Item g1. Card: "copy of an electricity bill". Interviewer asks respondent: "What is the amount due?"

Item g2. Same card as above. Interviewer asks respondent: "Who sent the bill?"

Item g3. Card: "Copy of a report card". Interviewer asks respondent: "What grade is this report card for?"

II. ILLUSTRATIONS FOR NUMERACY TEST

It should be understood that this material is meant only for illustration to countries that already have ample experience and sufficient data gathered through the basic approach. It is intended to aid planner for use in conjunction with their local expertise in designing numeracy tests for local languages and contexts. It corresponds, for English language and numeracy, roughly to the instrument outlined in Chapter 6. It is not intended to be a final working document, but rather to stimulate discussion. Other languages/literacies and other contexts will necessarily lead to changes in the development of a literacy assessment instrument. Also, various household surveys may wish to assess respondents on more instrument items than are illustrated here.

ORAL READING OF NUMBERS (skill [a] in Table 8)

Presentation instructions: Respondent is presented with a series of cards, one at a time, for about 15 seconds per card. "Please look at this card, on which is written a number. Please read this number".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

Practices Item a. Card contains the number "5". For the practice item only, it is possible to "coach" the respondent by providing help and additional information to help him understand what is expected of him.

Item a1. Card contains the number "9"

Item a2. Card contains picture drawing of sign marked "60"

Item a3. Card contains number "3281"

SIMPLE WRITING (skill [b] in Table 8) Does not include practice item.

Presentation instructions: Respondent is presented with a series of cards, one at a time, for about 15 seconds per card; respondent must follow specific instructions for each item, as noted below.

Scoring instructions: These items require subjective assessment by the interviewer. Each item is scored as "correct" = 1 point, "incorrect" = 0 point, or partial correct = 0.5 point. Two partially correct items would add to 1 point, three partials would be considered as 1 point, and four partials would be considered as 2 points.

Item b1. Presentation instructions: "Here is a card with nothing written on it. Please write the number "3" on it."

Item b2. Presentation instructions: "Here is a card with nothing written on it. Please write the following number on this card: "97".

Item b3. Presentation instructions: "Here is a card with the number "375" on it. Please copy this number on this other (blank) card.

LOCATING INFORMATION IN SIMPLE TEXT (skill [e] in Table 8) Only practice items presented.

Presentation instructions: Note: Respondent is presented with a series of cards, one at a time, for about 15 seconds per card; respondent must simply point to the "correct" number or numbers in the text or the document. "Please look at this card, on which is written some information. Please point to which number (or numbers) in the written text which I will ask you for".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

Practice Item e. A card contains the following text: "LEILA AND FATIMA WENT TO THE MARKET TO BUY CORN. THEY HAD TO WALK 14 KILOMETERS TO THE TOWN WHERE THE MARKET WAS LOCATED". Interviewer asks: "Where is the number "14" in the text? For the practice item only, it is possible to "coach" the respondent by providing help and additional information to help him understand what is expected of him.

Item e2. A card contains copy of simple government document [eg., electricity bill (or equivalent)]. Interviewer asks: "How much does the person have to pay this month for electricity?"

SOLVING ORAL ARITHMETIC PROBLEMS (skill [f] in Table 8) Only one "practice" item presented.

Practice instructions: Note, Respondent is presented with short oral problems which he has to solve mentally. "Please listen to the following problem, and give me the answer needed".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

Practice Item f. "If your father gave you two bushels of corn and your uncle gave you two more bushels of corn, how many bushels of corn would you then have?

SOLVING WRITTEN ARITHMETIC PROBLEMS (skill [d] in Table 8) Only one practice item presented.

Presentation instructions: Note: Respondent is presented with a series of cards, one at a time, for about 120 seconds per card; a second card contains a choice of 4 numbers for each problem. "Please look at this card on which is written a short story. The story also asks a question which involves finding a correct number. "Please tell me the correct number, among the 4 numbers presented on the second card".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

Item d. On the card is written: "SALLY AND MARILYN WALKED 11 KILOMETERS TO THE MONDAY MARKET, AND 7 KILOMETERS TO THE WEDNESDAY MARKET". How many total kilometers did they walk on Monday and Wednesday? Interviewer shows second card with number: "17 20 18 11".

LOCATING INFORMATION IN COMPLEX TEXT (skill [g] in Table 8)

Presentation instructions: Respondent is presented with a series of cards, one at a time, for about 15 seconds per card; respondent must simply point to the "correct" number or numbers in the text. "Please look at this card, on which is written some information. Please point to which number (or numbers) in the written text which I will ask you for".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

Item g. Card contains picture of a medicine bottle, with a visible label on dosage saying "TAKE 3 TIMES EACH DAY" For the practice item only, it is possible to "coach" the respondent by providing help and additional information to help him understand what is expected of him. Interviewer asks respondents: "Where does it indicate how many times to take the medicine each day?"

Item g1. Card contains picture of a medicine bottle with a more complex label, "ADULTS TAKE 50 ml. 2 TIMES EACH DAY, CHILDREN TAKE 25 ml. 4 TIMES EACH DAY". Interviewer asks respondent. "Point to all numbers on label".

SOLVING ARITHMETIC EQUATIONS (skill [c] in Table 8)

Presentation instructions: Respondent is presented with a card for about 60 seconds; respondent is then asked, in multiple choice format, to choose which of the 4 optional answers is correct. "Please look at this card, on which is written an equation, and study it carefully. I would like to ask you for the correct answer among the 4 numbers presented on this second card".

Scoring instructions: Each item (except practice item) is scored as "correct" = 1 point, or "incorrect" = 0 point.

Practice Item c. Card contains the following problem: $3 + 21$
= _____. Multiple choice card: "20, 32, 4, 24".

Item c1. Card contains the following problem: $87 - 42$
= _____. Multiple choice card: "129, 85, 45, 139."

A N N E X C

S A M P L E Q U E S T I O N N A I R E S :

1. ZIMBABWE 1986

2. KENYA 1987

1. Zimbabwe Literacy Survey (1986)

This survey was first to incorporate some of the ideas discussed in this technical study. The survey used additional objective tests to assess literacy across three main literacies in use in Zimbabwe. The survey instrument consisted of two parts: (1) a questionnaire aimed at gathering information on demographic and educational history, as well as on literacy use and self-assessed literacy ability; (2) a series of literacy and numeracy tests (examples provided).

PROVINCE :

Ausgangspunkt ist:

DATE: / /

DATE OF NUMBER: 1 / 86

STARTING TIME :

SURVEY NO.	ROUND NO.	ADMINISTRATIVE AREA	DIVISION	C.A. NO.	JOINT NO.	JOB-SAMPLE	REGISTRATION	YEAR	MONTH	COLLECTOR	RECORD TYPE
1	2	3	4	5	6	7	8	9	10	11	12
1	1	0	1								1

[illegible]

Col. 27 : RELATIONSHIP TO HEAD
OF HOUSEHOLD

Col. 36 : MAIN REASON FOR CHID

OF HOUSEHOLD	RELATIONSHIP TO HEAD
Head	= 1
Spouse	= 2
Son/Daughter	= 3
Other Relative	= 4
Not Related	= 5

Sick/disabled	1
School fees high	2
Child needed to help at home	3
Child needed to help at home	4
No school in the neighbourhood	5
No room in school	6
Failed at school	7
Too young	8
Other	9

ENDING TIME	NUMBER FOR	CHICKEN BY	TEAM LEADERS	DATE
12:00	1	1	1	1
12:30	2	2	2	2
13:00	3	3	3	3
13:30	4	4	4	4
14:00	5	5	5	5
14:30	6	6	6	6
15:00	7	7	7	7
15:30	8	8	8	8
16:00	9	9	9	9
16:30	10	10	10	10
17:00	11	11	11	11
17:30	12	12	12	12
18:00	13	13	13	13
18:30	14	14	14	14
19:00	15	15	15	15
19:30	16	16	16	16
20:00	17	17	17	17
20:30	18	18	18	18
21:00	19	19	19	19
21:30	20	20	20	20
22:00	21	21	21	21
22:30	22	22	22	22
23:00	23	23	23	23
23:30	24	24	24	24
24:00	25	25	25	25
24:30	26	26	26	26
25:00	27	27	27	27
25:30	28	28	28	28
26:00	29	29	29	29
26:30	30	30	30	30
27:00	31	31	31	31
27:30	32	32	32	32
28:00	33	33	33	33
28:30	34	34	34	34
29:00	35	35	35	35
29:30	36	36	36	36
30:00	37	37	37	37
30:30	38	38	38	38
31:00	39	39	39	39
31:30	40	40	40	40
32:00	41	41	41	41
32:30	42	42	42	42
33:00	43	43	43	43
33:30	44	44	44	44
34:00	45	45	45	45
34:30	46	46	46	46
35:00	47	47	47	47
35:30	48	48	48	48
36:00	49	49	49	49
36:30	50	50	50	50
37:00	51	51	51	51
37:30	52	52	52	52
38:00	53	53	53	53
38:30	54	54	54	54
39:00	55	55	55	55
39:30	56	56	56	56
40:00	57	57	57	57
40:30	58	58	58	58
41:00	59	59	59	59
41:30	60	60	60	60
42:00	61	61	61	61
42:30	62	62	62	62
43:00	63	63	63	63
43:30	64	64	64	64
44:00	65	65	65	65
44:30	66	66	66	66
45:00	67	67	67	67
45:30	68	68	68	68
46:00	69	69	69	69
46:30	70	70	70	70
47:00	71	71	71	71
47:30	72	72	72	72
48:00	73	73	73	73
48:30	74	74	74	74
49:00	75	75	75	75
49:30	76	76	76	76
50:00	77	77	77	77
50:30	78	78	78	78
51:00	79	79	79	79
51:30	80	80	80	80
52:00	81	81	81	81
52:30				

CENTRAL STATISTICAL OFFICE
P.O. BOX 8063, CAUTINWAY
19048

15 YEARS AND ABOVE

RECORD 1971.7

PROVINCE :	ADMINISTRATIVE AREA :	DIVISION :	NAME :	HOUSEHOLD NUMBER :	SERIAL NO. :	STARTING TIME :
9. Are you still attending these Adult Literacy classes? Yes = 1 (Go to 2.10) No = 2 (Go to 2.4) 10. If not, when did you last attend such classes? 1 - 6 months ago = 1 7 - 12 months ago = 2 1 - 2 years ago = 3 more than 2 years ago = 4 (Go to 2.10) 11. What language, or languages are/are you being taught to read and write in these Adult Literacy classes? Shona only = 1 Ndebele only = 2 English only = 3 (Go to 2.12) Shona and English only = 4 Ndebele and English only = 5 Other = 6 (Specify) 12. Why didn't you want to come to read and write? writing better = 1 acquiring knowledge = 2 lack of interest = 3 no time = 4 other = 5 (Go to 2.13) 13. Has a friend or member of your family tried to help you to improve your reading ability? Yes = 1 (Go to Part 8) No = 2 (Go to Part 8) 14. What is the main reason why you are not attending Adult Literacy classes? already literate = 1 lack of interest = 2 lack of time = 3 no time = 4 (Go to 2.14) 15. If you are not attending Adult Literacy classes, why not? already literate = 1 lack of interest = 2 lack of time = 3 no time = 4 (Go to 2.14) 16. If you are not attending Adult Literacy classes, why not? already literate = 1 lack of interest = 2 lack of time = 3 no time = 4 (Go to 2.14) 17. How many days a week did/do you attend these Adult Literacy classes? one day a week = 1 two days a week = 2 three days a week = 3 four days a week = 4 five days a week = 5 other = 6 (Specify)						
1. Have you ever attended formal (primary/secondary or correspondence school)? Yes = 1 (Go to 2.2) No = 2 (Go to 2.4) 2. What is the highest level of education you completed? Enumerator: Write respondent's grade/standard in space above. See Manual, page 17 for correct Education code to enter. (Go to 2.3) 3. How long ago did you leave school? still in school = 1 0 - 12 months ago = 2 1 - 2 years ago = 3 3 - 4 years ago = 4 5 - 9 years ago = 5 10 - 14 years ago = 6 15 - 19 years ago = 7 20 or more years ago = 8 (Go to 2.4) 4. Are you now, or have you ever attended reading and writing (Adult Literacy) classes outside of Primary or Secondary school? Yes = 1 (Go to 2.5) No = 2 (Go to 2.13) 5. What type of Adult Literacy classes have you recently attended? National Literacy Campaign (post independence) = 1 ALOR/ALOR classes = 2 Other = 3 (Specify) (Go to 2.6) 6. For how long have you been/did you attend these Adult Literacy classes? 0 - 6 months = 1 7 - 12 months = 2 1 - 2 years = 3 3 - 4 years = 4 5 - 7 years = 5 more than 7 years = 6 (Go to 2.7) 7. How many days a week did/do you attend these Adult Literacy classes? one day a week = 1 two days a week = 2 three days a week = 3 four days a week = 4 five days a week = 5 other = 6 (Specify)						

RECORD TYPE 3

15 YEARS AND ABOVE

PROVINCE _____ ADMINISTRATIVE AREA: _____ DIVISION: _____ DATE: _____ HOUSEHOLD NUMBER: _____ SERIAL NO.: _____

B. LANGUAGES, LITERACY AND MINORITY BACKGROUND

15. What is your maternal (best) language?

- Shona 1
- IsiNdebele 2
- English 3
- Other 4 (specify) _____

16

(Note: Ask Q. 16 - 18 in Maternal language. First, ask Q. 16 - 18 about Maternal language; then ask Q. 16 - 18 about English; then ask Q. 16 - 18 about second vernacular. Complete other only if respondent says he speaks another language.)

