Performance Indicators

in Bank-Financed Education Operations:

Second Edition

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PREFACE

This paper is part of a bank-wide exercise undertaken by the Central Vice-Presidencies to operationalize the recommendations of the Wapenhans Report. It is addressed to all Bank staff engaged in work in the education sector, and outlines an approach for utilizing sectoral and project performance indicators in Bank-funded education projects. It was originally envisaged that the Notes would undergo a series of revisions until operationally satisfactory. This second edition Note builds on the work of the Sector Paper: Priorities and Strategies for Education and further comments from Bank staff and the Board.

The authors would particularly like to thank Peter Moock for his advice and support during the early development of the paper, Nicholas Burnett and George Psacharopoulos during its latter stages and Marlaine Lockheed, who as principal reviewer, has provided valuable guidance throughout. The paper builds on the considerable existing work of Bank education sector staff from all regions, and on the extensive literature on educational measurement. Mention of specific names does not reflect the extent of consultation and exploration undertaken with the assistance of many Bank staff. The paper has benefitted from discussions, the written work of, and comments from many ESP (now HDD) and Operational staff including: Arvil van Adams, Michael Bamberger, Jaap Bregman, Soniya Carvalho, Tom Eisemon, Don Holsinger, Harry Patrinos, Ralph Romain, James Socknat, and Jee-Peng Tan. Members of the Project Quality Workgroup Advisory Committee who gave extensively of their time and expertise and were instrumental in developing the paper in its final form are: Constance Corbett, David Fretwell, Vincent Greaney, Ward Heneveld, Robin Horn, Steen Jorgensen, Vincente Paqueo, Michelle Riboud, Eduardo Velez, and Cecilia Valdivieso.
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EXECUTIVE SUMMARY
PERFORMANCE INDICATORS IN BANK-FINANCED EDUCATION PROJECTS

i. Motivation for the paper. The Wapenhans report identified poor project monitoring and supervision, as well as a lack of focus on project outputs and development impact, as contributing to poor project portfolio performance. The Bank needs to improve collaborative efforts with Clients to measure the success of project implementation and the impact of project activities on education sector goals. This paper discusses both education sector and project specific performance indicators. It concludes that sector specific performance indicators can assist in rationalizing lending strategies and providing the framework for monitoring and evaluation. The inclusion of useful project-specific indicators can provide a framework for project design, and helps monitor implementation progress towards overall development goals.

ii. Data Collection and Analysis. Country context data provide the socio-economic background from which system-wide changes are measured. Country context data should emerge naturally out of economic and sector work, or should provide the impetus for better data collection at project identification. Education sector data are information that enable policy decisions to be made about education systems. These data are useful in project identification and impact evaluation. Project performance data mark the progress of project components towards specific targets. These data are used to monitor and evaluate project performance.

iii. Using Sectoral Analysis for Policy and Priority Setting. The Bank endorses greater use of both economic analysis and learning assessments to drive policy decisions and set benchmarks for measuring the effect of Bank-funded projects on those policies. Sectoral analyses must be a priority when identifying policy options, taking into account overall educational goals. Given the weaknesses of data collection and the difficulty of discounting the many external factors influencing learning, making causal inferences from education sector indicators must be done with care.

iv. Education indicators summarize the value added of schooling and training as measured directly through tests of learning achievement, staff training and availability of material supplies. They can also summarize the cost effectiveness of service provision and equity of access. Indicators of labor market response measure the benefits to individuals and to the economic system of a particular form of training. To be meaningful, education indicators must be analyzed in the context of system needs and available financing. Indicators should be valid, reliable, sensitive and specific, and can be either qualitative or quantitative. Indicators must be selected by the Client, and the collection of project related data should encourage sustained national data collection to provide the foundation for future policy decisions.

v. Indicator Use in the Project Cycle. The paper uses a typology of four project performance indicators and links these to the project cycle. To be of use, individual indicators must be analyzed in relation to other indicators and sector or project information. Inputs are project specific resources to be provided. They form the basis of the project activities as identified at appraisal. Process indicators monitor stages of project implementation during the
implementation and supervision phase. **Output/Indicators**, measure the completion of project targets and any measurable impact on overall policy goals. **Impact** indicators are derived from sectoral data and are used to measure the impact of the project on the Client's long term sectoral goals, usually after project completion. These categories can and often do overlap depending on project objectives.

vi. **Principal Recommendations.** In order to facilitate the acquisition of better data and their use in project design and throughout the project cycle, the principal recommendations of this paper are:

- A Country Context Data Sheet should be included in all SARs. This should contain the sectoral and project specific information relevant to each operation as well as selected national basic data. This data sheet should become a tool for Clients to assess the extent of their national data collection and data collection needs. Annex 1 contains a sample data sheet.

- Country economic and sector work should be a foundation for policy decisions. Adoption of economic justification for project design should routinely be used to assist in developing clear project objectives and leading to feasible implementation plans. Economic analysis and analysis of learning achievements should be used to determine investment priorities.

- Data disaggregation is necessary to analyze specific equity issues. Baseline data should be collected prior to implementation, or shortly thereafter.

- Project performance indicators should be: (a) derived from objectives agreed between Client and Bank; (b) simple, building on lessons from experience; (c) agreed upon during appraisal; and (d) included in the SAR for use by supervision missions and project management staff as benchmarks for implementation. Clear indicators tied to project objectives are needed to provide information over the life of a project. Annexes 2 and 3 provide examples.

- Monitoring implementation requires consistent attention to process indicators. A standard reporting form should include: (a) a description of project activities; (b) the parties responsible for each activity and data collection; (c) appropriate monitoring indicators; (d) target dates and the status of each activity. Annex 4 provides an example.

*Looking towards the Future*

vii. Comparative education data is known to be lacking both in quantity and quality. In order to improve knowledge regarding effective resource allocation for education systems, more accurate data collection is needed. The Bank continues to work with UNESCO to achieve common definitions for MIS systems.
I. INTRODUCTION

1. Motivation  Bank lending for education increased from 5 to 9 percent of total Bank lending between 1984 and 1994 and the volume of lending increased to $11.9 billion in FY94. However the 1994 Education Sector Portfolio Performance Review\(^1\) reveals a mixed picture of education sector project success. Education sector project ratings vary according to region and are not significantly and consistently improving over time. Significant disparities occur in portfolio quality for individual countries. Identified problems in ongoing projects include institutional and policy issues and poor project management. The Annual Review of Portfolio Performance comments on the need for improved risk analysis, complexity of design and implementation readiness in the twenty one new projects entering the portfolio in FY94.

2. OED findings of a gradually weakening portfolio performance in all Bank-financed projects were highlighted when the Portfolio Management Task Force Report was issued in October 1992 (the "Wapenhans Report"). This report was followed in July 1993 by a management response entitled "Portfolio Management, Next Steps - A Program of Action (Next Steps). This paper is part of the Human Development Department’s response to the issues raised by the Next Steps Paper, which emphasized the need for monitoring and evaluation benchmarks in all projects, to be derived from agreed sector and project objectives.

