

# SPRINT

School Programme of In-service for the Term



Republic of Zambia  
Ministry of Education

## School-Based Continuing Professional Development (SBCPD) Through Lesson Study

Implementation Guidelines  
3<sup>rd</sup> Edition

September 2007



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**Japan International Cooperation Agency (JICA)**

## **Acknowledgement**

This write up is a product of the experiences that have been gained through the implementation of lesson study activities of teachers under SMASTE-CPD program in Central Province as a pilot. The workshops conducted under the program have been valuable platforms where sharing of experiences took place.

In this context, utmost gratitude must be given to the teachers at schools who are continuously having lesson study as their CPDs, the facilitator, HOSs, HODs, School Heads, Deputy Heads and Education Managers for the support and motivation rendered to sustain the program.

To you all as key and strategic stakeholders, we say thank you.


I will be failing if I don't pay tribute to the members of the SMASTE Joint Technical Committee spearheading the implementation and recording the observation while in the field and recording the shared experiences during the Stakeholders' Workshops.

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Last but not the least, I wish to extend our gratitude to JICA through the Technical Adviser for the Technical and Professional support rendered during the development of the School-Based CPD Implementation Guidelines.

The Ministry of Education is indebted to you all for the realization of this book.



  
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Director for Teacher Education and Specialized Services (TESS)  
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## **Preface**

Teacher Education is one of the core programmes in Education and Skills Development Sector stated in our “Fifth National Development Plan (FNDP) 2006-2010”, and strengthening the system for Continuing Professional Development (CPD) is described as one of the key objectives for the development of our education (Item 16.5).

The Ministry of Education has taken the following measures to ensure that CPD of teachers is enhanced. This realisation comes from the fact that like any other professionals, teachers have a responsibility to themselves and their professions to deepen their knowledge extend their professional skills and keep themselves up to date on major developments affecting their performances. In order for the teachers to develop professionally, a conducive learning environment must be created. This is precisely why the school-based CPD structures have been established and content developed.

School-Based Continuing Professional Development (SBCPD) of teachers / educators has been institutionalised in Basic and High schools as well as Colleges of Education. It is now a regular feature in our school / college curriculum. The Ministry of Education has further developed guidelines to facilitate implementation of the school-based programmes. The Ministry has recognised the roles of various stakeholders that are keys to the successful implementation of the CPD programmes starting with the national level responsible for giving policy direction down to the school / college head responsible for managing the implementation. The Ministry has further recognised the supportive role of Teachers Resource Centres as Learning Stations.


The Ministry is committed to strengthening and consolidating the school / college based CPD programmes. The initiative in Central Province on SMASTE School-Based CPD programme is fully supported, because its objective is to improve teaching and learning at classroom by focusing not only on the lesson preparations through Lesson Study but also most importantly takes cognizant of the supportive role to be played by education managers and in-service co-ordinators at various levels.

In this point of view, we realize that school / college based CPD firmly supports our aims and strategies. The concept of the program is quite simple and clear. It can be conducted in the existing framework of School Program of In-service for the Term (SPRINT) and maximize the use of our existing resources to support continuing studies of teachers at school level.

Ministry of Education, therefore, urges the users of this document to take advantage of the structures and frameworks that have been established as “Implementation Guidelines”. The approach used in the program is the “Lesson Study”, which shall be appealing to all the teachers who are committed to their professional development. It is strongly recommended for the teachers and school managers to use this document for their effective management of school-based CPD activities. I trust that it will be a valuable addition to the available materials on strengthening teaching and learning at our classrooms.

At this moment in time, I would like to express our sincere gratitude to Japan International Cooperation Agency (JICA) for their technical co-operation to this program.



  
Lilian E.L Kapulu (Mrs)  
Permanent Secretary  
**Ministry of Education**

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**Acronyms**

CIPP	Context, Input, Process, Products
CPD	Continuing Professional Development
DEBS	District Education Board Secretary
DESO	District Education Standards Officer
DEST	District Education Support Team
DRC	District Resource Centre
DRCC	District Resource Centre Coordinator
EO-TED	Education Officer, Teacher Education Department
ESO	Education Standards Officer
FW	Facilitators' workshop
GRACE	Grade Meeting at Resource Centre
HIM	Headteacher's In-service Meeting
HOD	Head of Department
HOS	Head of Section
ISTC	In Service Training Centre
JOCV	Japan Overseas Cooperation Volunteers
JTC	Joint Technical Committee
PEO	Provincial Education Officer
PESO	Principal Education Standards Officer
PEST	Provincial Education Support Team
PRC	Provincial Resource Centre
PRCC	Provincial Resource Centre Coordinator
PTA	Parents Teachers Association
SESO	Senior Education Standards Officer
SIMON	School In-service and Monitoring
SMARC	Subject Meeting at Resource Centre
SMASE	Strengthening of Mathematics and Science in Education
SMASTE	Strengthening of Mathematics, Science and Technology Education
SPRINT	School Program of In-service for the Term
SW	Stakeholders' Workshop
TED	Teacher Education Department
TGM	Teachers Group Meeting
WECSA	West, East, Central and Southern Africa
ZAME	Zambia Association for Mathematics Education
ZASE	Zambia Association for Science Education
ZATE	Zambia Association for Technology Education
ZEST	Zone Education Support Team
ZIC	Zone In-service Coordinator
ZRC	Zone Resource Centre