16. How well do you speak and understand?

- very well 1
- fairly well 2
- very little/not at all 3

Sh. IsiNde. Eng. Oth.
17a 17b 17c 17d

17. How well can you write a letter in?

- very well 1
- fairly well 2
- very little/not at all 3

Sh. IsiNde. Eng. Oth.
18a 18b 18c 18d

18. How well can you write in?

- very well 1
- fairly well 2
- very little/not at all 3

Sh. IsiNde. Eng. Oth.
19a 19b 19c 19d

19. (Interviewer: Only ask respondents who say they can read a newspaper in any language. Otherwise skip to Q. 25):

Do you ever read in your spare time?

- yes 1 (Go to Q. 20)
- no 2 (Go to Q. 27)

20

20. (If yes), what do you most often read?

- newspaper/magazine 1
- novel/story book 2
- advertising/poster/billboard 3
- bible/religious materials 4
- other 5 (specify) _____

21

21. What language do you prefer to read this material in?

- Shona 1
- IsiNdebele 2
- English 3
- Shona and English 4
- IsiNdebele and English 5
- Shona and IsiNdebele 6
- All three languages 7
- Other 8

22

22. Have you ever written a letter?

- yes 1 (Go to Q. 27)
- no 2 (Go to Q. 27)

23

23. (If yes) to whom have you written most often?

- relative 1
- friend 2
- boss 3
- teacher 4
- government official 5
- other 6 (specify) _____

24

24. In what language do you most often write?

- Shona 1
- IsiNdebele 2
- English 3
- Shona and IsiNdebele 4
- All three languages 5
- Other 6 (specify) _____

25

25. Which language do you think is most useful for you to read and write in?

- Shona 1
- IsiNdebele 2
- English 3
- Shona and IsiNdebele 4
- All three languages 5
- Other 6 (specify) _____

26

26. (Interviewer: Only ask respondent Q. 26 if he/she responded "very well" to Q. 19 or "fairly well" to Q. 17 otherwise skip to Q. 28):

Do you ever read anything for people who can't read?

- If yes, what do you read most frequently for such people?
 - never read for others 1
 - letters 2
 - newspaper/magazine 3
 - novel/storybook 4
 - other 5 (specify) _____
- audiotape labels 6
- forms/bills 7
- reading card 8
- other 9

27

27. Do you ever write anything for people who can't write?

- If yes, what do you write most frequently for such people?
 - never write for others 1
 - letters 2
 - forms/bills 3
 - work purposes 4
 - diary 5
 - bible/religious materials 6
 - other 7 (specify) _____

28

CENTRAL STATISTICAL OFFICE
P.O. BOX 6063, CAUSEWAY
HARARE

15 YEARS AND ABOVE

RECORD TYPE 3

Tot. 706681

PROVINCE : _____ ADMINISTRATIVE AREA : _____ DIVISION : _____ NAME : _____ HOUSEHOLD NO. : _____ SERIAL NO. : _____

28. What do you think is the MAIN reason for people learning how to read? (that will they do with it?)

read letters	= 1	job requirements	= 5
read for knowledge	= 2	communication/information	= 6
read bills/notes	= 3	other	= 7
read street signs	= 4	(specify)	

(Go to Q.29)

29. For whom is it MOST important to read and write :
men, or women, or is it the same for both?

men	= 1		
women	= 2		
same for both	= 3		

(Go to Q.30)

30. Are you a paid employee?

Yes	= 1		
No	= 2		

(Instruction) : If respondent says Yes, go to Q.31
If respondent says No, go to Q.32.

31. In order to get your current job, was it important to know how to read and write?

very important	= 1		
fairly important	= 2		
not at all	= 3		
don't know	= 4		

(Go to Q.32)

32. How often do you use reading and writing in your job/occupation (including your household activities)?

regularly/often	= 1		
sometimes	= 2		
never	= 3		

(Go to Q.33)

33. (Instruction) : If respondent answered very little/no at all = 3 to Q.37 then ask Q.33. Otherwise, go to 34.

What would you most like to be able to read?

government information	= 1	instructions/labels/signs	= 6
letters	= 2	work related material	= 7
newspaper/magazine	= 3	advertising/posters	= 8
books/novels	= 4	other	= 9
church related materials	= 5	(specify)	

(Go to Q.34)

34. When you have to do arithmetic (for example, calculating the total cost of things you buy at the market, can you do this yourself, or do you ask someone to do this for you?

yourself	= 1	(Go to Q.35)	
someone else	= 2	(Go to Q.36)	

(Go to Q.36)

35. If you have a difficult arithmetic problem (for example, you buy 13 items at 30 cents each), do you usually add the total cost in your head, or do you usually use pencil and paper?

In head	= 1		
on paper	= 2		
sometimes head/sometimes paper	= 3		
other	= 4	(specify)	

(Go to Q.36)

36. Only for head of household. (If respondent is engaged in Agriculture)

When you harvest your crop, do you calculate how many bags you keep, how many you sell, and the amount of money you will receive or does someone else calculate this for you.

yourself	= 1		
someone else	= 2		
no calculations	= 3		

Go to test 1 : Word - Picture Matching test.

ending line :

- 5 -

Starting time : _____

15 YEARS AND ABOVE WHO NEVER COMPLETED FORM/GRADE 9/ICE LOWER 2

Record Type A

PROVINCE : _____ ADMINISTRATIVE AREA : _____ DIVISION : _____ NAME : _____ HH NO. : _____ SERIAL NO. : _____

SCORE SHEET TEST 1 : WORD-PICTURE MATCHING TEST

Fill in number of Forms(s) used for test 1 :

SH Eng Nde

Form 1 - 1

Form 2 - 2

Form 3 - 3

Instructions :

Use one form for each person. Test each person on all 3 languages. On practice items, it is helpful to ask the respondent to orally name the object first (ask, "What is this?" then ask, "Where is the word for this object?"). Do not request naming of objects on regular items.

You should provide help and guidance only on the Practice items (P1-P3); do NOT provide help on the remaining items. Proceed to test items (1-12) only if respondent succeeds in obtaining 2 out of 3 correct on the practice items.

You can provide the correct answers on the Practice items. Do NOT provide the correct answers on test items; just say "Good" and go to next item. Be sure to complete all 12 test items once you start them.

Provide no more than 30 seconds for each Regular item.

SHONA	ENGLISH		NDEBELE	
	test order	last order	test order	last order
P1	correct	incorrect	correct	incorrect
P2	correct	incorrect	correct	incorrect
P3	correct	incorrect	correct	incorrect

Note : Proceed to next section only if respondent gets at least 2 out of 3 practice items correct.

SHONA	ENGLISH		NDEBELE	
	test order	last order	test order	last order
1.	correct	incorrect	correct	incorrect
2.	correct	incorrect	correct	incorrect
3.	correct	incorrect	correct	incorrect
4.	correct	incorrect	correct	incorrect
5.	correct	incorrect	correct	incorrect
6.	correct	incorrect	correct	incorrect
7.	correct	incorrect	correct	incorrect
8.	correct	incorrect	correct	incorrect
9.	correct	incorrect	correct	incorrect
10.	correct	incorrect	correct	incorrect
11.	correct	incorrect	correct	incorrect
12.	correct	incorrect	correct	incorrect
Total	correct	incorrect	correct	incorrect

SCORE SHEET TEST 2 : ORAL READING TEST

Fill in number of Forms(s) used for Test 2

SH Eng Nde

Form 1 - 1

Form 2 - 2

Form 3 - 3

SHONA	ENGLISH		NDEBELE	
	test order	last order	test order	last order
1.	correct	incorrect	correct	incorrect
2.	correct	incorrect	correct	incorrect
3.	correct	incorrect	correct	incorrect
4.	correct	incorrect	correct	incorrect
5.	correct	incorrect	correct	incorrect
6.	correct	incorrect	correct	incorrect
7.	correct	incorrect	correct	incorrect
8.	correct	incorrect	correct	incorrect
9.	correct	incorrect	correct	incorrect
10.	correct	incorrect	correct	incorrect
11.	correct	incorrect	correct	incorrect
12.	correct	incorrect	correct	incorrect
Total	correct	incorrect	correct	incorrect

Instructions to Enumerators :

Give one (1) mark for each word correctly read.

Only test the respondent in the language or languages in which he/she scored 4 or more points in Word-Picture-Matching, Test 1.

Enter the total of correctly read words in the appropriate boxes.

(Note : Do NOT count practice items (P1-P3) in these totals).

If respondent gets 4 or more points in a language or languages, then test respondent in appropriate language or languages on subsequent tests.

Record Type 4

15 YEARS AND ABOVE WHO NEVER COMPLETED FORM 2 (GRADE 9/10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100)

PROVINCE : _____ ADMINISTRATIVE AREAS : _____ DIVISION : _____ NAME : _____ HOUSEHOLD NO. : _____ SERIAL NO. : _____

SCORESHEET FOR TEST 3 : WRITING TEST

Fill in number of Form(s) used for Test 3.

Sh	Eng	Rds

Form 1 = 1

SHONA Total	ENGLISH Total	NDEBELE Total

Accuracy
Scale

--	--	--

Instructions to Enumerator :

- Give one (1) mark for each correctly spelled word
- Enter the total of correctly spelled words in the appropriate boxes.
- Remember to indicate which language(s) and Form(s) you are using.
- Do not judge the speed or beauty of the handwriting.

Starting time :

Respondent should write here (below)

SCORE FOR TEST 4 : NUMERACY TEST

There is only one form of this test.

	Correct	In correct
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
12.		
Total correct		Total incorrect

Instructions to Enumerator :

Give the respondent the Numeracy Test and a pencil before he/she begins the test.

The test should be given silently.

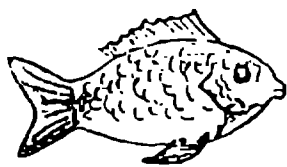
Note : Answers to arithmetic problems should NOT be given to respondents. They are on a special sheet for your information only. Use the answers to check those of the respondent.