3. Objectives and Scope  The paper aims to guide Bank staff on the uses of sectoral and project specific data in order to better meet education sector goals as defined by both the Bank and its Clients. The paper is closely linked to two other responses to the Next Steps Paper, namely a forthcoming OD 10.04: Economic Evaluation of Projects Operations \(^2\) and Performance Indicators in Poverty Reduction Operations.

4. The paper deals with two issues: the collection and use of education sector data, and the use of project specific data as indicators for the monitoring and evaluation of Bank-funded education projects. It draws on past work from the Human Development Department (and its predecessors) and on outside sources, discusses conceptual and measurement issues and raises questions for further work. Staff Appraisal Reports (SARs) issued between 1987 and 1993 were examined for good practices and for indicator use, together with selected mid-term reviews and supervision reports. Discussions with HDD and operations staff provided much practical input

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\(^1\) ARPP FY94: Education Sector Portfolio Performance Review, January 1995, Education and Social Policy Department.

on implementation experiences. Examples of indicators given in the paper are suggestions only as to the type and nature of indicators suitable for measuring particular issues (such as access to education by gender), not recommendations for indicators suitable for all projects.

II. COLLECTION AND ANALYSIS OF EDUCATION DATA

5. International Experience with Education Indicators Recent years have witnessed an increased interest in educational indicators. US interest was spurred by the 1983 report "A Nation at Risk" which demonstrated the poor performance of the US education system. International interest was demonstrated through the 1987 OECD cross-national indicator project, and continued UNESCO research, as well as the IEEP and IEA comparisons of science and mathematics achievement. This interest stemmed partly from the recent economic recession which of necessity curtailed education spending, and from the desire of policy makers to measure the relationship between investments and educational attainment.

6. Although efforts to achieve standardization of education sector indicators, such as the OECD and UNESCO data base initiatives have progressed greatly during the last five years, data remain flawed due to inaccurate data recording and cross-country differences in educational systems, terminology and type of data collected. There are considerable methodological problems involved: disparate educational information systems between countries and within countries; differences in educational systems; differences in classification and terminology; imbalances in the collection of data. Reasons for the lack of reliable information are multiple and include the complex nature of the educational process, lack of resources, lack of capacity to carry out educational research, the political nature of educational data, and lack of standardization of education system components (McRae, 1990). With increasing decentralization of education systems, problems arise with the collection of data at local and school level and the integration of such data with national level databases.

7. OECD experience in gathering data for international comparison demonstrates the difficulties inherent in measuring systems that differ both in inputs and goals. OECD education systems are often similar, but cultural and political differences make cross-national comparisons difficult. This is one of the reasons why country-specific contextual data is so important in determining project outcomes and their impact on systems. For example, regular attendance at school is not a desired norm in all OECD countries; accordingly there is no uniform interest in such data collection (Ruby, 1992).

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8. Education is a change process with many behavioral and contextual variables. The end product can be defined both in terms of individual growth, and in terms of the preparation of qualified labor force participants to strengthen national economies. Even when using the best data available, care should be taken in the identification of indicators that can reliably be used to measure progress towards sectoral objectives, bearing in mind that accurate measurement of some objectives may not be feasible. 5

9. Indicator definitions. There are no universally accepted classifications of sector and project performance indicators in education. For the purpose of the discussions in this paper, the data is grouped by: (a) levels of aggregation (country context, education sector specific data and project specific data; and (b) data type (input, process, output and impact.) Chart 1 (page 10) shows how different indicators are useful at different stages of the Bank’s project cycle. Because of imprecise definitions and changes in definitions depending on context, these groupings are important mainly as aids to the discussion. It is, however important in each project to differentiate between country context and project-specific indicators in order to highlight the relevance of each project in the sector. Ideally international standardized indicators should be used at each national level, and reflected in the choice of project-specific indicators, to monitor change over time. However in reality such standardization does not exist. Individual projects therefore need a country specific range of indicators to reflect specific project goals and circumstances. Project specific indicators must be closely tailored to project objectives and therefore cannot be standardized. The use of project-specific indicators is discussed in section IV of the paper (Indicator Use in the Project Cycle).

10. Country Context Indicators are the country-specific economic and social indicators by which system-wide changes in education are measured. For the purpose of most projects in the social sectors (education, labor and some others), it is important to measure the effects of these projects against the overall dimensions of the system, especially in smaller countries. The dimensions of the population pyramid, the size of the school-age populations in relation to that pyramid, the GDP per capita, the proportions of public funds used in support of education and other human resources interventions, and a number of other system-wide indicators, such as nutritional status of children are key factors for settings of education projects. Some of these data are unlikely to change significantly during a project period. (i.e. total school-age population), but are important for understanding project context.

11. Prior to 1987, a data sheet giving country economic and social and sectoral data was required for all Bank-financed education projects. This was abandoned as a systematic exercise in the wake of the 1987 reorganization on the grounds that the collected data was often of poor quality. The gap between our academic aims and available measures is important, because, to the extent that educational indicators have direct consequences attached to them, as in the case of performance indicators, these limited measures begin to re-form classroom practice in their image. There is an assumption that policy action based on indicators will produce a desired result. Indicators are intended to advance constructive action, but such action is contextually embedded. Variations in culture and basic understandings about the interrelationships of individuals, family, school and society are features of educational systems. The imminent danger is that the indicator model will frame the subsequent discussion, in essence becoming the implicitly assumed model for schooling everywhere.” (Bryk and Hermanson, pg. 455, 1993)
quality and not relevant to individual projects. Since that time new initiatives (such as the OECD program) have been developed, and a strong incentive remains to improve the collection and use of education data.

12. This paper recommends that the SARs of all Bank-financed education projects include a country-context data sheet, containing economic and social data relevant to the education sector. The purpose of these general data would be to set the stage for each lending operation, and inform the reader about the socio-economic background against which the project is developed. More importantly, the data sheet would also contain selected education sector indicators, relevant to that specific project. Such a sheet should be developed into a tool for Clients, to: (a) assist in identifying country-level data that are needed for policy decisions, (b) demonstrate the need for data collection; and (c) provide a reference point for planning and supervising new projects and for measuring project success. The indicators should be collected by the Client from best available sources during sector work and supervision and be discussed at identification and appraisal. To make the collection less onerous, data updates would normally be carried out only on items of immediate relevance to each particular operation. Therefore the indicators would vary according to the type of project and level of education addressed. Sources for the data should be included. A suggested country context data sheet to be included in future SARs is included in Annex 1.

13. In order for such data to be collected, adequate funding and other resources must be made available to carry out the data collection. We postulate that Clients would be willing to use their own or project funds for data collection and analysis if the rationale for such collection is clear and if the needs are collaboratively analyzed during sector work and project identification. The data sheet should be seen as a part of an iterative process of collaboration with Clients to prioritize investments and set sector goals. It should also be seen as a capacity building measure and -- as a spinoff effect -- provide the Bank with needed information. Financial and technical assistance support for the collection and analysis of education data and the conduct of impact evaluation should be routinely included in Bank-financed education projects.