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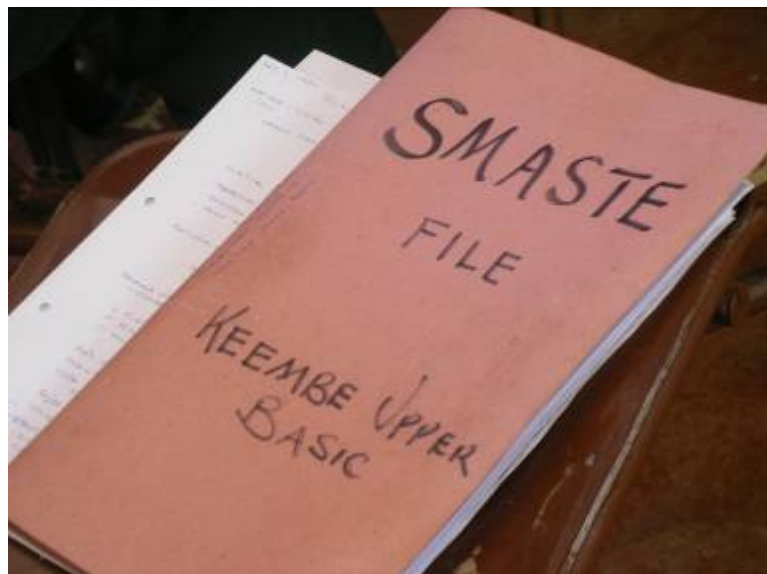
### rofessionalism:

**Teaching should be regarded as a profession: it is a form of public service which requires of teachers expert knowledge and specialized skills, acquired and maintained through rigorous and continuing study; it also calls for a sense of personal and corporate responsibility for the education and welfare of the pupils in their charge.”**

The 1966 ILO/UNESCO Recommendation concerning the Status of Teachers  
(Provision III.6)

# PART II

## **IMPLEMENTATION GUIDELINES**





## 1. What is School-Based CPD through Lesson Study

Like other professionals, teachers have a responsibility, to themselves and to their own profession, to deepen their knowledge, extend their professional skills, and keep themselves up-to-date on major developments affecting their profession especially in areas of pedagogy and subject content.

Teaching is a learned and a learning profession, and every teacher should also be a learner. Realising that teachers needed to continuously improve on their teaching methodologies and content delivery and the fact that it is not possible to send all teachers for in-service training in the colleges; the Zambian government has put in place measures to enhance Continuing Professional Development (CPD).

“Educating Our Future”, a policy document of the Ministry of Education suggests strategic approaches for In-service teacher education (Ministry of Education, 1996, p.116) such as:

- Programs which are demand driven, responding to identified needs
- Programs which focus on school needs and are based in Schools or Resource Centres
- Cost-effective programs which enable large numbers of teachers to have opportunities for learning
- Programs which include not only studies on subject contents but also methodologies, use of materials or way of management in classrooms

Based on these approaches, School Program of In-service for the Term (SPRINT) was inaugurated by Teacher Education Department (TED) in the Ministry of Education as a framework for life long learning of teachers both in basic and high schools. However, not all the schools have implemented stable and effective meetings for teachers. Even the schools which have regularly conducted CPD meetings have been seeking for better ways of improving quality of teacher group or departmental meetings. School-Based Continuing Professional Development (SBCPD) is now introduced to upper-basic and high school to ensure and enhance learning activities of teachers.

The purpose of the program is to improve teaching and learning activities in a classroom through lesson study (refer to figure 1) by strengthening CPD activities of all subjects / learning areas at school and college level.

***School-Based CPD aims to Improve Teaching and Learning Activities in Classroom through Lesson Study by Strengthening CPD Activities of all subject / learning areas at school and college Level.***

This program has been implemented in Central Province since 2006 as Strengthening of Mathematics, Science and Technology Education – Continuing Professional Development Program (SMASTE-CPD Program). As its effectiveness on the improvement of teaching skills of teachers and sustainability as a framework

of School-Based CPD were recognized, the focus of the program is now extended to all subjects and to all the provinces in the country by the Ministry of Education.