ENDING TIME :

ENDING TIME :

WORD-PICTURE MATCHING TEST

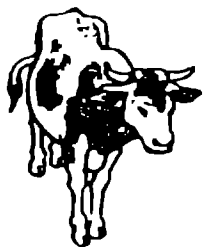
ENGLISH : FORM 3



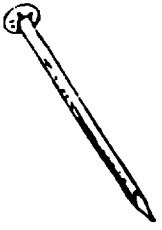
fish fountain camel flag



cap cup river fire



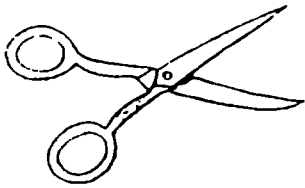
candle cow copper cold



head pail night nail



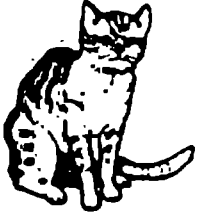
father hair feather farmer



badge scorpion scissors egg



watch match cigarette water



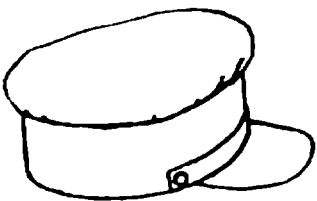
sand crying zoo cat



wave dress hammer wall



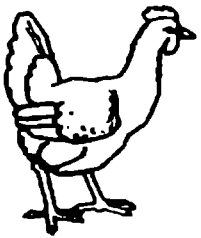
plant cage antelope ant



crayon rope cap cinema



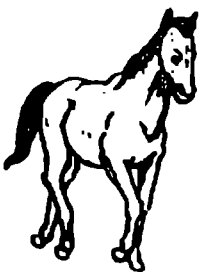
captain knife net wife



children chicken kraal cave



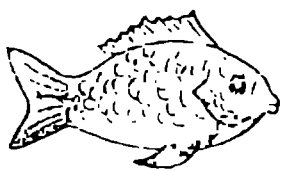
monsoon camera spider spoor



hotel plastic tower horse

WORD-PICTURE MATCHING TEST

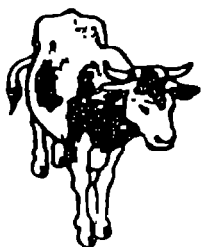
SHONA : FORM 2



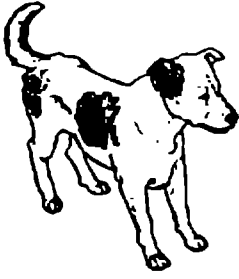
hama hove hoko hokai



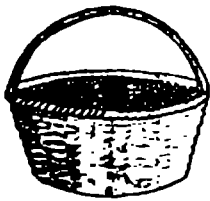
kasika komichi seka tora



mombe munhu mukaha marete



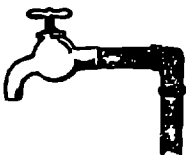
donha bango imbwa bata



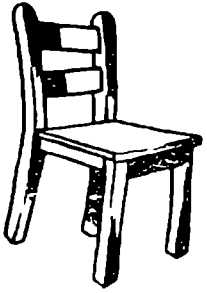
mbambaira mbada bhasikiti tsenza



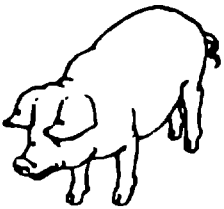
inho tsoro imba danga



pamba pururudza pombi pondo



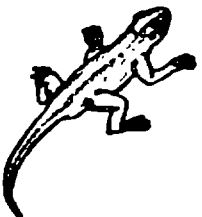
chituro chembere chose geza



ngano nhasi gore nguruve



mukoko muti murara tsanga



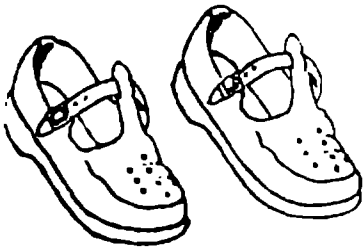
dzosera dzvinyu sadza sara



duri doro zviyo nzungu



njiva bhazi bhara rukova



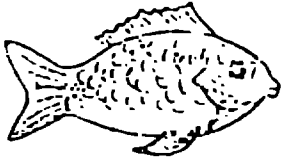
shangu shungu shuga shangura



chipeneti chituta peni chipandu

WORD-PICTURE MATCHING TEST

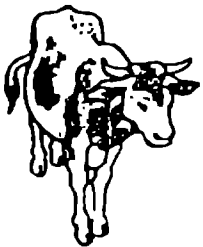
NDEBELE : FORM 3



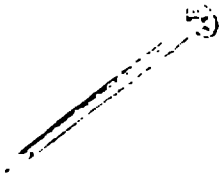
dlula inyamazana inhlanzi ubibi



ikhabe inkomitshi ingubo lala



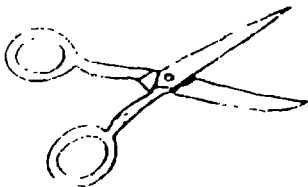
inkomo khama inkosikazi uhambo



isipikili phikisa phakama bonga



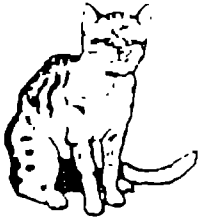
usisi usiba isotsha ikhefu



imbambo isigelo isitsha isivalo



iwaya wela iwatshi dabula



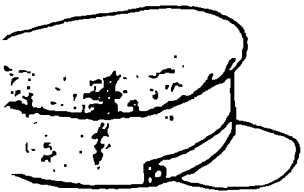
iluba umangoye igundwane isimbi



intambo amalahle qamula isigqhoko



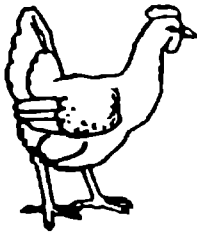
ubunyonyo nyenya nyeya nyenama



icansi ikepesi isikopela isithende



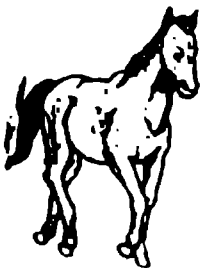
ingqondo ingqamu umngane gamula



intaba inkukhu insimu ugodo



utshwala umtshina isipunu itiye



ibhatshi ibhiza ibhola amehlo

READING TEST - FORM 1

SHONA: TAPIWA MURIMI
 ANE MUNDA MUKURU UYO
 WAANORIMA CHIBAGE NE NZUNGU

ENGLISH: JOHN WENT TO THE STORE TO BUY
 SOME EGGS.
 AFTER THIS HE WENT TO VISIT
 A FRIEND.

NDEBELE: USIHLE ULEMINYAKA EYISIKHOMBISA
 NJALO UYAFUNDA ESIKOLO.
 UZIMISELE EZIFUNDWENI ZAKHE.

FORM 2

SHONA: FARAI AKAENDA KUCHITORO KUNOTENGA
MAZAI.
MUSHURE MEZVO, AKAZOENDA KUNOONA
SHAMWARI YAKE.

ENGLISH: MARTHA IS SEVEN YEARS OLD AND GOES
TO SCHOOL
SHE WORKS HARD AT HER STUDIES

NDEBÉLE: USIPHO NGUMLIMI.
ULENSIMU ENKULU LAPHO AHLANYELE
UMUMBU LAMAZAMBANE.

SHONA: CHIPO ANE MAKORE MANOMWE
 OKUBEREKWA ZVEKARE ANDENDA KUCHIKORO.
 ANOSHANDA NESIMBA MUZVIDZIDZO ZVAKE.

ENGLISH: JOSEPH IS A FARMER.
 HE HAS A LARGE PLOT OF LAND, WHERE
 HE GROWS MAIZE AND GROUNDNUTS.

NDEBELE: UTHEMBA WAYA ESITOLO UKUYATHENGA
 AMAQANDA.
 NGEMVA KWALOKHO WETHEKELELA UMNGANE
 WAKHE.

TEST 2.

WRITING TEST:

FORM 1

SHONA:

FARAI ANOHORA MARI NEKUTEMA HUNI

BASA RAKE RAKAOMA, ASI ANONAKIDZWA NARO ZVIKURU

ENGLISH:

MARY HAS MANY FRIENDS IN SCHOOL.

SHE SPENDS MOST OF HER TIME PLAYING WITH THEM.

NDEBELE:

USIPHO YINDODA ESIKHULILE ELABAZUKULU ABANENGI.

UYINDODA EQAKATHEKILEYO ESIGABENI SAKHE.

TEST 2.

WRITING TEST: FORM 2

SHONA: TAPIWA MURUME ACHEMBERA ANEVAZUKURU VAKAWANDA.
MURUME AKAKOSHA KWAZVO MUDUNHU RAKE.

ENGLISH: GEORGE EARNS MONEY BY CUTTING FIREWOOD.
HIS WORK IS HARD, BUT HE ENJOYS IT VERY MUCH.

NDEBELE: USIHLE ULABANGANE ABANENGI ESIKOLO.
UCHITHA ISIKHATHI SAKHE ESINENGI EDLALA LABO.

TEST 2

WRITING TEST: FORM 3

SHONA: CHIPO ANE SHAMWARI DZAKAWANDA KUCHIKORO.
 ANOPEDZA NGUVA YAKE YAKAWANDA ACHITAMBA NADZO.

ENGLISH: JAMES IS AN OLD MAN WITH MANY GRANDSONS.
 HE IS AN IMPORTANT MAN IN HIS VILLAGE.

NDEBELE: UJOSEFA WENZA IMALI NGOKUTHEZA INKUNI.
 UMSEBENZI WAKHE UNZIMA, KODWA UYAWUKHOLISA
 KAKHULU.

1) $2 + 5 = \underline{\hspace{2cm}}$

7)
$$\begin{array}{r} 35 \\ + 9 \\ \hline \\ \hline \end{array}$$

2) $7 - 4 = \underline{\hspace{2cm}}$

8)
$$\begin{array}{r} 23 \\ - 11 \\ \hline \\ \hline \end{array}$$

3) $3 + 9 = \underline{\hspace{2cm}}$

9)
$$\begin{array}{r} 24 \\ + 8 \\ \hline \\ \hline \end{array}$$

4)
$$\begin{array}{r} 22 \\ - 6 \\ \hline \\ \hline \end{array}$$

10)
$$\begin{array}{r} 45 \\ - 17 \\ \hline \\ \hline \end{array}$$

5)
$$\begin{array}{r} 87 \\ + 72 \\ \hline \\ \hline \end{array}$$

11)
$$\begin{array}{r} 36 \\ - 17 \\ \hline \\ \hline \end{array}$$

6)
$$\begin{array}{r} 35 \\ \times 9 \\ \hline \end{array}$$

12) $24 \div 8 = \underline{\hspace{2cm}}$

2. Kenya Literacy Survey (1988)

This survey was apparently one of the first household surveys to include the use of objective measurement of literacy ability across a wide number of literacies (more than a dozen were actually tested). The questionnaire was structured very similarly to the Zimbabwe survey in its use of background questions, questions on literacy use, and objective tests. However, the literacy tests, themselves, were apparently limited to oral reading and writing/copying.

1	2	3	4	5	6	7	8

0	1
9	10

11	12

13	14

ID CODE

CARD NO H/HOLD
SIZE

NO. ER

PROVINCE _____ DISTRICT _____
LOCATION _____ DATE _____
ENUMERATOR _____ SUPERVISOR _____

SERIAL NO.	NAME	SEX Male -1 Female -2	Age		RELATIONSHIP TO HEAD Head --1 Wife --2 Child -3 Other -4	MARITAL STATUS Single-----1 Married---2 Divorced--3 Separated-4	RELIGION Protestant-1 Catholic - 2 Other ----- 3	FOR CHILDREN 5-10 SCHOOL ATTENDANCE At School --- 1 Not at School-2		FOR CHILDREN 5-10 NOT AT SCHOOL * MAIN REASON FOR CHILD NOT ATTENDING SCHOOL	
			16	17				18	19	20	21
Col.15			16	17	18	19	20	21	22	23	
01											
02											
03											
04											
05											
06											
07											
08											
09											
10											
11											
12											
13											
14											
15											

*MAIN REASON FOR CHILD NOT ATTENDING SCHOOL

Too young ----- 1
Child helping at home or elsewhere --- 2
School expenses too high ----- 3
No School in the neighbourhood ----- 4

No room in School 5
Sick or disabled 6
Failed at School 7
Other ----- 8

KENYA GOVERNMENT
CENTRAL BUREAU OF STATISTICS
LITERACY SURVEY 1988
INDIVIDUAL QUESTIONNAIRE

CONFIDENTIAL

Target Population: All members of the household aged 10 years and above
ID. CODE CARD NO.