III. INDICATOR USE IN SETTING SECTORAL POLICY AND PRIORITY

14. Education Sector Indicators have three main characteristics: they should be measurable; each one should focus on one key aspect of the education system rather than an in depth analysis; and they should be measurable against a reference point or baseline. This baseline is usually a socially agreed standard such as the minimum reading age as a marker for basic literacy (Scheerens, 1992).

15. Sector-specific performance indicators can assist policy makers, task managers and staff carrying out sector work in: rationalizing a lending strategy, selecting project strategies (including value judgements), and providing a framework for monitoring project activities, and
for subsequent project and sectoral evaluation. Upfront economic analysis is necessary at the project identification stage when project objectives and the enabling and risk factors for project success are considered. Such an analysis can provide a framework for rational decision making, through tools such as cost-benefit analysis which enable judgements to be made regarding the economic merits of a particular program or project. The 1995 Sector Review on Priorities and Strategies for Education\(^6\) emphasizes the need for using economic analysis to guide investment decisions towards areas with high social returns. This need is reflected in the forthcoming OD:10.04 on Economic Analysis of Projects which recommends economic justification for education projects.

### Measures for Analysis of the Education Sector

Clients should be encouraged to gather data that will enable the following analysis to take place as a basis for policy making in the education sector. Measurements are considered internal if output relates to educational outcomes and external if output relates to labor market performance.

1. Unit costs of education, broken down by all relevant inputs (e.g., schooling type, curriculum type, private and public institutions);
2. Learning outcomes as measured by standard achievement test scores;
3. Earnings/productivity of graduates by education level;
4. Recurrent costs for maintaining a sustainable education system;
5. Cost-effectiveness analysis to measure non-monetary outputs such as the relation of pedagogical inputs to achievement scores;
6. Cost-benefit analysis to compare the benefits measured as wages to individuals and society to the cost of providing education, by calculating of return;
7. Assessments of the equitable distribution of resources, through financing mechanisms and special measures such as nutrition programs.
8. Costing alternative interventions to produce the same output could be considered.

Box 1: Tools for Economic Analysis of Education Sector Data

16. Calculating the unit costs of education by level, the public and private benefits of education and assessments of efficiency and equity\(^7\) are essential elements of informed policy decisions (See Box 1). Combined with other enabling and risk factors, such as institutional and project management capacity, as well as political and budgetary constraints, these give guidelines for project design (a few examples of the latter factors are shown in Annex 2). Such analyses

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\(^7\) George Psacharopoulos, "Using Evaluation Indicators to Track the Performance of Education Programs", New Directions for Evaluation, American Evaluation Association, Fall 1995.
should reflect the "value added" of schooling by measuring the effects of those inputs on learning achievement and labor market productivity over time. Rate of return analysis in combination with learning assessment data can give an overall picture of the quality, efficiency and effectiveness of a stem in regard to specific goals.

17. **Internal Efficiency** measures used in Bank education projects include: the number of years it takes to produce a graduate; the unit cost per graduate; the percent of a cohort completing a certain level of education; pupil/teacher ratios and student/classroom ratios. Other markers for internal efficiency are: student learning scores; dropout rates; and graduation rates. External efficiency of educational investment is usually judged by the extent to which schools, universities or training institutions provide the necessary skills for the smooth running of the economy, and the extent to which graduates are absorbed into the labor market, find the jobs and the earnings they expect, and are able to use their skills in employment. External efficiency is also measured by the balance between the costs of investment in education and the economic benefits as measured by the higher productivity of educated workers— that is, by the social rate of return.

18. **Quality and Relevance Measures** in education relate both to student outcomes and to "improved environments and educational aids which lead to detectable gains in the knowledge, skills and values acquired by students." Although this definition holds for all levels, indicators of quality in education differ in some respects by education level and by country economic status. Indicators of learning achievement have been increasingly emphasized in recent years as the central education output indicator, particularly for primary and secondary education. The Bank Policy Paper on Primary Education emphasized the need to introduce systems for the regular collection and reporting of data on student achievement and other key performance indicators.

19. Today about 40 percent of Bank-financed education projects support systems to collect standardized measures of achievement, which can be used both for education sector and project monitoring. Increasing attention is being given in Bank-financed projects to strengthening the capacity of national agencies to obtain country-specific measures of learning achievement. Recent experience in Primary Education Projects in India has shown that it is possible to measure some learning achievement gains during a project cycle. Extensive work on the measurement of learning achievement has been carried out including that of Larach and Lockheed (1993). As with any other form of measurement, such data does not stand alone as a guide to improvements in education systems (see para 27 on decentralization).

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An example is the Brazil Second North-East Education SAR (Loan No: 3604, FY93) which uses staffing ratios and materials ratios as annual efficiency targets for States involved in the project.


See discussions of quality in Planning the Quality of Education, Ken Ross and Lars Mahlick, and, Questions of Quality: Primary Education and Development, Hugh Hawes and David Stephens.
20. Quality in Vocational Education and Training is usually evaluated in terms of the employment and earnings potentials of graduates in the labor market. Quality in higher education can be similarly measured, but is more often measured by the quality of research and teaching. Indicators for measuring quality are often proxy indicators. In the case of higher education they can measure a feature of the education system such as the number of research papers accepted by journals using the peer review method or the labor market potential of graduates. The relevance of received training is also of importance. A school may graduate students of great quality but with poor employment prospects. This is of particular importance for publicly funded schools.

21. **Equity Concerns** encompass: (a) concerns about access and quality for different socio-economic groups, as well as; (b) the specific needs of indigenous and other minority groups and girls and women. Measures of equitable distribution of financial resources can include the proportion of national budgets allocated to different levels of education, state or regional expenditures on education, and the proportion of locally raised taxes allocated to education in decentralized systems. Indicators should also try to capture differences in the provision and quality of education between urban and rural areas. This can include: expenditure differences; variations in teacher qualifications; the provision of services such as student-lunch programs; the provision of textbooks and materials; and the availability of library facilities. Examining regional or geographical groupings may be helpful as a proxy for these issues.

22. Equitable distribution of financing to assure national standards is a major issue.\(^{11}\) According to research reported in Lockheed and Verspoor (1991), the majority of children who do not attend school in developing countries come from traditionally disadvantaged minority groups. Three major reasons for non-school attendance are: inadequate supply of school places, high cost to households relative to perceived benefits, and discriminatory treatment in schools. Governments should be encouraged to collect disaggregated data that show the extent of such resource disparities. Along with indigenous groups, the needs of refugee populations and migrant workers should also be addressed.\(^{12}\)

23. Psacharopoulos and Patrinos (1994) call for a range of indicators to identify more clearly indigenous populations, including language, self-identification or self-perception, geographic location, and dress. These can provide the baseline data for assessments of educational status and achievement. Data on non-traditional schooling schemes is of particular importance for minority groups and girls.\(^ {13}\) Baseline data disaggregated by gender, poverty, ethnicity, urban/rural disparities should ideally be collected prior to appraisal and the identification of

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\(^{11}\) Carvalho poverty indicators paper

\(^{12}\) Useful indicators might include: participation and success rates of ethnic, religious or language minority students; the number and status of teachers and administrators in the education system from those groups; appropriate curriculum and textbook content; the provision of teachers familiar with non-mainstream cultures; and linguistic information on teachers and students.

