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Monitoring and Evaluation Framework for the National Primary Curriculum

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Acronyms

BE	Basic Education
CPD	Continuous Professional Development
CPEA	Coordinating Primary Education Advisor
DEMs	District Education Managers
DFID	Department for International Development
DIAS	Department of Inspectorate and Advisory Services
DTED	Department of Teacher Education and Development
EDM	Education Divisional Manager
EGMA	Early Grade Mathematics Assessment
EGRA	Early Grade Reading Assessment
EMIS	Education Management Information Systems
ESIP	Education Sector Implementation Plan
M&E	Monitoring & Evaluation
MIE	Malawi Institute of Education
MK	Malawi Kwacha
MOEST	Ministry of Education, Science and Technology
NESP	National Education Sector Plan
NSTED	National Strategy for Teacher Education and Development
NPC	National Primary Curriculum
ODL	Open and Distance Learning
OBE	Outcomes-Based Education
PEAs	Primary Education Advisors
PCAR	Primary Curriculum and Assessment Reform
PTA	Parent Teacher Association
SACMEQ	Southern African Consortium for Monitoring Educational Quality
SEMA	Senior Education Management Advisor
TOT	Training of Trainers
TTC	Teacher Training College
USAID	US Agency for International Development

1. Introduction

The broad national goal for the primary education is “to equip learners with basic knowledge and skills to enable them to function as competent and productive citizens in a free society” (NESP 2006:3). Through the National Education Sector Plan (NESP) and Education Sector Implementation Plan (ESIP) the Ministry of Education Science and Technology (MoEST) has committed itself to the following 3 goals for primary education:

1. To improve quality and relevance of primary education;
2. To expand equitable access to primary education;
3. To improve governance and management of the primary education system.

The introduction of the National Primary Curriculum (NPC) through the Primary Curriculum and Assessment Reform (PCAR) is central to MoEST strategy for improving the quality and relevance of primary education under goal 1. MoEST introduced the National Primary Curriculum (NPC), which is based on the principles of Outcome Based Education (OBE), in 2007 beginning with standard 1. The NPC was then introduced in standards 2, 5 and 6 in 2008, in standards 3 and 7 in January 2009, and in standard 4 and 8 in December 2009.

The aim of the NPC is to promote the overall development of all learners so that each one becomes literate, numerate and has a basic understanding of science and technology. It also aims to develop learners who are responsible, morally sound, productive citizens in a democratic society and who are also equipped with skills, values and attitudes enabling them to live healthy lives, survive socially and economically and benefit from a desire for life-long learning.

Based on the principles of OBE, the NPC is expected to address concerns regarding the current low levels of learner achievement in primary schools. The NPC defines clearly what learners are to learn and how progress is to be measured based on continuous assessment of learner outcomes. The curriculum aims to meet learners’ needs through a variety of learning experiences and gives them enough time and help to meet their potential. The NPC embraces a wide range of teaching, learning and assessment methodologies.

The curriculum is intended to be implemented, in a comprehensive and integrated manner. However, support structures and systems for effective implementation of the curriculum must be defined and established, including mechanisms for: teacher support, learner support, institutional management capacity building, promoting community support for education, monitoring and evaluation and quality assurance.

Successful implementation of the new curriculum amounts to a comprehensive reform of basic education. Judgments about how successful the new curriculum is in producing the desired results will need to be based on careful monitoring and evaluation of the key elements of its implementation. Different actors in the education system, at all levels, have a stake in monitoring various aspects of NPC implementation, including the Departments of Planning, Basic Education, Inspection and Advisory Services, Teacher Education and Development, and the Malawi Institute for Education. All of these MoEST business units have responsibilities and a budget for monitoring the activities particular to their core functions and for evaluating their impact. This M&E Framework for the NPC proposes a single annual National M&E data collection activity that will track the progress of the Primary Curriculum and Assessment

Reforms (PCAR) in terms of the availability of curriculum materials, the uptake of classroom reforms by teachers, and ultimately the performance improvements of learners as a result of the reforms. Unlike other national M&E systems, the M&E for the NPC will focus on data collected at the school level. This will compliment other national education monitoring and evaluation activities that utilize national data, for example, which is generated from the EMIS.