PROVINCE _____ DISTRICT _____
LOCATION _____ DATE _____
ENUMERATOR _____ SUPERVISOR _____

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

0	2
9	10

11	12
----	----

Respondent's name _____ Sex: Male 1 Female 2 Age _____

13

1. What is the highest level of education you completed? (Specify) _____

14	15
----	----

Enumerator: Write the respondent's grade/standard in the space above. See below for correct education code to enter.
(If '00' Go to Q4)

2. Are you still attending school?

16

Yes 1 (Go to Q11)
No 2 (Go to Q3)

3. How long ago did you leave school?

17

0 - 12 months ago 1 5 - 9 years ago 4
1 - 2 years ago 2 10 - 14 years ago 5
3 - 4 years ago 3 Over 15 years ago 6

4. Have you ever attended any adult literacy courses?

18

Yes 1 (Go to Q5)
No 2 (Go to Q9)

5. Are you still attending these adult literacy courses?

19

Yes 1
No 2

6. How long have you been/did you attend these adult literacy courses?

20

0 - 6 months 1 3 - 4 years 4
7 - 12 months 2 5 - 7 years 5
1 - 2 years 3 Over 7 years 6

7. How many days a week did/do you attend these adult literacy courses.

21

One day a week 1 Four days a week 4
Two days a week 2 Five days a week 5
Three days a week 3 Other (Specify) 6

8. Was (is) the adult education course Government aided or voluntary?

22

Government aided 1
Voluntary 2 (Go to Q11)

9. Why have you not attended any adult literacy courses?

23

Already literate 1 Dropped out 5
Lack of interest 2 Won't mix sexes 6
Lack of time 3 Other (Specify) 7
Teacher/class not available 4

10. If you dropped out, why?

24

Lack of interest 1 Too shy and embarrassed 5
Lack of time 2 Won't mix sexes 6
Teacher/class not available 3 Other (Specify) 7
Too old 4

11. Are you able to read and write in any language?

25

Yes 1 (Go to Q12)
No 2 (End interview)
Very well 1
Partially 2
Never 3

12. How well can you write in any language?

26

Very well 1
Partially 2
Never 3

Education Codes for Q1 Primary plus vocational
No schooling 00 teachers' training15
Std. I thro' Std. 8 01, 08 Some secondary plus vocational
Form I-III 09, 10 or teacher training16
Form III-IV 11, 12 Completed secondary plus
Form V- VI 13, 14 vocational/teacher training 17
University 18

13. How well can you read a letter or a newspaper in English?
(Use codes in Q12)
14. How well can you write a letter in English?
(Use codes in Q12)
15. How well can you read a letter or a newspaper in Kiswahili?
(Use codes in Q12)
16. How well can you write a letter in Kiswahili?
(Use codes in Q12)
17. How well can you read a letter or a newspaper in your mother tongue?
(Use codes in Q12)
18. How well can you write a letter in your mother tongue?
(Use codes in Q12)
19. What do you mostly read? i.e. two or more times a month.
Newspapers/magazines 1 Bible 5
Books/Novels 2 None of These 6
Government Publications 3
Literary Pamphlets 4
20. What would you most like to be able to read?
Letters 1 Others (Specify) 5
Newspapers 2
Instructions/labels/signs 3
Advertisements/Posters 4
21. In your current occupation, is it important to know how to read and write?
Very important 1 Not at all 3
Fairly important 2 Don't know 4
22. How often do you use reading and writing
Regularly/often 1
Sometimes 2
Never 3

part 11

Instructions

Administer the tests to all respondents with educational attainment below form I who answered 'Yes' in Q11. Do not give the test to any respondents who state clearly in Q11 that they are not able to read. Select a different paragraph from the one given to a previous respondent in the household

Test of reading in English

After trying to administer the tests, the enumerators should answer questions 23 to 41

23. Has the respondent taken the test?

Yes 1 (If Yes, Go to Q25)
No 2 (If No, Go to Q24)

24. The respondent was not tested because:-

Respondent had an educational attainment of Form I and above.....1

Respondent said he/she could not read in English.....2

Respondent refused to take the test.....3

25. If the respondent took the test of reading in English, how many words did he/she read correctly?

25 or more 1
11 - 24 2
Less than 10 3

Test of writing in English

Administer the test in the space provided below.

26. Has the respondent taken the test?

Yes 1 (Go to Q28)
No 2 (Go to Q27)

27. The respondent was not tested because:-

Respondent had education attainment of Form I and above.....1

Respondent said he/she could not write in English.....2

Respondent refused to take the test.....3

28. If the respondent took the test of writing in English, how many words did he write correctly?

15 or more 1
10 - 14 2
Less than 10 3

27	
28	
29	
30	
31	
32	
33	
34	
35	
36	

37

38

39

40

41

42

Test of reading in Kiswahili

29. Has the respondent taken the test

Yes 1 (Go to Q31)
No 2 (Go to Q30)

43

30 The respondent was not tested because:-

Respondent had educational attainment of
Form I and above1
Respondent said he could not read in Kiswahili..2
Respondent refused to take the test.....3

44

31. If the respondent took the test of reading in Kiswahili,

how many words did he/she read correctly. _____ words.

More than 25 1
11 - 24 2
Less than 10 3

Test of writing in Kiswahili

Administer the test in the space provided below.

46

32. Has the respondent taken the test?

Yes 1 (Go to Q34)
No 2 (Go to Q33)

46

33. The respondent was not tested because:-

Respondent had an educational attainment of
Form I and above.....1
The respondent said he/she could not write in
Kiswahili.....2
Respondent refused to take the test.....3

47

34. If the respondent took the test of writing in Kiswahili,

how many words did he/she write correctly?

15 or more 1
10 - 14 2
Less than 10 3

48

35. What is the respondent's mother tongue?
(Specify) _____

49 50

Test of reading in mother tongue

36. Has the respondent taken the test?

Yes 1 (Go to Q38)
No 2 (Go to Q37)

51

37. The respondent was not tested because:-

Respondent had educational attainment of
Form I and above.....1
Respondent could not read in mother tongue..2
Respondent refused to take the test.....3
Relevant passage was not available.....4
If the respondent took the test of reading in
mother tongue, how many words did he/she read
correctly? _____ words.

More than 25 1
11 - 24 2
Less than 10 3

53

Test of writing in mother tongue

Administer the test in the space provided below.

39. Has the respondent taken the test?

Yes 1 (Go to Q41)
No 2 (Go to Q40)

54

40. The respondent was not tested because:-

Respondent had educational attainment of
Form I and above.....1
Respondent could not write in mother tongue..2
Respondent refused to take the test.....3
Relevant passage was not available.....4

55

41. If the respondent took the test of writing in
mother tongue, how many words did he/she write
correctly? _____ words.

15 or more 1
10 - 14 2
Less than 10 3

56

READING TEST
KISWAHILI

1. AMINA NA RAMADHANI WALIPENDEZEWA KUONA JINSI MIMEA ILIVYONAWIRI VIZURI KATIKA KILA SHAMBA. WALIKUWA WAKITAMANI MAHINDI YA KUCHOMA NA MACHUNGWA. MAMA YAO ALIKUWA NA SHAMBA LA MAHINDI NA MBOGA.
2. RAMADHANI NA AMINA WALIINGIA NDANI YA DUKA. DUKA HILO LILIKUWA NA PEREMENDE ZA AINA NYINGI HATA ILIKUWA VIGUMU KWAO KUJUA NI AINA GANI WANGENUNUA. WALIZUNGUKA ZUNGUKA MLE DUKANI KUJICHAGULIA PEREMENDE WATAKAZONUNUA.
3. AMINA NA RAMADHANI WALISIKITIKA SANA KUSIKIA SUWA WALIACHA MLANGO WA MOTOKAA WAZI. WALIMWOMBA BABA YAO MSAMAHU. WALIMWAMBIA HAWATARUDIA KOSA HILO TENA. WALIMWONYESHA PEREMENDE NA VIBOFU WALIVYOKUWA WAMENUNUA.
4. BAADA YA MUDA MFUPI, WALIFIKA NYUMBANI. NYUMBA YAO ILIKUWA KATIKA SHAMBA LAO LILILOKUWA LIMEZUNGUSHIWA UA. KULIKUWA NA LANGO KUBWA LA Kuingilia. pia kulikuwa na banda la kuwekea MOTOKAA.
5. ATHUMANI ALIKUWA MTOTO WA KUCHEKESHA SANA. ALIKUWA AKIPENDA SANA KUPANDA MOTOKAA HATA KAMA ILIKUWA KWA MWENDO MFUPI. ALIPOMALIZA KUFUNGUA LANGO, ALITAKA AINGIE MLE MOTOKAANI. BABA YAKE ALIMFUNGULIA MLANGO AKAINGIA NDANI.

WRITING TEST
KISWAHILI

1. AMINA NA RAMADHANI WALIKUWA WATOTO WA SHULE ILIYOKUWA IKIITWA SALAMA. WALIKUWA WAKIKAA HUKO HUKO SHULE NA KWENDA NYUMBANI WAKATI WA LIKIZO.
2. RAMADHANI NA AMINA WALIKUWA WATOTO WA KWANZA KUONDOKA SHULE. WATOTO WENGINE WALIWAONEA WIVU KWA KUWA WAZAZI WAO WALIKUWA HAWAJAFIKA KUWACHUKUA.
3. BABA YAO ALISIMAMISHA MOTOKAA KARIBU NA NYUMBA YAO. AMINA NA RAMADHANI WALITEREMKA HARAKA WAKAMKIMBILIA MAMA YAO ALIYEKUWA AKIJA MOTOKAANI KUWASALIMIA.
4. BABA YAO ALIPOONDOKA,, AMINA NA RAMADHANI WALIANZA KUCHUNGULIA KWENYE MADUKA YALIYOKUWA KARIBU NAO. WALIONA DUKA MOJJA LILILOKUWA LIKIUZWA PEREMENDE.
5. AMINA ALIPEWA KAZI YA KUFAGIA UWANJA ULIOZUNGUKA NYUMBA YAO. AMINA ALIFAGIA UWANJA WAO KILA SIKU NA KUOKOTA TAKATAKA ZOTE.

TEST OF READING
ENGLISH

1. IN EUROPE AND AMERICA PEOPLE WEAR WARM CLOTHES. MOST OF THE TIME THE WEATHER IS OFTEN COLD AND WINDY. IN SOME PLACES THE SUN DOES NOT APPEAR FOR MONTHS.
2. WHAT DO PEOPLE DO ON SUNNY DAYS? FARMERS GO TO WORK IN THE FIELDS. THEY CAN MOVE MORE FREELY. THE ROADS AND FOOTPATHS ARE DRY AND EASY TO USE.
3. THE NEXT TIME YOU PASS BY A MARKET OR A SHOP NOTICE HOW MANY TYPES OF BASKETS THERE ARE. FIND OUT WHAT THEY ARE MADE OF. WHAT ELSE IS MADE FROM SISAL?
4. OTHER PARTS OF OUR COUNTRY ARE FLAT. THEY ARE CALLED 'PLAINS'. PLAINS ARE USUALLY COVERED WITH GRASS AND A FEW TREES.
5. PERHAPS YOU HAVE TRAVELLED BY TRAIN TO NAIROBI, MOMBASA, KISUMU OR TO ELDORET. IN A PASSENGER TRAIN PEOPLE TRAVEL IN DIFFERENT COMPARTMENTS. A COMPARTMENT IS A PLACE WHERE PEOPLE SIT WHILE IN A TRAIN.

WRITING TEST
ENGLISH

1. THE RAINS COME AND IT FEELS COOL. THE SKY IS OFTEN COVERED WITH HUGE GREY CLOUDS. FARMERS CALL THIS THE SEASON OF THE LONG RAINS.
2. NAIROBI IS THE CAPITAL OF KENYA. IT IS THE LARGEST TOWN IN KENYA AND IN EAST AFRICA. THERE ARE TALL BUILDINGS.
3. ON BIG FARMS, WHERE THERE ARE MANY COWS, MILKING IS DONE BY MACHINES. TO KEEP THE MILK FRESH AS IT IS COOLED.
4. SUGAR CANE IS FOUND IN WARM PLACES. IT NEEDS PLENTY OF WATER TO GROW. THE RIPE CANE IS BIGGER THAN A MAIZE STALK.
5. THERE IS LITTLE RAIN NEAR NAIVASHA. HERE, ANIMALS ARE MORE IMPORTANT THAN CROPS BECAUSE THEY NEED LESS WATER.