\(^{13}\) Examples of indicators for gender issues from the Republic of Zambia Education Rehabilitation Project, 1993 (Credit No. 2429) can be found in Annex 5.
equity-specific indicators should be part of project design. If this is not possible, studies to collect such data should be included in project planning. Project data should be disaggregated by gender, poverty, ethnicity and learning environment. Data disaggregated by region can sometimes serve as a proxy for these issues. Box 2 shows examples of gender-sensitive indicators. Annexes 5 gives further examples of indicators to measure gender related issues.

Box 2: Gender-sensitive Indicators measuring access to Education

Indicators that measure changes in access to education for women might include:

1. introduction of policies or strategies in support of women’s education opportunities;
2. eradication of policies or strategies militating against women’s education opportunities;
3. female enrollment trends;
4. stipends and salaries for women;
5. higher education graduation rate by gender (the ratio of men to women graduating);
6. numbers of training programs designed for women;
7. female teachers as proportion of teaching staff at different education levels.
8. criteria for fellowships for women.

Further variables that can be used to measure equity can be found in “The Development of Indicators on Equity in Education”, Alan Gibson and Denis Meuret, in Measuring the Quality of Schools, OECD, 1995.
IV. INDICATOR USE IN THE PROJECT CYCLE

24. Institutional Issues. The importance of monitoring as a management tool for project implementing staff and the institutional responsibilities for monitoring and evaluation should be addressed during project preparation. Subsequently the appraisal team should weigh: (a) the adequacy of the proposed monitoring and evaluation system; and (b) the appropriateness of separating the entity responsible for evaluation from the implementing agency. While there are no hard and fast rules on this score, the ability of the implementing agency to critically evaluate its own work must be a deciding factor. During the implementation phase, supervision missions should coach Clients in the use of monitoring as a management tool to collect data, track project performance, and analyze and evaluate the results.

25. Efficient implementation requires consistent attention to process indicators. This includes establishing time-tables to: (a) describe and prioritize project activities; (b) identify the monitoring indicators to be used for measurement; (c) set target dates to be achieved; (d) identify the parties responsible for monitoring; and (e) report on the status of actions. See Annex 4 for an example. Project indicators should be defined by, or in collaboration with the Client/Implementing Agency. Client investment in and understanding of the rationale for data collection is vital if indicators are to be usefully and reliably collected. The cost of monitoring and evaluation is borne by the Client, and indicators that are not viewed by the implementing entities to be a part of good project design are unlikely to be updated and sustained over time. Annex 2 provides examples of enabling and risk factors, and Annex 3 provides examples of impact indicators.

26. There are dangers in tying monetary or other project implementation rewards to indicator performance because funding decisions based on indicator performance may encourage skewed or falsified data recording. Incorporation of data collection into legal documents can be a means of encouraging Client participation, but only if the indicators chosen are realistic and developed in conjunction with Clients. Indicator systems seen as too complex or irrelevant are unlikely to become operational.

27. Education projects are increasingly undertaken in institutional frameworks with some decentralization, through devolution or deconcentration. Decentralization is a complex, continuous process which complicates data collection and can introduce new variables to be considered when using data for school or country comparisons. Commitment from local agencies and new mechanisms for data collection, such as contracted services and capacity building at lower levels will be needed as the responsibility for data collection is no longer located in central ministries. Monitoring indicators are particularly useful for identifying ongoing changes, anticipating needed changes, and pinpointing new directions for project management. Decentralization requires the collection of data at national and sub-national levels. Adequate data collection depends on the type and level of decentralization, management information capacity, and financing arrangements. It is particularly important to plan for
impact evaluations on projects that take place in changing administrative and political contexts.16

28. **Project Specific Indicators** should be: (a) derived from mutually agreed objectives; (b) simple, building on lessons from experience; (c) agreed upon during appraisal; and (d) included in the SAR for use by supervision missions and project management staff as benchmarks for implementation. Sector and project categories of indicators often overlap in education projects. The important unique characteristic of project specific indicators is that they must be closely tailored to project objectives and be designed to reflect changes that take place in that project within the project cycle. These indicators are multidimensional, involving time, financial components, physical components and policy or decision making aspects.

29. The Chart Below shows schematically how the Project-Specific Indicators of Input, Process, Output and Impact fit into the Project Cycle, albeit with considerable overlap. The chart also shows how the results of impact analysis should guide further inputs. In some cases, Input, Process, Output and Impact indicators overlap, depending on what is being measured. For example, training teachers is a process. The important output is the number of teachers trained. To measure whether courses were run, and how many trained teachers are teaching at the end of the project is a measure of project impact on the teaching force.

**Chart 1: The Relation of Project Specific Indicators to the Bank Project Cycle**

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16 Indicators of the devolution of financial responsibility can include: numbers of distinct school systems; proportion of key education decisions made locally; existence of school boards, their methods of election and financial mandates; percent of locally generated revenue that stays local.
30. **Project Input Indicators** show what the project intends to provide. They are the project-specific resources to be provided for each project item such as textbooks to be provided, or training to be delivered. By appraisal, all the Input indicators in a project should either have been identified, mutually agreed and incorporated into the SAR, or mechanisms for their development through sub-project monitoring and evaluation designed and agreed upon. Input/Output indicators are most commonly found in Bank project documents. The nature of the inputs and attendant outputs determines the type of process and outcome measurements to be obtained. Once all project objectives and detailed project items have been identified, the input indicators can be enumerated and tabulated, component by component in a project implementation matrix. Sample input indicators can be found in the Project Implementation Tables in Annex 4.

31. **Project Process Indicators** measure what actually happened during project implementation and are therefore benchmarks for measuring progress towards specific project targets. In project work, it may be convenient to conceptually divide the process indicators into financial and physical indicators because they measure two different aspects of project implementation (see Box 3).

32. Monitoring project process indicators is a task for implementing agencies and supervision missions, particularly where data collection and MIS capacity building are important components of the project. Simple mechanisms such as the standardization of data reporting forms, where multiple institutions are involved, can ensure more effective supervision.

33. Monitoring and Evaluation indicators are sometimes incorporated into legal documentation and used at mid-term reviews of project to determine their future course. Information on sub-projects and on indicators for data collection may be incorporated into a working document and placed in project files, or may be held by the Client. In either case, such information is necessary for supervision.

34. **Project Output Indicators** measure the output for each project or component, such as improvements in learning achievement in relation to baseline test data, changes in economic status of beneficiaries or increased labor market potential of project-supported graduates. Output indicators determine whether project goals are being achieved, and whether the project activities are on target to affect sectoral policies as planned. Before completion, information from these indicators is often used to identify new projects, or direct further policy changes. (see Box 4). The measurement of desired policy outcomes for a given project is dependent on the
existence of accurate baseline data. However, this data may not be available before the start of the project, which prevents key objectives, such as improved learning achievement, or improved access to labor markets to be measured during project lifetimes. Project activities are also influenced by multiple external variables that are often difficult to control for.