At the same time, the M&E Framework recognizes the value of collaboration among all the directorates of the MoEST in monitoring and evaluating the primary reforms which have been developed over the past decade with inter-departmental collaboration and cooperation. The implementation strategy itself is based on the premise that: *monitoring and evaluation implemented by diverse stakeholders promotes a shared sense of responsibility and accountability for the outcomes.*

Thus, the responsibility for implementing the NPC M&E will be shared by all Directorates involved in primary education service delivery and training as well as local stakeholders such as representatives from school governing bodies, parents and other community members. The NPC M&E, under this approach, can go far in mobilizing widespread commitment to achieving the goals and objectives of the NPC and ultimately to the enhancement of early grade literacy and numeracy attainment. The technical strategy for implementation is described in more detail under the sister document, “The Implementation Strategy for NPC Monitoring and Evaluation.”

The M&E Framework for the NPC presented herein seeks to lay a firm foundation, by defining the indicators and approaches to data collection, upon which a robust and practicable system for the monitoring and evaluation of the NPC can be built. It is recognized that monitoring and evaluation is a dynamic process and that changes in, for example, the education policy context, teacher education, and continuous professional development may dictate the need for modifications and/or enhancement to the initial set of indicators and the implementation strategy.

2. Objectives of the NPC M&E Framework

The MoEST emphasizes the importance of monitoring and evaluation in the National NPC implementation strategy. The first draft of an M&E framework for the NPC was prepared by MoEST in 2008. Inter-departmental consultation taking place between August 2010 and February 2011 led to the development of a second draft which was finalized with an accompanying implementation strategy in July and August, 2011.

Objectives of the NPC Monitoring and Evaluation Framework

1. To provide information for senior managers, planners and policy developers at national and decentralized levels to inform decisions relating to issues such as resource allocation and policy refinement.
2. To strengthen accountability within the MoEST in the delivery of education services. This encompasses both upward accountability to senior management and downward accountability to schools and their communities.
3. To provide information for technical staff engaged in the development of NPC support systems and interventions. An important example here is the identification and

description of needs to be addressed by the Department of Teacher Education and Development (DTED) and its partners in both pre and in-service training of primary school teachers.

4. To provide a firm foundation upon which DIAS can develop inspection and advisory services geared to providing educators with clear feedback and support in the implementation of the NPC.
5. To make explicit the criteria for evaluation of NPC implementation so that teachers, school directors, and school governing bodies (i.e., SMCs and PTAs) can be empowered to – collectively – review school performance against clearly defined standards in teaching and learning.

The framework of indicators presented in this document provides a foundation from which all of these objectives can be addressed. The framework recognizes that there are a range of clients for monitoring and evaluation data, each with different and yet complementary informational requirements.

3. Criteria for Selecting Indicators

The following criteria were used in the selection and design of the indicators to be applied to the NPC.

- The indicators selected serve both the M&E interests of the NPC and the *wider M&E needs* of the MoEST as stated in key policy statements – NESP, ESIP and NSTED.
- Indicators are *relevant, valid and reliable* measures of the planned inputs, outputs and outcomes of the NPC.
- Indicators are clearly defined and *quantifiable* for ease of comparison.
- Indicators are *easy to understand* and so may be accessible to any stakeholders who may use them to inform decision-making and influence change.
- Indicators use *accessible data*. Relevant information will be generated routinely during NPC implementation. Maximum use will be made of existing EMIS data and data collected through the routine work of DIAS.
- Indicators present sufficient measures of progress across all three main features of NPC implementation (*materials, training and support*).
- The indicators are *realistic and achievable* such that it is practicable to gather, analyze and report on data on a regular basis

The proposed framework recognizes that the MoEST is working within tight resource constraints. It therefore attempts to identify a limited number of indicators, for which it is practical and realistic to expect MoEST to be able to collect data on routine annual basis.

The framework is designed to ensure that sufficient information is gathered to address the most fundamental questions regarding NPC implementation:

- Are the necessary inputs being supplied in adequate quantities or with sufficient frequency to ensure that teachers and schools have what they need to implement the NPC?
- Do those inputs translate into improved practice at the school and classroom level?