READING TEST
DHOLUO

1. OTIENO NE NIGI PUOTHE MAROMO EKA (ACRE) ABIRIYO. TO KATA KAMANO EKA MAGE ABIRIYOGI NE OK NI E PUODHO ACHIEL. EKA MAGE ABIRIYOGI NENIE PUOTHE MATINDO TINDO MATHOTH. KUOM PUOTHENEGI MOKO NE BOR KOD DALANE. NE ONENO CHANDRUOK KUOM LOSO PUOTHENEGI.
2. YIER KOTHE MAG ODUMA MABEYO E OSUGRU ODUMA MABER. GOR LAINI MOLWORO WI OSUGRU ODUMA GI MALO. GOR LAINI MOLWORO KA PIER ODUMA GI MWALO. KIK IKONYRI GI KOTHE MAN EWI LAINI MA IGORO GI MALO KENDO MAN E BWO LAINI MA IGORO GI MWALO.
3. NOSOMO KITAPE. KITAPE NOWACHO, "ISEYIEYO CHIEMB CHAM E PUOTHI. ISEPURU LUM MA NE NI E PUOTHI EI LOWO. ISEPURU PUODHO MI LOWO OBEDO MAYOM. TO MANO OK OROMO. CHUNI BENDE NI NYAKA IBEDI GI KOTHE MABEYO. KOTHE MABEYO KELO CHAM MABEYO. KOTHE MARICHO GOLO CHAM MARICHO."
4. KUOM MANO OTIENO NOCHIELO KA MA OBIRO PIDHOE ALOT GI FITO. OTIENO NOCHIELO KANYO MOTEGNO. NOCHIELE OWUON. BANG'E NOSOMO KITAPE. KITAPE NOWACHO, "YIE CHIEMB CHAM MANG'ENY E PUODHONO. BANG'E LOWO MANTIE BIRO BEDO MOMEWO KUOM CHIEMB CHAM."
5. KUOM MANO OTIENO NODHI KA SIRIKAL E MIGAWO MAR AGRICULTURE. NE OPENJO KA ONYALO YUDO KOTHE MAG BEI MABEYO. NOPENJO KA ONYALO YUDO KOTHE MAG NG'OR KOD OGANDA MABEYO. NE OPENJO KA ONYALO YUDO KOTHE MAG RABUON MABEYO E MIGAWO MAR AGRICULTURE.

WRITING TEST
DHOLUO

1. WABIRO GORO LAINI E KOR ODUMA. KA WAYIERO KOTHE KAKA KITABU WACHONO, WABIRO BEDO GI CHAM MABEYO. OK WADWAR CHAM MARICHO. NYAKA WATIM KAKA KITABU WACHONWA. TO KOTHE MOKO TO? ERE KAKA WABIRO YIERO KOTHE MOKO?
2. OTIENO NOWACHI NI CHIEGE, "MAD NE BEDI NI PUOTHEWA DUTO MATINDOGI OBEDONWA E PUODHO ACHIEL MADUONG'. BANG'E WANYALO LOSO PUOTHEWA MABER. BENDE OK ONEGO WAYUDI CHANDRUOK MAR DHI KA GI KACHA, KA WADHI LOSO PUOTHEWA."

3. KAMANO OTIENO GI CHIEGE NE JOKUNYO BUR MORO. NE GIYIEYO TIANG ODUMA GI BEL EI BURNI. NE GIYIEYO LUMBE DUTO EI BURNI. NE GIKETO GIMORO AMORA MANYALO TOP EI BURNI. NE GIYIEYO CHIETH GWEN EI BURNI KENDO NE GIKETO YUGI DUTO MANE GIYWEYO E KUND DHOK EI BURNI.
4. KOTHE MAN E KOR ODUMA GIN KOTHE MABEYO. KOR ODUMA EMA OTING'O KOTHE MABEYO. KIK IKONYRI GI ODUMA MARACHICH RACHICH. KONYRI KOD KIT ODUMA ACHIEL. KONYRI MANA KOD KOTH ODUMA MA OK MARACHICH RACHICH.
5. CHI OTIENO NOWACHO, "OK WABI KONYORE KOD KOTHE MARICHO. OK WAABI KONYORE GI KOTHE MARACHICH RACHICH. OK WABI KONYORE GI KOTHE MAN KA PIER ODUMA KATA MAN KA WI ODUMA GI MALO. WABIRO KONYORE MANA GI KOTHE MAN E KOR ODUMA."

READING TEST
GIGIKUYU

1. NINGI NI HARI MITHEMBA YA MITI INGI IKURAGA TIRI-INI YARIKIA KUHANDWO NI ANDU, NAYO NIYO ICOKAGA GUCIARA IRIO IRIA TURIAGA. IMWE CIENJANGWO MIRI, TA NGWACI CIA GIKUYU, NA IRIA INGI IGATUO, TA MATUNDA, O NA IRIA INGI IGATUO MICIRI TA MBOCO, NINGI IMWE IGATUO NYENI CIA GUKIMA IRIO, TA IRENGE. NINGI NI HARI TUMITI TUMWE TWA KWIMERIA TUTUAGWO NYENI NJEGA MUNO TA TERERE.
2. ANDU A TENE NI METIKAGIA ATI MUNGIGWATANIA NDAI MUTHENYA MBURI CIAO NO IRIO NI HITI KANA NGARI. TUHII NA TUIRITU TWA TENE NITWAMENYEREIRE UHORO UCIO MUNO NA TUTIAGWATANAGIA NDAI MUTHENYA, TWETAGIRIRA KINYA HWAIINI UKINYE. RIU ANDU NIMARIKITIE KUMENYA ATI KUGWATANIA NDAI MUTHENYA GUTINGITUMAMONE MUTINO O NA ATIA.
3. WITHAMBAGE MWIRI WEGA O HINGO, O NA UGATHAMBIA NGUO CIAKU, AMU GIKO NIKIREHAGA MIRIMU. NINGI URENGAGE NDWARA CIAKU CIA MOKO O NA CIA MAGURU, NIGUO GIKO GITIGE GWITHINGIRIRA GATAGATI-INI. GIKOTI KIEGA, NIKIO NYINA WA MIRIMU.
4. IGACWA IHEANAGWO NI MUNDU URIA WARIGWO NI GUCOKIA, NI GETHA OIMBURIRUO, NO MUNDU NDANGIUMBURIRUO ATANETIKIRA KUHEANA KIGACHWA, NAKIO NIKIO INDO CIA GITONGA KIRIA KINENE, TA MBURI NA NG'OMBE, NI GETHA AGOOCWO. TENE MUNDU ANGIHOOTWO MUNO, AAGAACAGWO NA AGAIKIO NA HAU MUTONDO-INI.

WRITING TEST
GIGIKUYU

1. TENE NDAI ITIAGWATANAGIO MUTHENYA, CIAGWATANAGIO HWAIINI RIRIA ANDU MAARIKIA KURIA IRIO, KANA RIRIA TWANA TUIKARITE THI TWETEREIRE IRIO IHIE TURIE, NIGUO TUGAKOME.
2. KUU WANG'OMBE AARIITHAGIA KWARI GUKUHI NA KWA UKABI, ONARIMWE NIACEMANAGIA NAO NJIRA-INI MAKIHITUKA. NIERUTIRE RUTHIOMI RUAO NA KIYO, NI GETHA AHOTAGE KUIGUA URIA MEKUUGA O NA AMAARAGIRIE.
3. ITHAMBAGE MAITHO RUCINI WOKIRA, NI GETHA UTHENGIE MBICO NGI ITIGE GUGUTAMBA, ITIGAKUREHERE MURIMU WA MAITHO. RUTA TWANA TWANYU TURIA TUNGI NATUO TWITHAMBAGE.
4. KIINYAGA MAGEGO MAKU O HINGO CIOTHE RUCINI WOKIRA NA HWAI-INI UGITHII GUKOMA, NI GETHA UTHENGIE TUIRIO TURIA TUOTHE TWIHATIRITE MAGEGO-INI, AMU NITUTUMAGA MAGEGO MATHUKE NARUA NA MAGUNDE.
5. NGI NI TUNYAMU TUURU MUNO. NITUREHAGE MIRIMU MIURU. MENYERERA TIGE GUTAMBA IRIO-INI CIAKU. IRA NYUKWA AIGAGE IRIO CIANYU WEGA HANDU HATARI NGI.
6. WIMENYERERE NDUTU ICIO WI NACIO, NIIGUGUTHUKIA MAGURU. TA RORA URIA MAGURU MACIO MOGOMETE. CIRUTE RIU KANA MYUKWA AKURUTE WAINUKA.

READING TEST
KIKAMBA

1. YILA ISAU YOONIE MWATU ASOMOLA UVYU NDOONI YAMANYA NIYAKW'A, YAMUTHAITHA MWATU YIIMWIA, AME MWA, NDUKAMBUAE, NDEKEA. NYIE NDIKUKAA MUUNDANI WAKU NI VATA WA KUYA LIU WAKU, INDI NIATIIANIE NA MANG'AA AA NIEEYE NGEWA NAMO NA NDYISA KUVINDUKA NEEYITHIA KITEINI NTHINI. NDI NA MUAMBA NAMO NONGI UNG'EINI WOO.'
2. SYUA YAMWIA, KILYA WE! NDIKWENDA KWIW'A KILOMO KYU WI NAKYO. NA SYUA YAVULYA MUTHI YIKUNE MWEI NAW'O, MWEI YILA WOONIE NUUKUNWA WASEMBA UKIITE VAMWE NA SYANA SYAW'O. NOIKIITE SYUA, NAYO SYUA NOYIUATIIE.

3. MUNYAMBU NA MBUKU NA NZAI NISYAENDIE KUSYIMA. YILA SYALIKILE NZYIMANI NISYOOAIE IVOVI NA INDI SYEKALA NTHI ITHUMUE. SYAMINA KUTHUKUA MUNYAMBU WEEA NZAI, 'UKILA UTUAAN'YE MASYIMO MAITU.' NZAI YEETIKILA NA UTANU. YOOKILA YAAAN'YA IANDA ITATU SYIANA O TAMO SYOTHE SYIANENE. NZAI YEEA MUNYAMBU 'UKILA WOSE KIANDA KIMWE KILA KIKWENDEESYA.'
4. NIVO INDI MWATU AMINA KUYITAVYA NDETO ISU AUMYA YILA ISAU KITEINI AYING'EA NA AATIISYA MANG'AA NAMO NA AMINUKIULYA WIA WAKE WA KUAA NA NGUNGUU. ISAU YAKW'A NUNDU WA KWITHONGA MWIMBISINI UTE WA KI KWOO. MWATU OOSA YILA ISAU ATHI KUSEUVIWA MBOKA.

WRITING TEST
KIKAMBA

1. TENE MUNO SYUA NA MWEI SYATUAA VAMWE KUUYA YAYAYANI. SYUA NIYO YAI MUTUMUA WA MWEI, NAW'O MWEI WAI MUKA WA SYUA. ME ELI MAI NA SYANA SYOO, NASYO SYAI NYINGI MUNO NA SYEETAWA NDATA.
2. YILA WAVIKIE EETHIIE UKWATITYE NGUNGUU, MANG'AA NA ISAU YIMWE. NAKE ASUANIA KUSYUAA SYONTHE NUNDU WA WASYO ULA SYAMUNENGETE IKYANANGA MBEMBA SYAKE.
3. MWATU AYISUNGIA, 'NDETO SYAKU NI SYA W'O VYU, MUNYANYAWA. INDI NUNDU NAKWITHIANISYA NA ING'EI, NO MUVAKA KYONTHE KILA MEKWOSA NAKU WOSE O KYO.
4. VAKUVI NA MUSYI WAKE VAI KITHEKA KITHUNGU NA KITHEKANI KYU VATUAA NTHEE ILA YEKALAA IKYUKAA KUYA MASWII MA NGUKU SYAKE MAVINDA KWA MAVINDA. KWOU NIYAMUNENGETE WASYO MUNENE.
5. NA MUTHENYA UMWE SYUA NIYATETANISYE NA MUKA, NUNDU AMWIE', SYANA II SITU NI MOSU MUNO NUNDU WA NZAA. NIKI UTATONYA KWIMANTHIA LIU MWINGI WA KWIVUN'YA? UU TI USEO.
6. MUSYIMI WA NDOLO AI MUIMI MUNENE WA KATHEKA-KAI. NIWENDETE KUITHYA NGUKU MUNO NI KANA IMULEKELASYE MATUMBI NA AKITHINZAA KWOONDU WA KITWEE KYAKE KYA KILA MUTHENYA.