35. **Project Impact Indicators** determine development impact by measuring the effects of projects on the Client’s long-term sectoral goals. **Impact** evaluation can begin during a project but is usually carried out at a later stage. OED studies of the impact of Bank-financed education projects have stressed the concept of **sustainability** based on the flow of project benefits after project completion. These indicators measure the post-completion levels of project outputs, efficiency and qualitative indicators, and spin-off effects. The OED studies also found that sustainability can be strengthened by systematic monitoring and evaluation. Careful monitoring can enable projects to respond to changing local circumstance. The extension of monitoring and evaluation activities into the post-completion period is known to be important for maintaining sustainable project effects (see Box 5 for textbook projects). This can be assisted through ensuring the continuation and expansion of data collection from one project to another. Annex 3 includes examples of impact indicators. Annex 4 gives a project-specific example of impact indicators.

Impact Indicators depend on baseline data for their usefulness in measuring the effectiveness of project activities. Possible indicators for measuring the development impact of activities in a project that aims to comprehensively address sustainable, appropriate textbook provision could be:

1. The textbook/pupil ratio in project schools.
2. The number of teachers observed using texts.
4. The average book life as a measure of material quality.
5. Increased achievement gains (As a measure of quality improvement)
6. Number of required texts in classes at the beginning of a school year.

**Box 5: Sample Impact Indicators for Textbook Components**

36. **Time frames** for project evaluation vary according to project types. For education data to be meaningfully analyzed, it should be collected over a period of at least five years, longer if possible. The evaluation methodology of an FY93 Secondary Education Reform Project in
Jamaica takes into account that indicators of the success of the reform program such as improved achievement scores and labor force data, cannot be easily detected in the early years as it takes three years for the first cohort in the project to complete Grade 9. In that case, proxy indicators were developed and used to monitor interim progress. Thus interim information can form the basis for needed modifications and guide the planning for subsequent phases. In other cases information on outputs is collected before project completion. An important point to consider in the case of vocational and higher educations is, that you must have an immediate success. If not, the project is a failure.

37. **Baseline studies** set the stage for evaluation of project output and impact. Such studies are most useful when carried out by Clients prior to project preparation. Annex 4 gives an example of baseline data that was prepared before-approval in an India project. Baseline studies are sometimes carried out during one project in anticipation of the next, or funded through Project Preparation monies. Often, however, the studies are carried out too late in the project cycle for their usefulness to take effect. As reported by Lockheed and Rodd (1991), Clients are typically reluctant to see loans for research, and the poor quality and completion rates of such studies has been discouraging. OED findings also indicate that tracer studies are rarely carried out because project implementing institutions do not have the time, specialized staff, or funds to undertake detailed and comprehensive follow-up studies over an extended period. Bank mandated efforts may encourage data collection, but caution should be used in following this path which may result in a lack of "ownership", unless this is associated with measures for client capacity building and unless there is a clear agreement on indicator usage with Clients.

38. **Indicators of Beneficiary Participation** in Bank-financed projects, should be woven into the design of projects. This increases the likelihood of project success and ensures that project activities are correctly targeted. In evaluating the extent of participation in local decision making, information on the groups involved and their motivation may be more useful than simply counting the numbers of participants. This information can be incorporated into the project monitoring system and assessed at supervision, mid-term and completion stages. Joint monitoring and evaluation systems work towards Bank goals of teaching new skills but require: continuity of personnel from government and donor agency; a network of supportive government personnel; avoidance of partisan politics; community leadership; and a sense of community and investment in project goals. Utilizing quantitative as well as qualitative indicators can draw out the extent and effectiveness of participation, as well as warning of some of the potential problems involved in participation. (Uphoff in Bhatnagar et al., 1992). Data gathered by and with beneficiaries at the initial project stages using methodologies such as rapid appraisal and beneficiary assessments can be used for monitoring participation. (Salmen, 1992).

39. **Lessons Learned and Conclusions** A well-designed project is consistent with sector goals and includes measurable objectives from which evaluation strategies should flow. A wide range of Bank and non-Bank publications address the question of long-term impact evaluation (see Bibliography). Strategies for impact evaluation vary according to the size and scope of the component to be evaluated, and can include re-calculations of rate of return analysis, and randomized or non-randomized designs. Feedback from the evaluation of project activities is
vital not only for monitoring specific project activities, but also for feeding and fostering country education sector data collection in order to improve policy analysis and decision-making.

VI. RECOMMENDATIONS

40. To encourage improved quality, availability and use of sector-specific data in Bank work, the paper recommends that a Country-Specific data sheet, giving the particular country context of each operation be included in the SAR for each Bank-financed operation. The development, maintenance and use of such a sheet should be seen as a part of a Client capacity building exercise and as a spinoff effect -- provide the Bank with needed information (para 12). A sample outline of such a data sheet is shown in Annex 1.

41. Support for the collection and analysis of education data and the conduct of impact evaluations should be routinely included in Bank-financed education projects (para 13).

42. Country economic and sector work should be a foundation for policy decisions. Such work can be helpful both for Bank-funded activities and for other economic activities. Adoption of the approach for project design reflecting the forthcoming recommendations of OD 10.04 on Economic Analysis of Projects will assist in the development of clear project objectives leading to feasible implementation plans. Economic analysis and analysis of learning achievement must be used to define sectoral goals, identify and develop projects and measure outcomes and long-term impact. Calculating unit costs of education, for example, provides a baseline for assessing the effectiveness of financial inputs and should be encouraged (paras 15-16).

43. Data disaggregation is necessary for the analysis of specific issues, e.g. equity (paras 21-23). To permit before and after comparisons of performance, baseline data against which to measure progress must be collected during project preparation, or at least be available in the early stages of a project (para. 37).

44. Project specific indicators should be: (a) derived from objectives agreed between Client and Bank; (b) simple, building on lessons from experience; (c) agreed upon during appraisal; and (d) included in the SAR for use by supervision missions and project management staff as benchmarks for implementation (para 28). Clear indicators tied to project objectives are needed to provide information over a project period. The cost of monitoring and evaluation is born by the Client, and indicators that are not viewed by the implementing entities to be a part of good project design are unlikely to be updated and sustained over time (para 25). Annex 2 provides examples of enabling and risk factors, and Annex 3 provides examples of impact indicators.

45. Monitoring implementation requires consistent attention to process indicators. A standard reporting form should include: (a) a description of project activities; (b) the parties responsible for each activity and data collection; (c) appropriate monitoring indicators; (d) target dates and the status of each activity (para 25).
VII. LOOKING TOWARDS the FUTURE

46. As a longer-term measure to improve national and international comparisons of sectoral data, Clients should be encouraged to participate in schemes to standardize terminology, data collection procedures and data analysis as tools for better sector management. This can best be achieved through the introduction of project components and financing that is designed to address current weaknesses in country and education sector data collection and analysis. The Bank is involved with a variety of MIS investments in education world-wide, and project components designed to improve national or sectoral statistics. Establishing a common point of departure for such aspects of information management as: (a) building and managing modern information services; (b) covering best practices; (c) organizing education statistics services; (d) improving data collection procedures; and (e) monitoring manpower development strategies and career development schemes would seem highly desirable in future project work.