- Does improved practice lead to improved learning outcomes for learners?

Given that the three key categories of input for the implementation of the new curriculum (materials, training and support), and the desire to evaluate at the input, output and outcome level, Table 3.1 below outlines how this framework recommends implementation to be monitored:

Table 3:1 Framework for defining indicators

INPUTS	OUTPUTS	OUTCOMES
<p style="text-align: center;">Materials</p>	<p>Teachers’ classroom practices regularly exhibit the key features of NPC implementation e.g.:</p> <ul style="list-style-type: none"> • Preparing learners for a new lesson • Promoting active learning and interaction • Effective use of group work • Providing opportunities for guided and independent practice and applied learning • Use of individualized instruction and adapting to diverse learner ability • Use of questions and answers and positive reinforcement • Use of continuous assessment • Application of a variety of teaching methods • Promotion of critical thinking • Effective use of textbooks and other learning materials 	<p>Learners perform better on assessments of learning in core subjects:</p> <ul style="list-style-type: none"> • Mathematics • Language and literacy
<p>Adequate quantities of materials are procured and distributed to schools, including most importantly:</p> <ul style="list-style-type: none"> • NPC Syllabi & Teacher’s guides • Textbooks for learners that reflect the new curriculum 		
<p style="text-align: center;">Training</p>		
<p>Teachers receive initial orientation and additional training sufficient to allow them to understand and apply the new curriculum</p>		
<p style="text-align: center;">Support</p>		
<p>Teachers are regularly supported in the implementation of NPC by their senior teachers, head teachers and PEAs</p>		

4. Recommended Indicators

Indicator Definition

Applying the above structure (Table 3.1), this framework identifies the following indicators.

Inputs – Materials

1. Syllabi to teacher ratio (produced)

The total number of syllabi for all learning areas/subjects produced or procured by MoEST divided by the total number of primary school teachers

2. Teacher's guide to teacher ratio (produced)

The total number of teacher's guides for each learning area/subject produced or procured by MoEST divided by the total number of primary school teachers

3. % of teachers with syllabi (delivered)

The number of teachers at sample schools in possession of the syllabi for each subject divided by the total number of teachers at sample schools expressed as a percentage.

4. % of teachers with teacher's guides (delivered)

The number of teachers at sample schools in possession of the teacher's guide for each subject divided by the total number of teachers at sample schools - expressed as a percentage.

5. % of learners with a curriculum-based text (delivered)

The number of learners in selected classrooms at sample schools in possession of a curriculum-based textbook for subjects being observed divided by the total number of learners in those selected classes, expressed as a percentage.

Inputs – Training

6. % of teachers receiving initial orientation

Number of teachers interviewed in sample schools who participated in NPC orientation divided by the total number of teachers interviewed, expressed as a percentage.

7. % of teachers receiving additional training beyond the initial orientation

Number of teachers interviewed in sample schools who participated in additional NPC training divided by the total number of primary school teachers interviewed, expressed as a percentage.

Inputs – Support

8. Mean frequency of teacher support in current term

Mean frequency of NPC-related support provided to teachers in the current term (i.e joint planning, team teaching, supervision by their section heads, headteacher, PEA and/or other

support person). Teachers who are interviewed in the school will be used to calculate this mean.

Outputs

9. Percent of teachers observed to be using OBE practices

Teachers will be scored on their instructional methods according to 18 essential skills. Scores range from 1 (poor) to 4 (excellent), with 3 being the rating of “satisfactory.” Teachers obtaining an average score of 3.0 or above will be counted in the percentage calculation.

Outcomes

10. Average oral reading fluency

Number of learners in sample schools with oral reading fluency scores (correct words per minute) meeting the minimum threshold deemed adequate for their grade level divided by the total number of learners in sample schools whose oral reading fluency is evaluated, expressed as a percentage.

11. % of learners with adequate mathematics ability

Number of learners in sample schools with early grade mathematics scores that meet the minimum threshold deemed adequate for their grade level divided by the total number of learners in sample schools whose mathematics skills are evaluated, expressed as a percentage.

5. Proposals for Implementation of the Framework

For all indicators, data will be collected on a sample basis, if it is not routinely generated by the MoEST’s existing cycle of EMIS data collection. A random sample of schools and learners will allow generalized conclusions about implementation status, and will require much less data collection effort than a comprehensive, universal monitoring approach.