READING TEST
KIMERU

1. NANDI NI IGIITA RIA RUUTHA. KAARIA NA KARIMI BARI NJA BATI CUKURU. NGI'NA WA KAARIA NA KARIMI ATI NJA, NI ETIRE GUTAA RUUJI. KAARIA NA KARIMI NIBO BARI NJA NA MWANA.
2. MWANA ARI MUGEKENE. KAARIA NA KARIMI BARI NA ITINDA RIAO RIA KUTHUNGUTHA, NA KUGERA KAIGA. TWANA TUTWINGI NITWENDETE ITINDA RIRI RIA KUTHUNGUTHA BAKIGERAGA TUIGA TUNYOMBENE.
3. NI BANG'ANA BOMBA KUTHITHIA ITINDA RIRI? NI ITINDA RI-RIEGA? MWANA URI NUNGU OMBA KUTHUNGUTHA? KAARIA NA KARIMI BAGWIRITUE MONO BAKIUTHA. MWANA WAO KINYA WE NAKWENDA KUUTHA.
4. AKUMA MUGEKENE ETA KIRI KARIMI. NANDI NI IGIITA RIA KUUTHA. KARIMI ATTIKWENDA MWANA ETA KIUTHINE. MWANA ATIGWITA NA MAGURU TONTU ATIKINYITIE IGIITA RIA GWITA.
5. AKUA NA NTHI KUUMA MUGEKENE MWANKA KIUTHINE. KAARIA NAMUTEGETE ATIKAJUKIE KAIGA. GUTI MUNTU WENDAGA KURITWA ITINDENE RIAWE. AKEJA KUKINYITHIA KUGURU NTHIGURU AGUTA KAANYA KAWA IGIITA RIU.

WRITING TEST
KIMERU

1. KAARIA AKWONA MWANA AKABATHUKIRIA KIUTHI. AKUMUJUKIA AMUCOKIA MUGEKENE KENDA BOMBA GWITA MBERE NA KIUTHI. NO MWANKA ETEERE KAARIA ACOKE.
2. NAKUNONGA MONO TONTU ATIUMBA GUKINYITHIA KUGURU NTHI. MWANA AKUTHITHIA BUUI MONO. "IJANGA KAARIA, MWIKE NTHI, NI NKUNOGA MONO.
3. AARIA AKUTHIRIA GWIKA MWANA MUGEKENE. AGUCOKA KIRI KARIMI KENDA BETA MBERE NA KIUTHI.
4. ATIRAKINYITHIA KUGURU NTHI. AKEJA KUTHUKIA NIRIO KAARIA NAWA OOTHA. MWANA NI ABATEGETE INDI ATIRAUMA MUGEKENE.
5. KAARIA ATIKWENDA MWANA EJA KUUMA MUGEKENE RIRIA AKAMBIIRIA KUUTHA. AGWITA NYOMBA EJA NA MUBIRA, NA ANENKERA MWANA.

READING TEST
LUYIA

1. WABUKO ASHIILI KHUMUSAALA. ECHESA ALANGA WABUKO. ITSA KHUPE OMUPIRA. KUNO NOMUPIRA KWANJE. WABUKO YIKHA KHUPE OMUPIRA. LOLA OMUPIRA KWANJE. YIKHA BWANGU KHUPE OMUPIRA.
2. WABUKO ARENJEKHA OMUPIRA HASI. BULANO AMWENYA. WABUKO AHENGA ECHESA. ECHESA YESI ASANGAALILE. WABUKO ASUMIA OMUPIRA. AKUSUMILIE MUMAKULUKE. OMUPIRA KULI MUMAKULU KA WABUKO. YAMANYA OKHUSUMIA OMUPIRA.
3. ECHESA ABOOLELA WABUKO. KHUPA OMUPIRA BWANGU. WABUKO AKHUPILE HEKULU BULANA AKHUPA OMUPIRA PU!, HENGA HEKULU. OMUPIRA KULI HEKULU. WABUKO AKHUPILE OMUPIRA. AKHUUPILE HEKULU. OMUPIRA KWA EHESA KULI HEKULU.
4. ECHESA ARUUMA HEKULU. YEENYA OKHUPA OMUPIRA. WABUKO AKHUPILE OMUPIRA HEKULU. ECHESA ARUUMA HEKULU. YEENYA OKHUPA OMUPIRA. ECHESA AKHUPA AKUKHUPA NOMURWE. ECHESA AKHUPA OMUPIRA NOMURWE. WABUKO AKUUPILE NESHILENJE.
5. ECHESA ASANGAALILE. AKHUPILE OMUPIRA HEKULU. AKHUPILE NOMURWE. BULANO ASAANGALILE. WABUKO ARUUMA HEKULU. ATEEMA OKHUTIILA OMUPIRA. ECHESA AKHUPILE NOMURWE. WABUKO ATEEMA OKHUTIILA. EE! WABUKO AKWILE. ECHESA AKHUPILE OMUPIRAKWE HEKULU.

WRITING TEST
LUYIA

1. NANJILA YEKOMBANGA INYONGESA OKHUULA BWANGU. INYANGA EYO NEYAYAKHOLERANGA MWO EMILIMO CHICHIE, EMIBAYO NENDE AMAHAKA KOSI. INYANGA EYO SHIYABUKHANGA MUMABWEBWE TA.
2. KHO WAMBALE YATSILILILA OKHUBAYA YENYENE. NAYE NANJILA YAHWAHO NAKHUNIYE HAMONI. YAHENGA TSING'OMBETSIE NO OLUNYUMA YABWANA OMULILO NACHAKA OKHUSAMBA AMAPWONI KEKE.
3. ABASIANI ABO BELUKHA NIBALONDAKHWO NAYO POPI YELUKHA BWANGU IMBELI WABWE. POPI YATIILA ESHITUYU TSANA MANA ABASIANI ABO NEBEETSA NIBASHISAMBA.
4. ECHESA AKHUPI OMUPIRA. AKHUPI OMUPIRA PU! AKHUPI OMUPIRA NAMAKULU. AKHUPI OMUPIRA HEKULU. HENGA KULI HEKULU.
5. ECHESA AKHUPILE OMUPIRA HEKULU. ABAANA BAHENGA OMUPIRA. LOLA WABUKO. YEENYA OKHUSUMIA OMUPIRA. YEENYA OKHUSUMILIA MUBILENJE. YAMANYA OKHUSUMIA.

READING TEST
EKEGUSII

1. CHINGOKO CHIABO KERUBO NIGO CHIKOBIARA AMAGENA BOTAMBE. KERA RITUKO KERUBO NA NG'INA NIGO BAGOSANGERERIA AMAGENA AMANGE. KERUBO ARUSIA AMAGENA ASE EBISERA, OYABEKA ESANI IGORO. AGOICHORA ESANI, OA NG'INA OYABEKA EGEKABU IME. NG'INA NIGO AKOYACHOKA EGEKABU IME BUYA BUYA, NARIO ATATEKE.
2. RITUKO ERIMO, KERUBO NA NG'INE BAKAGENDA EGETICHA KIABO GOTWA EKABICHI NE CHINYANYA BACHIE KOGORIGWA. KERUBO AGATWA CHINYANYA AGACHORA CHINTOBU CHIOKA. NG'INA ERE AGATWA EKABICHI. ASE ENGECHO YARENGE ENKONG'U, NIGO ABWATE OMOYIO ARENGE KOYETWERA.
3. NG'INE AKABARA CHIBESA CHINTIGARI AKANYORA NCHISANE CHIRATA. BAKAGENDA ETUKA Y'EBILOROTO. BAGASABA CHIRATA CHIRAISANE KERUBO. OMONYENE ETUKA AKARETA CHIRATA AKAA KERUBO ERENGIE GOSE NCHIMOISANE. KERUBO AGAIKARANSI, ERINDE AKARENGIA. AKANYORA NCHIMOISANE. BAGACHIGORA BAKAIRA.
4. KERUBO NA NG'INA BAKAIRA CHINYANYA NE CHIKABICHI CHIABO ETUKA Y'OKIOMA NIGO ANCHETE KOGORA CHINYENI AO AO KORWA ASE ABAREMI. NONYA N'AMAGENA NE CHING'ENDE NABO AKOGORA, OCHA KOONIA.
5. OKIOMA AGAPIMA CHIKABICHI NE CHINYANYA CHIABO KERUBO, ERINDE AKABAA CHIBESA. NG'INA KERUBO AKAGOOKA MONO KOGORIGWA EBINTO EBIO. AGAAKERA OKIOMA BUYA MONO. KORENDE NAENDE OKIOMA AKAMOTOMA ACHIE KOMORETERA CHINYANYA CHINDE ASE OBWANGO.

WRITING TEST
EKEGUSII

1. KERUBO NANCHETE GOSANGERERIA AMAGENA YE CHINGOKO CHIABO NA KEGIMA AY'ENGOKO ERIA ANCHETE MONO. CHINGOKO GA CHIGOTETE, NARIO CHIKOBIARA AMAGENA AMANGE.
2. NG'INA KERUBO NATUGETE CHINGOKO CHINYINGE. NIGO CHIERE N'EBIENI AO AO. ECHINDE CHINDABU, NE'ECHINDE CHIMBARIRI. ECHINDE CHIMWAMU, N'CHINDE CHINKANGA.
3. KERUBO ERE AGATIGARA OGOSIBIA OROTUBA CHINGOKO CHIKONWERA AMACHE. AGASIBIA OROTUBA ROKARABA, ERINDE AKAUMORA AMACHE AMAYA IME. AYA NARO CHINGOKO CHIABO CHIANCHETE KONYWA GO CHIARAN'IRE.

4. ENGAKI EYIO, KERUBO NIGO ARENGE GOITORORERA EKABICHI AMACHE MAMBIA BOTAMBE. MOSUKO NABO KERUBO ARE KORANGERIA EMBURA, "MBURA GAATWE! MBURA GAATWE! NKONYENYERE RIKONGO RI'ENYANG'AAU!" KORENDE TEGOTWA.
5. AKAMINYOKA AGATEEBIA NG'INA NG'A ENGOKO YAYE ANCHETE TERI ASE ECHINDE. NG'INA AGAICHANA MONO KOIGWA IGO. ENGOKO EYIO EMBARIRI NERO YOKA ENORU ABWATE. IGO TATAGETE ESIRE BOSA.

READING TEST
IGIKURIA

1. GESAABO NA ROOBI BAKARERRA OMOONA. KUGIRA NAARE GUUCHA KOKA-SARRIA OMOHOORO GOOBO. GESAABO AKAIMUKIA OMOONA AKAMURIINGIA KUYA KOGESEERO KEE HAARA. ROOBI NKANYOORA AHIKERE GATAEGATAE YIO OMOHOORO.
2. HANO AGATACHERE HAANSE NAAGAS-ARRI ORRENGO ROOE. OKOGORO NAANYORRE GOTAANGERE GUKUA SIBOONO NAAGUMIRRIYI AKAGANYA GESAABO AKRIINGA KURUA GUIKARIA OMOONA KOGESEERO KEE. OMOONA TAAKAGOMERE HAARA HAI.
3. GESAABO NAAMANYERE IGA NAAGAIKARIA OMOONA KOGESEERO NAKAARIINGERE GUUCHA KOBASARRIA OMOHOORO GOOBO. BAGATUNA NA ROOBI ESEEMI. KOOHAYO IGO GESAABO KARAGIRRIA ROOBI IGA HANO BATTAHAAYE OMOONA EGEENTO GE KOHOYERA, NARARIINGE GUUCHA KOBASARRIA OMOHOORO GOOBO.
4. KU GIRA GESAABO NAAMANYERE IGA HANO OMOONA ARATEME UMUBIIRA GOORA HAANSE NGORAIBURRUKE GUYI AAHARAE. NO OMOONA TARAACHE AMANYE KOGOSOORA HAI. OMOOE WABO ROBI GOSE GESAABO NEWE ARAACHE AYI KOGOSOORA AREENTERE OMOONA.
5. HANO BASOOKIRI KOHA OMOONA UMUBIIRA ROOBI NA GESAABO BAKARIINGA KUYA KO MOHOORO GOOBO. KUGIRA OMOONA NAARE KOHOYA NU UMUBIIRA GOORA AKIEEEE KOBAIRIRIA. NAAGOHANCHERE NA AKAIGOOKERA NAGO BOKONG'U.