47. A second strand in the proposed longer-term strategy to improve country and sectoral data entails stronger support for UNESCO in their ongoing work to define desirable common definitions for M/S systems in Bank-financed projects. Systematically addressing the need for international collaboration on data collection at least at regional levels would provide client countries with improved national data collection capacity. It would also provide Bank-financed projects with improved sectoral data for policy decision making. The Human Development Department is working with UNESCO and interested agencies to further such improvements in international data collection. The recently published analysis of UNESCO’s statistics performance and the recommendations of that report to UNESCO’s General Conference in October 1995 is an important milestone in this respect.

48. Although many education sector indicators such as enrollment data, are internationally comparable, truly effective and relevant indicators are constantly being developed in the changing education settings. Further work is needed on indicators relating to: early childhood development, higher education, non-formal adult education, and the needs of indigenous and other minority groups. To advance our knowledge, lessons from the implementation of new projects should be better researched, made systematically available to policy makers and planners in Client countries and used to fill the many gaps in our present knowledge.

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Lockheed Marlaine E., Adrian M. Verspoor, and associates, Improving Primary Education in Developing Countries, Oxford University Press, World Bank, 1991


World Bank OP/BP 10.00 – Annex F: Elements of a Project Implementation Plan (June 27, 1994)


World Bank, "The Sustainability of Investment Projects in Education", Report No. 9225,


World Bank, "Getting Results in the Social Sectors: An Agenda for Action", HDD, October 1995 (Draft).
Annex 1: Suggested Country Context Data Sheet

The purpose of this sheet is to provide context for the development of sectoral priorities and project activities, and baseline data for eventual impact evaluation. This data should be collected by Clients during sector work, or early on in the project cycle. A time series for the data would be helpful. Wherever possible, a reference should be made to world-wide and regional averages. While some of this data may initially be difficult or impossible to get, its development over time should be seen as an essential goal.

A. Contextual Country Data (the stage setter for each lending operation):
   - GNP per capita
   - Total population and growth rate per annum
   - Total school age population (5-16) and growth rate per annum
   - Adult illiteracy rate by gender over 15 years
   - Percent of population of defined minorities
   - Infant mortality & life expectancy at birth by gender
   - Daily calorie supplies per capita

B. Labor Force Statistics:
   - Overall employment by education, industry and occupation
   - Unemployment rate: disaggregated by education, gender, minority groupings
   - Public and private employment
   - Earnings, disaggregated by public/private, education level, technical/vocational classification, employment and sector

C. Specific Education Data:

System Characteristics:
   - Net enrollment by level, gender, minority grouping
   - Public/private enrollments by gender/level
   - Average years to complete each level of schooling
   - Repetition and dropout rates
   - Education staff as proportion of total labor force
   - Student/teacher ratios
   - Teacher/non teaching staff ratios

Financial Characteristics:
   - Education budget share of public sector budget
   - Proportions of above for: primary, secondary, tertiary, other levels
   - Public/private amounts of education expenditure
   - Education salary expenditure as % of total expenditure at project supported level
   - Unit costs of education by level

Effectiveness Characteristics:
   - Value added indicators: graduation records, curriculum exposure, achievement scores
   - Indicators of effective school based management
   - Indicators of effective community participation in schooling
Annex 2: Sample Education Related Enabling and Risk Factors

This table outlines factors that can promote or inhibit educational change. They are markers for possible project success and for policy development. For example, if a country spends little on education, there is no evidence of political support for education improvements, the teaching force is unmotivated and there is little evidence of parental interest or motivation to participate in education, extra efforts and supervision may be needed.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Measure/Source</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education Budget Share of GNP and the share allocated for compulsory education.</td>
<td>Education budget as proportion of national budget. Proportion of Education Budget allocated to basic compulsory education. Available from National Statistics Office.</td>
<td>Indicates national level commitment to education, and specifically the proportion of the budget spent on basic education.</td>
</tr>
<tr>
<td>Teacher salaries by education level as a percentage of GDP per capita.</td>
<td>From Department of Education/Statistics Departments.</td>
<td>Indicates political support for the welfare of the teaching force, and/or union influence over teaching force at different education levels.</td>
</tr>
<tr>
<td>Cost of schooling to households by education level as a percentage of household income.</td>
<td>Household surveys/beneficiary assessments of direct and indirect costs of education by gender and rural/urban.</td>
<td>Indicates the financial burden of education on households and the ability/willingness of households to send children to school.</td>
</tr>
<tr>
<td>Household perceptions of the value added of education by level.</td>
<td>Can be found through beneficiary assessments. Proxy measurements can be the average number of years of schooling.</td>
<td>Provides information on whether consumers (parents/attenders) perceive a benefit from remaining in the educational system, or if expectations are unrealistic.</td>
</tr>
<tr>
<td>Political support for education policies</td>
<td>Political statements, votes for proposed actions or changes. The average time a Minister of Education or Finance is in office. Election schedules.</td>
<td>Indicates likelihood of reforms, changes being implemented, and possible opposition to such changes.</td>
</tr>
<tr>
<td>Active Parent/Teacher Associations</td>
<td>Measured by annual number of meetings, composition of PTAs, average nos. of parents attending.</td>
<td>Indicates community involvement and interest in school activities. Available from National PTA organizations.</td>
</tr>
<tr>
<td>Positive State/Central/Local Government Collaboration.</td>
<td>Evidence of effective collaboration on other programs.</td>
<td>Particularly important in decentralizing systems to allow for effective combinations of local and national level funding.</td>
</tr>
<tr>
<td>Parental Expectations for Girls Education.</td>
<td>Can be accessed through sample rapid appraisal or beneficiary assessments.</td>
<td>Measures educational expectations for girls, pinpoints needed changes for girls to remain in school.</td>
</tr>
</tbody>
</table>
Annex 3: Sample Impact Indicators

Below are examples of indicators that point towards the efficiency, effectiveness and quality of education systems, and components of systems relative to its cost. Efforts should be made to provide technical assistance to assist Clients in obtaining and maintaining such data. Used appropriately a few of these and comparable ones can illustrate the efficiency, equity and quality relative to the cost of the education. Many further examples can be found in the literature, and in project SARs.