This Framework supports the need to collect school-based data from a representative sample of schools on an annual basis. To minimize costs and ensure a representative sample of materials, teacher and learner data, a “minimum” random sample of 120 schools, stratified according to the relative proportion of primary school learners per division, will be selected annually. A total of 480 teachers and 960 lessons will be observed across the nation. Four teachers, two lessons each, will be observed at each school. These teachers will also be interviewed in order to inform performance on Indicators 5-7 and additional qualitative inquiry will be conducted to enrich the teacher data. A brief “snapshot” assessment of Chichewa and mathematics performance will be administered to a total of 2400 students across the nation (In each school, 20 randomly selected students will be tested on each of two subjects.) This sampling strategy provides a minimum sample that ensures a representative sample and an acceptable margin of error for the nation overall. This could be increased depending on the availability of budget and human resources.

A total of 15 teams will be responsible for collecting the data, scoring and compiling teacher and learner data, and summarizing information from the materials review and teacher interviews.

Each team will consist of six persons, as follows: 1 National Supervisor (e.g., DIAS Official or MIE staff); 1 SEMA; 1 Coordinating PEA; 1 Neighboring PEA; 1 Local PEA; and 1 TTC Field Supervisor.

The cycle of implementation will take place over the course of approximately three months out of the year and include the following components: implementation planning and budgeting; preparation and printing of instruments; training of the field teams; data collection; analysis and reporting; and performance review. This cycle according to each component is presented below.

Implementation Component	Responsible Party(s)	Timeline
Planning and Budgeting	National DIAS Officials + selected MIE Representative	Last week in September
Preparation and Printing of Materials	MIE	Oct 1 – Oct 15
TOT National Training & Division Training	DIAS Officials and MIE lead TOT SEMA lead Division Training	Oct 16 – Oct 31
School-based Data Collection	15 Field Team (see above)	Nov 1 – Nov 23
Data Entry, Analysis and Reporting	Senior DIAS advisors + selected MIE Representatives	Nov 23 – Dec 15
Performance Reviews/Policy Dialogue	Cross MoEST reviews, especially at Division, District and School: Led by various parties depending on level, from National DIAS team and MIE to SEMAs at Division, Coordinating PEA at District and Local PEAs at school level	Jan 15 – Jan 30

Potential Challenges

Several potential challenges which must be overcome can be identified at the outset:

- To ensure that sufficient human resources are mobilized by MoEST. Annex1 shows that the following number of days of time must be set aside and ring-fenced:
 - A combined total of 84 days time of DIAS Officers at national level, for developing instruments, training SEMAs and CPEAs, data analysis and report writing
 - A combined total of 704 days time of SEMAs and CPEAs who will undertake data collection
 - A total of 80 days of data entry time
- To ensure that sufficient financial resources are available. The Implementation Strategy includes the cost breakdown of the annual M&E data collection activity, including all of the components given above. The total annual cost was estimated to be MK **8,077,480**.
- To ensure that sufficient MoEST vehicles are deployed to support the task. Data collection alone will demand 520 days of vehicle use for classroom observation and an additional 60 days for EGRA EGMA. Vehicles may be drawn from either divisional or district level, but this still implies the availability of a vehicle for more than 18 days for each of 32 districts.

- To ensure quality and consistency of data collection from classroom observation. This will require that instruments are rigorously piloted to ensure inter-observer reliability. It will also require that sufficient effort and resources are mobilized to train participating officers in the use of the instruments prior to going to the field.
- To ensure that the specific technical skills required administering EGRA and EGMA are transferred to the MoEST including: sample design, administering the tests, management of fieldwork, data capture and analysis. This will necessitate the delivery of at least 5 day of training to each of 60 MoEST officers.

6. Conclusion

The indicators and procedures recommended in this M&E Framework report produced and prepared under USAID Funded MTPDS Program, provide an essential foundation for the development of a comprehensive strategy for ongoing monitoring and evaluation of NPC implementation. The framework attempts to identify a limited number of indicators, for which it is practical and realistic to expect MoEST to be able to collect data on an annual routine basis, in order that a regular flow of data is maintained to inform resource allocation decisions and to ensure accountability for service delivery, under objectives 1 and 2 listed above in section 2.