WRITING TEST
IGIKURIA

1. RONO NURUSIKO ROOMBERE ROOKUMUUNYA ROORE. KUGIRA NAANYOORRE SUKUURU YIASIIKOA. ROOBI NA GESAABO TEBAGEEYE SUKUURU HAI. MBAAHAYOE OROGOSA RUI ICHIWIIKI INYAI.
2. INKIO EYO ROOBI NA GESAABO MBATEGEEYOE OMOONA HANO NANYORRE NYAKOWAABO AGEEYA AMAANCHE GESAKA. MBAREENGE KOHOYA OMOHOORO GONOGOKOBEREKEROA IGA MUTI.

3. ETEGERIO ENENE HARE BO NIIGA MBARE KUIGUERANA BO ABIENI TEMOONTO AREGUUCHA KOBABOKANIA KO MOHOORO GOOBO HAI.
4. ROBI NA GESAABO NAANYORRE BIEBEREOMOONA KUGIRA NKANYOORA OMOHOORO GOBO GORA GOBATEGEYI BOKONG'U. OMOONA NAWA NATUNERE KOHOYA.
5. NAANYORRE TARAGEENDA HAI. KUGIRA EYO TAKAMANYERE KOHOYA OMOHOORO GO KUIBURRUKA BURRUKA HAI. NINYOORA NIIGO NAIGGOOMBERE IGA AHOYE BOKONG'U.

READING TEST
KIDAWIDA

1. WANDU KUFUMA KALA WEREKOGA WIKILIMA MBUWA RAWO RIWITESIE KWA VINDO VEJA NA VIZIMA VIKASIGARIKA VIUZO. KWA HUWO MEMWALE OREKOGA MKA WA WUYA MUNGI, ORELIMIEGE MBUWA YEMTESIA KWA VINDO.
2. NYUMBA YAWO YEREKOGA NA WUMWERI, KWA HUWO NDEREKUNDEGE KUBONYA GARAMA INGI YEWIKA WAANDU WELIMA, UKAMANYA WORI NGELO ROSE WAANA NA NDEE WAPATA WULALO WEREKUNDEGE KUMTESIA KAZI RA MBUWENYI.
3. MBORI NA MWALE NDEREKUNDEGE SUKULU ITUKU JA KIFULANGUWO NA JA NJUMWA. ITUKU JA KIFULANGUWO WEREKOGA JEONGOSHA NA KUGORUA NGUWO, NA JA NJUMWA NI JEGENDA NJUMONYI ANGU SANDE.
4. KIFULANGUWO CHIMU MWALE NA MBORI WEROGOSHEREGE NGUWO RAWO NA KESHO KIO ERI WIGENDANYE NA MAE MBUWENYI. MAE OREKOGA WALIMA TOE NA VUA YANYEE NI NGELO YEWA VIRO.
5. WIENDABUSA MBUWENYI, MWALE NA MBORI WEDEWADA KAZI YEKWANYA PEMBA KITUNGU KITUNGU, MAE NA NDEE NAWO WAKADAKONYORUA PEMBA. AHOE NI WIKAKORA MODO GOOCHA MBEU UJI WASILWA. WIENDASILWA NI NDIGI WERECHEREGE MBEU NA RIMU WIKAGENJERA WAWI WAWO.

WRITING TEST
KIDAWIDA

1. MEMWALE OREKOGA MKA WA MAENDELEO, KWA HUWO OREDUNGIEGE SARU MBUWENYI KWAKE. MBUWA EREKOGA YALIMWA MATUKU MALAZI IKASIA NDIGI PUTU.
2. NIKO NDEMWALE NA WANA WAKE WIKAGORA WIENDEMTESIA MEMWALE KUALIA MIWALWA YAWO. NDEMWALE OREMANIYIREGE IJI WAPATA VINDO KUFUMA MBUWENYI, PESA ROSE RADAKIA.

3. MIWALWA YOSE YEREWALOGÉ YEREENDELIEGE NICHÀ HATA PEMBA RIKAFUNYA VILERI, ELA SAWAU NARO REREMANYIREGE. KWA HUWO EREKOGÉ SUTI MBUWA IWOKE KULIDILWA.
4. ITUKU JIMU OREKUNDEGE UENDEMZIGANA MAE. NIKO UKAWIZERA MBORI NA MWALE WIENDELINDIA. WIENDABUSA MBUWENYI, MWALE UKABONYA IGARE JA MUDI.
5. SAWAU RACHENGIA, RIKAJA, NGELO RIWOKIE KUSEKA SHWA WORD MBORI UKASIKIRA. NGELO WERERIWINGIGA WEREMANYIREGE ANGU WIRASHWA NI MAE, KWA HUWO WIKABONYA MAZUGE IJI UHU USARIGAGA UHU NAO UALINDIA MBUWA.

READING TEST
MAASAI

1. EATA NGOTO LASOI ILUKUNKUNI KUMOK NAAPAASHA IMUAIN. ETII INAIBOR O NAAROOK OMBARRIKON. ENYOR ENTASAT ELUKUNKU NAIBOR NENYOR LASOI EMBARRIKOI NAPIR. EIU ENAIBOR ILMOSOR KUTITI OIBOR, NEIU EMBARRIKOI ISAPUKI SIRUAI.
2. NEYA ENTASAT ILMOSOR POOKI AGEL TIAJI. NEINGUAA LASOI TOLALE METUBUKOKI ENKARE NASILA EMPEUT OO LUKUNKUNI. EYA NEIBUKOO OSORDO ETON EITU EPIK ENKARE NASILA. NEINGOR ILUKUNKUNI EOKITO ENKARE. NEIKEN SII. ENYOR TENEDOL EYIET ILGOSO EIJOO ENKARE.
3. EATA PEYIE EITERU AANYA ENDAA. NEITISHIP MENYE ENKILA NGEJUK NAISHOPITO LASOI. NEJOKI MEITASHO PEYIE ETUMOKI ATISIPU. NEITASHE LASOI. NELIKI PAPAAI LENYE AJO EATA SIIINAMUKA NGEJUKO NAINYIANGAKA NGOTONYE.
4. IMEINYIANGU AIKATA NGOTO LASOI IMBENEK NAINOSI KEUNOKI KEON TEMUKUNTA ENYE. ORE TENESHA NEITUBULU ENCHAN. EYA NEBUKOKI ENTULUGUMI OONKISHU NEYA NEBUKOKI ENOONKISHU. ENTULUGUMI OO LUKUNKUNI TAATA EGIRA ABUKOKI. ETUR NINYE NEBUKOKI LASOI.
5. NEIPOSHA LASOI AINGORU TE POOKI WUEJI. NELAU. NELO ANG ETANAURE. NEIDETIDETU INA KEWARIE ETII ELUKUNKU INELATIA ENYE. ORE PEYIE EKENYU, NEMAN ELATIA ENYE POOKI AINGORU. NEMEYIEU NGOTONYE NEIPIRRAAR LASOI.

WRITING TEST
MAASAI

1. TENEIDIP LASOI O NGOTONYE AITOTIO ILUKUNKUNI, NESOTU ILMOSOR. EPIK NGOTONYE ENKIKAPU, NEPIK LASOI ESAANI. EUTAA LASOI NGOTONYE MEINGURA OLENG ILMOSOR PEYIE MEDANYA.

2. IMELAU AIKATA NGOTO LASOI INKAITUBULU NAANYAE TIARI O TIAMEYU. ORE ETAA EMUTA KULIE, EKESI KULIE. ENOTO INKAITUBULU KUMOK OLENG TELE ARI.
3. ORE PEYIE EYIOLOU LASOI EIMINA ELUKUNKU NANYOR, NEKUET ALO ALIKI NGOTONYE. NERIKINO EIKEN OLALE LOO LIKUNKUNI.
4. NEINGASIA NGOTONYE PEYIE EINEPU ILUKUNKUNI TO BOO NEISIU OLALE. NEIKILIKUAN LAOI AJO KAINYIOO PEYIE ETUNGAYIE OLALE MEIKENO. NEJOKI LASOI EKATORIKINE.
5. NELO LASOI AMANAA AIKILIKUAN ILTUNGANA TENAA KETII OLOTADUAAA ELUKUNKU BARRIKOI. NEJOKI ENKAYIONI TENKAJI NABO EBAIKI NAA ISUAYIAN OINOSO TENTIM. EYIEU EISHIR LASOI PEYEI EJOKINI NEIJIA.

READING TEST
KALENJIN

1. KIYETAR KONDENI PETEROL BOIYOT, KOTOI KOKWERI MOTAKAIT ENG'ORET NE WENDI GA. KIMAILISIEK TAMANWOGIK TISAP AK SOMOK KONG'ETE SUKUL AGOI GA. KARARAN ORET NE WENDI AGOI OLIN BO AGOT JEPKOECH.
2. KIYEIT DUGET ORIT KIPROTICH AK JEPKOECH KOGER SWITTISIEK CHE CHANG MISING'. KITOMO KOGEREI ICHEGET SWITISIO CHE TENO CHO! KIMI SWITISIEK ICHEGEI DUKANATA. CHANG'LAGOK CHE ALISIEN DUKANATA AMU CHAMEI ICHEGET SWIT.
3. KIYE WEEK KWANDAB AGOT KIPROTICH YE MI MOTAKAIT KONYUR LAGOK KOMI SANG'. KIMA KOKAIBAI INENDET AMU KIBENDAT LAGOKYIK AK KOMETO MOTAKAIT KOYATAT. KITEPE KWANDA LAGUCHOTO KOLENJI"OBUNU ANO?
4. KICHANG' MOTAKAISIEK CHE KIBUNEI ORET AMU KI SAIT TAMAN. SAIT TAMAN KO SAIT NE MANG'U BIK ENG'BOISIOSIEK KOBENDI GA. KIMI POLISIOT ORET KWEN. BOISIETAB POLISIOT KORIP MOTAKAISIEK ASI KOMARUSGEI.
5. KILABAT KIPRUTO IP KOTOROCH KWANDANYI AK TUPCHOSIEKYIK CHE KIMI MOTAKAIT ORIT. KIMETO KIPRUTO KAMENYI KOTTELELI ANG'KURGAT. KILABAT INENDET AGOI KOCHUT MOTAKAIT ORIT AK KOTOROCH KWANDANYI ENG'BOIBOIYET NE O.

WRITING TEST
KALENJIN

1. KISOMANEN KIPROITICH AK JEPKOECH SUGULIT AGENCE. KIGUREN SUGULITNOTO BURGEI. SUKULINOTO KOSOMANEN LAGOKAB BORORYOSIEK CHE TER AK CHE TER.

2. KIYEKAGOBA LAGOCHOTO AK KWANDANYUA KOGER MULANGOIT KONETINDET. KIWO ANYUN KWANDAB AGO KIPROTICH IP KOYAT MOTAKAIT LET. KIINDENA INENDET SANDUGUSIEK ORIT AK KOGER.
3. KIYEMI OPIS ORIT BOIYOT, KOBASNAG' LAGOK ENG' MOTAKAIT. KIBASANG' NGAP KIGEER ICHEGET SWITISIEK CHE KIMI TUGET ORIT.
4. KIYE KAGOKONOR MOTAKAINYI BOIYOT KOMONG' SANG' LAGOK AK KORWAI IP KOTOROCH KAMENYUA. KIBAIBAIT MISING' CHEPYOSET YE KIN KOGEER LAGOKYIK KOGENY.
5. KIKIGOCHI BOISIET JEPKOECH AKINE BETUNOTO. BOISIET NE KIKIGOCHI INENDET KO KOBUCH GORIK ORIT AK SANG'. KITO ANYUN JEPKOECH BOISIENYI ENG' CHOKCHINET.