<table>
<thead>
<tr>
<th>Policy Goal</th>
<th>Indicator</th>
<th>Significance</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental Learning</td>
<td>Standardized Achievement Scores. To be complemented by: (a) composition of school body as defined by socio-economic status, prior achievement; and (b) data on sex, age, nutritional status, language, attitudes, expectations and ability.</td>
<td>Indicative of the qualitative elements of the parts of the education system under review. Makes time-series and international comparisons possible.</td>
<td>Endorsed by the Bank as the method of choice to measure impact of educational interventions. Not un-controversial internationally in terms of reliability and political sensitivity. Most applicable at primary levels, less easy to measure for higher levels of education.</td>
</tr>
<tr>
<td>Cost-effectiveness of Learning</td>
<td>Teacher/Student Ratio</td>
<td>Combined, these indicators are measures of the efficiency of the teaching force.</td>
<td>Individual indicators are not adequate for analysis. A teacher/student ratio alone does not provide enough information when absenteeism is high, class sizes seasonal, and time on task limited by short school days and shift systems.</td>
</tr>
<tr>
<td></td>
<td>Class Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time on Task</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teacher/non teacher staff ratio at state, district or municipal levels.</td>
<td>Indicative of the relative importance of pedagogical versus bureaucratic or infrastructure expenditures.</td>
<td>The definition of &quot;teacher&quot; must be clearly defined for any data to be comparable.</td>
</tr>
<tr>
<td></td>
<td>Repetition Rates.</td>
<td>Indicates the number of under-achieving children in a given system. Can also indicate teacher attitudes towards children and pedagogical skills.</td>
<td>The definition of &quot;repeater&quot; varies. For example in China, repeaters are considered to be enrolled children who attend school, attempt final exams and fail. Others are dropouts.</td>
</tr>
<tr>
<td></td>
<td>Private/public expenditures on education by level.</td>
<td>An important indicator of the availability and success of choice, and marker for public education quality.</td>
<td>Usually difficult to obtain.</td>
</tr>
</tbody>
</table>
## Sample Impact Indicators

<table>
<thead>
<tr>
<th>Policy Goal</th>
<th>Indicator</th>
<th>Significance</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity/Poverty measured by Access to Education</strong></td>
<td>Regional or Departmental achievement measures relative to overall country achievement scores (or enrollments where not available).</td>
<td>Shows distribution of schooling by region. Can be compared to income and other relevant variables to show the spread of education resources. Internal variability within a system gives governments a basis for policy decision making.</td>
<td>This is an example of a proxy indicator, where there is no standard measure for aspects of equity.</td>
</tr>
<tr>
<td><strong>Incidence of Benefits and Costs</strong></td>
<td>Enrollment in Specific subjects broken down by gender, minority etc (Available from UNESCO data, Country Data and Bank files).</td>
<td>This estimates the number of male and female students, minority students etc. in specific subjects as a proportion of all students.</td>
<td>An indicator for who is studying what. Shows numbers differentiated by gender to ascertain access to a wide variety of topics.</td>
</tr>
<tr>
<td><strong>Labor Market Response.</strong></td>
<td>Completion rate, defined as the proportion of students at the start of a cycle who complete that cycle (e.g. students who enter primary one and complete primary six).</td>
<td>Indicative of the value that parents and students place on what the students receive from the education system. Also a proxy for quality.</td>
<td>Simple and reliable quantitative indicator if good education statistics exist. Can also be measured during a project through sample surveys. When differentiated by gender/ minority, it can be a valuable indicator of adverse conditions for under-privileged groups.</td>
</tr>
<tr>
<td><strong>Incidence of Benefits and Costs.</strong></td>
<td>Unit Costs - The cost of education provision per student or graduate: By schooling level, curriculum type, pedagogical inputs, public and private institutions.</td>
<td>Measures the internal efficiency of the education system defined as the best use of limited resources for socially accepted objectives in education. Measures the cost of schooling for each student as some indication of the result of a given expenditure on inputs or resources. Should include costs such as teachers salaries, rental-cost equivalent of buildings, textbooks, materials and supplies.</td>
<td>A vital indicator for measuring the appropriateness of monetary inputs. There is no uniform calculation so it is not easily comparable and it can be equated with cost minimization.</td>
</tr>
<tr>
<td><strong>Labor Market Response.</strong></td>
<td>Labor Force participation rates (through national or project studies)</td>
<td>A measure of post education accomplishments. When broken down by gender, subject, education level, age, gives an overview of the relevance of educational qualifications to job attainment.</td>
<td>Should be gathered through carefully designed tracer studies.</td>
</tr>
<tr>
<td><strong>Incidence of Benefits and Costs.</strong></td>
<td>Earnings of graduates by educational level (by schooling level, by curriculum type, in public vs private sectors) in relation to control group.</td>
<td>Allows for the estimation of private and social costs, and rate of return analysis with unit costs.</td>
<td>Gathered by using labor force, household, LSMS, special surveys and other techniques.</td>
</tr>
</tbody>
</table>
## Annex 4: Sample Implementation Tables

**UTTAR PRADESH BASIC EDUCATION PROJECT**

<table>
<thead>
<tr>
<th>Component (Project Item Bold)</th>
<th>Project Activities/Responsibility</th>
<th>Monitoring Indicator</th>
<th>Date. (Covenants shown in Bold)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Improving Quality and Completion:</td>
<td>(i) Full development of the primary school curriculum to Minimum Levels of Learning (MLL) standards. (ii) Development of teacher handbooks and new textbooks appropriate to MLL curriculum with improved illustrations, page layout and production quality. (iii) Provision of teaching and learning resources materials including consumable educational supplies, for each primary school in project districts, including a small reading library of 200 children's titles. Responsibility: SCERT &amp; DIETs.</td>
<td>(i) Progress of curriculum and review. (ii) Comparative review of book content and quality. Results of field trials of new titles. (iii) Availability of books and other materials in classrooms.</td>
<td>7/94</td>
<td>MLL curriculum for classes 1-5 under development.</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------</td>
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<td>---------------------------------</td>
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</tr>
</tbody>
</table>
Annex 5: Country - Specific Sample of Objectives, Indicators

INDIA: District Primary Education Program
Development Objectives, Indicators and Monitoring

1. Measurement of progress towards the achievement of development objectives is a key feature of the DPEP management structure. To facilitate measurement objectives, indicators and monitoring procedures have been designed for key selected program emphases: (a) capacity building at national and state levels; (b) reducing dropout and improving access; and (c) improving learning achievement.

Capacity Building

2. National and state capacity building objectives and indicators are shown in Annex 5. The indicators focus on observable outcomes of the capacity building process. Progress would be monitored by the DPEP Bureau and by IDA through periodic supervision reports and through the reviews of program implementation carried out annually as part of the work program and budgeting exercise. In addition, evaluation studies would be commissioned to assess the impact of key activities.

Reducing Dropout and Increasing Access

3. The program is intended to reduce overall dropout rate to less than 10 percent over baseline estimates, and to reduce disparities among gender and social groups to less than 5 percent. Current retention rates and enrollments, by gender and caste, provide the baselines against which progress would be measured (Annex 5). The number of dropouts to be averted and the number of new places to be created are shown in Annex 5. Progress would be measured through school statistics on an annual basis.