However this framework, by itself, does not offer a comprehensive response to all of the 5 objectives listed in section 2. This will require an additional complementary effort aimed at to generate the sort of detailed qualitative information required to:

- Inform development of the quality of inputs including learning materials, training programs and NPC support systems
- Inform development of school inspection and self-evaluation procedures.

This necessitates additional research work aimed at gathering qualitative data that investigate, for example, the training needs of teachers or the strengths and weaknesses of existing teacher training and professional development systems. The consultation meetings through which this framework was developed generated a diverse list of such NPC M & E questions that could be prioritized and added selectively to the annual school-based monitoring activity.

An illustrative set of research questions that may deepen the evaluation of the curriculum and assessment reforms are provided below.

Additional work is also required to align the framework with the school inspection methods used by DIAS. The most fundamental questions that anyone can ask about a school are:

- ‘How effective is this school in delivering the curriculum?’ and
- ‘How effective is this school in achieving learner outcomes?’

These questions are at the heart of this proposed framework. However achieving an accurate and balanced evaluation of school performance during a school inspection requires more comprehensive range of information. A balanced approach to inspection must encompass a broader spectrum of aspects of school life including management, school ethos, community relations, and participatory governance structures. Methods must also be developed for feeding

this information back to schools and their communities in a manner which is easily understandable and inspires community action for school improvement.

The NPC is at the heart of the MoEST's strategy for improving the quality and relevance of primary education - as laid out in NESP and ESIP. Evaluating NPC implementation must therefore be a key element of MoEST's overarching M&E strategy.

Reflecting on the roll-out of the new curriculum, MoEST proposed additional augmentative research focusing on the following illustrative questions. These could be prioritized and added to the school-based survey activities if budget and human resources permit.

Questions concerning teacher orientation, training and support:

- Have teachers had any/enough orientation and training?
- What training (pre-service and in-service) best enables teachers to understand the NPC?
- What training enables teachers to design/deliver instruction within the NPC framework?
- Are TTCs preparing teachers to implement the new curriculum? In particular, are they introducing and training teachers in continuous assessment?
- Are teachers being prepared to face the context in which they work (i.e., large classes)?
- What training materials and training modalities do teachers find most helpful?
- Have PEAs been adequately trained in the new curriculum?
- Were TTC tutors adequately oriented to and trained in the new curriculum?
- How successful have PEAs been at orienting/supporting teachers?
- Are ODL modules appropriately based on the new curriculum?
- Are teacher trainee exams evaluating teacher knowledge and understanding of the new curriculum?

Questions concerning changed instruction and application of the new curriculum:

- Are the instructional practices associated with the OBE curriculum being applied in classrooms?
- What problems are teachers facing in implementing the new curriculum?
- How do teachers handle the learner centered approach in large classrooms?
- How useful/effective is the Standard 1 introduction to school life curriculum?
- What do teachers do when they encounter problems or have a question?
- Are teachers relating the old curriculum and materials to the new curriculum and, if so, how?
- Is the whole language approach that is advocated in NPC appropriate for Malawi?

Questions concerning materials:

- Are books making it to schools in adequate numbers to achieve the target ratio (1:1)?
- Are materials well-developed and is their content well-treated?
- How well are books "performing" in classrooms? Do teachers and learners find them easy to use and understand?
- Do teachers understand the orientation manuals?
- What curricular materials do teachers find most useful?
- What training/support best enables teachers to make use of those materials?

Questions concerning continuous assessment:

- Do teachers understand continuous assessment and are they able to correctly apply it in their classrooms?
- Is the NPC continuous assessment based on realistic expectations for what teachers can do, especially in extremely large classes?

Questions concerning dissemination of the new curriculum to communities:

- What information do communities find most useful in understanding the NPC?
- What activities and information best inform communities about early grade literacy and numeracy objectives and enable them to play active roles in supporting their schools?

Questions concerning the impact on measures of learning:

- Is implementation of NPC leading to improved teaching and learning?
- Is Malawi performing better on SACMEQ?

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