READING TEST
LULOOGOLI

1. IMALI NOMWANA MUGOOSI KANDI MULAHI MMIMA JIJE. KIGIRA YAGA, MAMA WEWE YAMUYANZA MUNO. AMUKONYAA KOVUTSITSA TSINGOKO TSIAAYATUGA. VULI HAMUGOLOVA IMALI HALALA NA MAMA WEWE VATSIVOTSITSANGA. IMALI YAYAANZA KUTSIHA OVOLO NA MAMA TSIJENGA NAMADUMA.
2. TSINGOKO YITSI TSILINDANGWA VULAHIMUNO. KIGIRALILINDWALILAHI TSITELAA MAVUYU VULI LIDIKU. LWA IMALI NAMAMAVAMALANGA KUTSIVOTSITSA NOKUTSIHAMATSI, VAMANYA VADOOLAMAVUYU GOSI GATSIVETSA NITSITELEYE. IMALI YAYAANZAKUVUNGITSA MIVUYU MINENENE NAMAMATUVUYU TOKEKEKE.
3. INYINGI YINU NIYIMBULA INYINGI. TSINGITSA LUGANO NALUGANO TSIVEEYE MMULIMI. MAMA ATEMAA MAKABICHI NAGAVIIKA MUKIKABO. YENYAA KUTSIA KUDEKELA AVAANA VEVE. KANDI YENYAA KUTSIAKUGULITSA MALALA KUGO. AVANDU VAYAANZA KULIA MAKABICHI MUNO.
4. INYUMBA YATSIMENYI MU YIYI EVETSANGA NAMADOME MANYINGI. VULI MULYENGESA IMALI YEEYA MADOME GOSI KANDI YOGITSA MU. MODOME YAGA HALALA NINDAGALA YINDI YOSI AGIVUNGITSAA HALALAKUGWA ISINA. IMALI YAMANYA NDI ISIINA NINDAHI KUTAAGILAVITAGWA.
5. MAMA WAHI MAKABICHI KIKABO DU, NAMALINAYE KANDI WAGUUYI TSINYANYA KIAKABO DU. KALUNU VAGENDAA VAGWANGU. VATSITSANGA KUGULITSA VINDU YIVI MULIDUUKA. VENYANGA AMAPESA GOKUGULA TSINGUVU, TSISAVUNI NESUKARI.

WRITING TEST
LULOGOLI

1. IMALI NA MAMA WEWE NAVAYINZILI VAGULU. VATAAGA VITAGWA LUGANO NA LUGANO MMULIMI GWAVO. NAVUTSWA VAYAANZA KUTAAGA TSIGUTSA TSINYINGI. YITSI TSIVAHETSAA AMAPESA MANYINGI. KANDI NICHOKOLIA KILAHU.
2. KALUNU MAMA NA IMALI VATAAGAA TSINGUTSA. MAMA ALIMANGA MALIINA NA IMALI NAAVIKAMU ISIINA. VATAAGA TSIKABICHI NE TSIMBINDI. KANDI VAYAANZA KUTAAGA TSIKARATI NA MABWONI GEKISUNGU.
3. MUNDU WATAAGA TSINGUTSA LUGANO NA LUGANO ANYALA KUGULITSA AMAPESA MANYINGI. KANDI AVETSANGA MUNIFU KIGIRA ALITSAA TSINGUTSA. GAKUDUKILA KWINYE KWOSI KUTAGE TSINGUTSA VULI MUNDU MULALA SIAMULALA.
4. IMALI YAAGULA TSINYANYA. TSINYINGI KUTSYO TSYENGI TSIMUGIHI PA. YAAGULA NATSIVIKA MUKIKABO. TSINYANYA NETSINDAHI KULIA KANDI KODEKELA. NIVAANGA KUMWINYE AVATAAGA TSINYANYA?
5. INDALA KUTSINGOKO YITSI YAALI NEGOTI. YAALI ENGOKO INZAKANYU. VOMBI VATANGA KOGENYA WAYAALI NITSIYI. VALANGILILA TSINGOKO TSYOSI NIVAVALITSA NAVUTSWA SIVAGELOLA DAVE. VATANGA KWENYA.

READING TESTS
LUBUKUSU

1. CHINYUNI CHILIMO CHINGANO CHINGALI. CHINDALA CHILI CHIMBOOFU NE CHICHINDI CHILI CHINDITI PO. LUNDI CHILI NE KAMAKONDO LUKANO NA LUKANO. CHINDALA CHIMBESEMU, CHICHINDI CHISASAKE, CHICHINDI CHIMALI, CHICHINDI CHIWANGA CHWE. NE CHICHINDI CHILI NE KIMITINDI. CHINYUNI CHICHIAMALIA TITITI KHUKHILA CHIOSI CHILI HUTUTU NE KHOORO.
2. AKHABA LUNO KHULISOMA KHURIO, NE LUNDI KHURUMIKHILA CHISA KHUNYALA KHULOMA KHULI, SAMOCHA, SAMBILI, SATATU, SAINI, SATANO NAMWE SAKUMI NAMBILI. NE KHUKHANA KHUMANYA KHURI CHIISA CHILI CHINGA NE KHULOLA KHUSA KAMAHANDIKO KALI KHUSA KAKEKESIA CHISA. LUNDI CHILIKHO CHISAALA CHIBILI CHIKENDA NE CHIBOTOKHELELA.
3. KAMEECHI KEMUSONGO MUNJU KAKHOYELE KAFUNIKHWA ENYANGA NEKWILE KAMATIRISIA KENJU KAKHOYA KEKALWA BULI EKOLOOBA. KHUFUA MUNJU NE KAMALESI KALANGWA TITITI. KAMALESI MENAACA KEERA BING'ENG'E, CHISUSI, NE CHISI. BING'ENG'E NE BING'UNYA MUNJU ABA MBAAKHUFUAMO TAWA.

4. LULALA LULI LULEEYI LULUNDI LULI LULWIMBI, LULEEYI LUKENDA BWANGU KHUKHILA LULWIMBI MALA LWEKESIA CHISA. LULEEYI NE LULI MU KUMI NAMBILI NE LULWIMBI NE LULI MU SABA ABA ELI SAMOCHA YE MUSILO NAMWE YE KUMUUSI. KHUSA CHINAMBA CHILIKHO KHUKHWAMA NDALA KHUKHWOLA KUUMI NAMBILI.
5. NOMALILE KHUCHISINGA OCHIANIKHILA CHIOMA. NECHILIME SOKHOYELE WACHIFALA BUSA NOKHOCHKOLOLOSIA NEPAASI Tawe. ORA KAMANDA KE KUMULILO MUPAASI MALA WALEKHA YABILA PIE. NONO WAALA ENGUBO KHUMEESE MALA WAKEESI AKHO EPAASI EBILILE NENGUBO EKOLOLOKHA.

WRITING TEST
LUBUKUSU

1. CHINGUBO NECHIKHAKHUPWANGA EPAASI TA NE CHINDA CHIKWAMO. CHINDA CHILI SINDU SIIBI SIKILA CHIKHULUMA NE CHINYWA KAMAFUKI.
2. LUNDI CHIKHUKHOLA WEYAKALA KUMUBILI KWOSI. NISIO SIKILANGA MWALIMU NALOMA ARI BASOMI BAKHOYELE KHUSINGA CHINGUBO CHIABWE NE KHUCHIPAASABULAYI PO, NIO CHINDA CHILEKHA KHUKWAMO TA.
3. CHINGUBO CHIE KAMASIELA SECHIASINGANGWA Tawe. BACHISUKUSANGA BUSA CHIOLA MALA BACHI AKHANGA BUSA KAMAFURA KONG'ENE. BANDU BALALA BASIILI NE CHINGUBO CHIE KAMASIELO.
4. NE BULI EMBAKA NDALA ELI HAKARI HE CHINAMBA ELIMO CHIMBAKA CHINGEKHE CHIRAANO. BULI EMBAKA ENGEKHE ELANGWA ETAKIKA. KHWAKO KHUBALA KHUNYOLA MBO ESA ELIMO CHITAKIKA SITIINI.
5. SING'ENG'E SILI NE KUMUBILI KUMUMNYELELE MALA KUMULEEYI. SILI NE BIKELE SITA MALA BILEEYI. SILI NE KUMUNWA KUMULEEYI.
6. LUNO KHUKENDELA CHINGUBO CHIEFWAMBA. NEKHWENYA KHURI CHIBE CHINDAYI KHUKHOYELE KHWACHISINGA NE KAMEECHI NE SABUUNI.

WRITING TEST
ATESO

1. IPISITO KESI IPONESIO LUIPU; AKAKWANGAK, AKERIOKOK KA NUKARENGAK. IDOOKO NUKAKWANGAK AITELLEKAAR NUKARENGAK. IRUCURUCETE AKIDORE. NGUN EMINAR TOTO KES AITELEKAAR.

2. KANU KEITANANE KALO, EDOOKO AKOKORO ABEIYE. EBUSAKIIT TOTO K'IMARUDI AKISEK ABEIYE NUERACIRACETE KESI KONGIN DE. TOTO ASEKI NUKENG OBUKI ASO IMARUDI NUKENG ASOWANIT.
3. KWAPE KIJENIA ONI, MAM AKOKOROI KIRIDIDIET AKIMAT AKIPI KWAPE K'AKITUK. NESI IMARUDI AMINAR AKITERE KES IMUNGANARETE AKWES KUJU EMASETE AKIPI.
4. INGARAKIT IMARUDI TOTO AKILELEBANAR ADIYON K'ABOSETAIT. ENYOUT EDYA LOIRAIKINO NEN APOLOUN ECALICALI NOI. KEPLOOR EDYA KA TOTO ITEGWELANARI ECE K'AGWELANARET.
5. EYALAMA. "NOI ASO IMARUDI DE ABALA ETAU KUDKUD ALUMON AIYALAMA KENG. EYALAMA NOI EJAKAIT OSIYA. ETAKANI ENAAGA EDONYONY EJOK. EYALAMA NOI."

READING TEST
ATESO

1. ELU KIPOKONA EYANGARIETE EDYA KEC ODUKAI AGWELAR. IITUTO OSI EBE AJAASI KESI K'ABEIYE DA IPU. NU DA AYANGARIO AGWELAR NAARAI IPUWAK NOI AITELEKAAR NUAKOTOSI KESI. TOTO K'IMARUDI EMIITO ASWAM KEC.
2. AKIPIT AKOKORO ERAIT ABAR NAEPOL. KANE KIYANYUNI ITO K'AKOKU KENG IMARUDI. KIJENI EBE, KITANA AKOKORO KOJOKAN, EURRIETE ABEIYE NUIP ITANIETE KESI KES K'EKIRIDIDI. IMARUDI NES ETWARI EKIRIDIDI ASO TOTO EDAKIT INYAMAT LUK'IMIYOI.
3. NESI AGWELANARATA KESI LOPIYA KAMA KICE. IMARUDI NGIN EDENGI ENYANYA LOKAKONON. TOTO DA ETUBUNENE AKWES KEKABIC AGWELAR. AMINA NUCEBERU NUALISITOS AKIMUUDU EDYA KEC NOI. IFISI K'IMARUDI ADUMUNOS K'ODYA.
4. EROKO KEIKARA KADUKAI, ABU IMARUDI KIITU EBE ETUMUNIT ITO KENG NES AMUK NUMUPIIRAI. KANEN ABU TOTO BERE KIRERO ECWE KWAPE AJAAR. APON BO KODUMUNE ICWE EROKO EUSUS. NES KESI APAYARI ODUKA K'AMUK.
5. KOROT ELOSIO ORE KIITU TOTO EBE EKOTE ENYANYA AKITO NUKIGANGET TETER EMAN KEBOSI. APOTU KOLOMIKISI AKIRARUN AKITO NUAKOTOSI KESI. TOTO ABU KIRARU IPU AITELEKAARI IMARUDI. KONYOKINETE EROTO ORE.