Improving Learning Achievement

4. Learning achievement in language and mathematics in the final year of primary school would increase by 25 percent over baseline estimates. Test parameters are shown in Annex 5. Readers should note that primary education lasts four years in Assam, Karnataka, Kerala and Maharashtra; and 5 years in Haryana and Tamil Nadu. Different tests were used for grades 4 and 5, with different numbers of items. Baseline average raw test scores (number correct) are shown in Annex 5 and the number of students to benefit from improved instruction is estimated in Annex 5. The learning achievement figures have been derived from the sample-based learning achievement studies conducted in all project districts. Progress in improving learning achievement would be measured by repeat surveys in the third and sixth year of the project.
<table>
<thead>
<tr>
<th>Objective</th>
<th>Nodal Agency</th>
<th>Implement. Agency</th>
<th>Indicators</th>
<th>End of Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 DPEP Bureau would be fully functional</td>
<td>DOE</td>
<td>DPEP Bureau</td>
<td>Number of appraisals, Number of supervision missions</td>
<td>140 sub-projects annually, 140 sub-projects twice annually</td>
</tr>
<tr>
<td>1.2 School Statistics MIS computerized to district level</td>
<td>DPEP Bureau</td>
<td>NIEPA</td>
<td>Software platform adopted and installed MIS facilities equipped, Staff training, Frequency of reports, MIS system effectiveness and efficiency</td>
<td>In all DPEP states National MIS cell, 6 states, 23 districts, 50 system managers, 60 computer operators, 100 district and block supervisors, 10,000 school headmasters, Twice annually, Evaluation study in third year of project will show 85 percent accuracy of school statistics</td>
</tr>
<tr>
<td>1.3 National Training Resource Group established to support state and district training activities for:</td>
<td>DPEP Bureau</td>
<td>NCERT State institutions (SCERTs, DIETS)</td>
<td>Number and quality of training designs, Number and quality of prototype training modules, Number and quality of master trainer programs, Number of A missions to states, Number of C activities with SCE-RTs, Impact of training on teacher performance</td>
<td>6 completed, including multi-grade teaching and minimum levels of learning (MLL), 12 complete and translated into 6 regional languages, 24 completed in NCERT and SCERTs, 100 completed, 6 per state, A series of evaluation studies will show improved classroom teaching processes for more than 50% of trained teachers</td>
</tr>
<tr>
<td>1.4 DPEP Program Evaluation Research and Studies established to assess DPEP program strategies and impact and build evaluation research capacity in state institutions.</td>
<td>DPEP Bureau</td>
<td>NCERT</td>
<td>Number of research training programs, Number and quality of learning achievement studies, Multi-variate analysis of achievement data using school effectiveness models, Number and quality of evaluation and research studies, Frequency of research newsletter, Frequency of research conferences</td>
<td>24 completed, Completed in third and sixth year of project in 23 districts; studies in additional districts joining the program, Completed in first, fourth and seventh year of project, 50 commissioned and completed, Issued twice annually, 6 completed and results published</td>
</tr>
<tr>
<td>1.5 Program of Technical Assistance to States in Education Planning and Management established to develop capacity in State Institutes of Educational Management and Training to train state and district officials.</td>
<td>EP Bureau</td>
<td>NIEPA</td>
<td>Number and quality of prototype training modules, Number of trainer training programs</td>
<td>10 completed and in regional languages, including inter alia micro-planning, district program management, school supervision, state program management, 24 completed with counterpart state agencies</td>
</tr>
</tbody>
</table>
## Basic Indicators

<table>
<thead>
<tr>
<th>STATE/District</th>
<th>Beneficiaries</th>
<th>Population (000)</th>
<th>Percent Female</th>
<th>Percent SC</th>
<th>Percent ST</th>
<th>Number of Government Primary Schools</th>
<th>Enrollments Grades 1-5 (000)</th>
<th>Retention Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSAM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darrang</td>
<td></td>
<td>1229</td>
<td>48.4</td>
<td>5.0</td>
<td>17.3</td>
<td>1882</td>
<td>165.1</td>
<td>44.3</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90.9</td>
<td>44.5</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74.2</td>
<td>44.2</td>
</tr>
<tr>
<td></td>
<td>SC Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.5</td>
<td>32.8</td>
</tr>
<tr>
<td></td>
<td>SC Girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.6</td>
<td>32.8</td>
</tr>
<tr>
<td></td>
<td>ST Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.8</td>
<td>31.6</td>
</tr>
<tr>
<td></td>
<td>ST Girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.8</td>
<td>32.2</td>
</tr>
<tr>
<td>Dhubri</td>
<td></td>
<td>1332</td>
<td>48.72</td>
<td>1.3</td>
<td>2.4</td>
<td>1371</td>
<td>159.8</td>
<td>24.7</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>88.6</td>
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SC: Scheduled Caste  
ST: Scheduled Tribe
## Beneficiary Enumeration

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Achievement Test Parameters for Grade 5 Primary School Test Used in Haryana and Tamil Nadu

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## Achievement Indicators

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SC: Scheduled Caste  
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Annex 6: Sample Gender Sensitivity Indicators

Republic of Zambia, Education Rehabilitation Project, 1992

Criteria for Appraising Gender Sensitivity in Textbooks and Examination Questions

The following check-list is not exhaustive and is open to adaptation to suit the analysis of any text.

a) Summary Indicators

(i) Frequency and nature/manner of appearance of characters by gender.
(ii) Named and unnamed characters, individualized or grouped.
(iii) Work/employment images.
(iv) Socio-political images -- ownership, buying, investing, giving, sharing, receiving, etc.
(v) Family roles.
(vi) Psychological traits -- courageous, docile, innovative, dynamic, simpleton, authoritative, etc.

b) Analysis Strategies

(i) Breakdown of characters by gender and number, and count frequency of mention.
(ii) Listing of number of females mentioned by name and those nameless.
(iii) Listing of gender -- indicated common nouns and classification as female/male adult, female/male child.
(iv) Order of appearance by gender in terms of page of appearance and placement on page and sentence.
(v) Listing, categorizing and counting roles of characters identified by gender.
(vi) Determining centrality of characters by in-depth analysis of relationships and prominence patterns of presentation.
(vii) Counting pictures of female/male adults and children.
(viii) Determining role models for girls as compared with boys.
(ix) Noting method of presentation of characters by gender -- order of presentation, autonomy/dependency, as corollary or complement, respective female/male roles in the home, etc.
(x) Awareness of language and the way traditionally 'neutral' words are used, e.g., man, people, traders, farmers, etc. and how pronouns are used, e.g., The farmer and her cows.

Proposals for improving accuracy of gender roles including affirmative portrayal to counter/redress current imbalances.

(i) Increased use of neutral nouns and pronouns.
(ii) Deliberate allocation of positive roles for women and girls and increased reference to girls and women with due regard to first appearance, order of presentation and centrality of character.
(iii) Increase in the number of named female characters and in the use of feminine descriptions -- headmistress, business-women, etc. -- as appropriate.
(iv) Deliberate care in presentation of relationships between characters -- balancing the role of dependency, authority and autonomy by gender.
(v) Increased portrayal of women and girls in economic and political roles.
(vi) Deliberate increase of female role models, with particular reference to female participation and achievement in science and technology, agriculture, professions and in leadership roles.
(vii) Greater emphasis on female intellectual and professional capacities.
(viii) Depiction of males in family-related capacities and increased depiction of sharing of domestic roles.