## 1.1 Framework of School-Based CPD through Lesson Study

***School-Based CPD fully uses Existing Framework and Resources.***

The majority of classroom teachers are already loaded by several activities within the school and with programs conducted by the Ministry and other organizations. Introducing a new system or framework of teacher education may also require a lot of additional tasks to the Ministry and all stakeholders. Considering this, it is advisable to utilize the existing framework of teacher education and to strengthen it, so that concentration is on the improvement of the teaching profession.

Fortunately, we have SPRINT-CPD as a system that enables all the teachers to have a chance for improving their knowledge and skills for teaching continuously at school level. School-Based CPD uses Teachers Group Meeting (TGM) and Headteachers' In-service Meeting (HIM) in SPRINT as a venue of learning of teachers. Grade Meeting at Resource Centre (GRACE) and Subject Meeting at Resource Centre (SMARC) are also considered as venues of workshops for stakeholders and facilitators. These types of meetings take place regularly throughout a year and monitored by School In-service and Monitoring (SIMON) program. Teachers will be assessed on their performance based on their key result areas which will include among other things their participation during school based CPDs. The School Based CPD also works with Subject Association as stakeholder for CPD activities.

***Teachers will be assessed on their performance based on their participation in School-Based CPDs.***

## 1.2 Venue for Learning

***School-Based CPD activities shall be school based and always put its Focus on the Classroom.***

School-Based CPD targets a school as a venue of teacher professional development. A school is a place, where teaching and learning always take place. It is believed that the improvements are devised within the classroom. It is in the classroom where teachers are experiencing problems and concerns on teaching, and where educators should always focus their interventions on. Therefore, the venue for CPD activities should be at school with special focus on the classroom activities.

The Ministry of Education in Zambia has a clear policy for CPD as mentioned in the Educating Our Future (1996) which encourages INSET for teachers to be school based. It is from this policy document that all the levels of education provision are

encouraged to provide necessary CPD for its human resource. Under School-Based CPD, each school is requested to have Teacher Group Meetings (TGM) and Headteachers' In-service Meetings (HIM) regularly initiated by the Head of Department / Senior Teacher with the assistance of facilitators. The role of the School Head is that of creating a conducive teaching and learning environment, while the Deputy Head is responsible for the day to day teaching and, therefore, in-charge of school based CPDs. Thus, the role of the administration is very crucial in the planning and resource mobilization for the school based CPDs.

The main actors in the meetings are the teachers. They are free to discuss their concerns on teaching and to exchange knowledge and skills in the groups. However, the experts from various educational institutions could be invited occasionally as observers.

***Teachers are main actors in School-Based CPD.***

### 1.3 Learning Module - "Lesson Study"

The learning module in Zambia will be those which will encourage learner centred teaching and learning as much as possible. The School Based CPD shall be based on the '**Lesson Study**' approach which has been implemented for a long time in some countries such as Japan, America, Australia, Philippines and Malaysia and has been found to be effective for improving classroom teaching and sustainable as a teacher education CPD program.

Lesson study is a problem solving process of teacher professional development practiced in Japan from as far back as 1960 and is still being used in the Japanese schools. In this approach, small groups of teachers of less than 10 would meet regularly at least once a month to plan, implement, evaluate and revise lessons collaboratively. "Educating Our Future", a policy document of the Ministry of Education suggests strategic approaches on pedagogy through the Inspectorate, Teacher Training Colleges, Resource Centres as well as school-based activities. The Ministry will promote a variety of teaching strategies with focus on stimulating learning through inquiry, guided-discovery, problem-solving, application, and similar activity-based teaching and learning. It is expected that CPD meetings will be organized by the teachers through the existing structure of authority within the school but mostly by teachers at school level or district level to improve their teaching competencies. In the lesson study process, teachers will collaborate to share, discuss and analyze teacher's teaching and students learning while working together to design a lesson plan.

***School-Based CPD adopts Lesson Study Approach.***

In the Lesson study approach, one of the teachers in a school is requested to have demonstration lesson using pupils, while other members observe with specific tasks for analyzing the lesson. After the demonstration, a discussion on the lesson will be held to improve skills of members on conducting better lesson with some

input from facilitators and other observers including pupils' evaluation on the lesson. For every school term, a specific theme on key factors and components for effective lesson will be given to schools.

Lesson study usually follows eight (8) steps of activities which forms a cycle described below (Chiew & Lim, 2005; Stigler & Hiebert, 1999). These activities have been described further at Section 2.4.5. in this book.

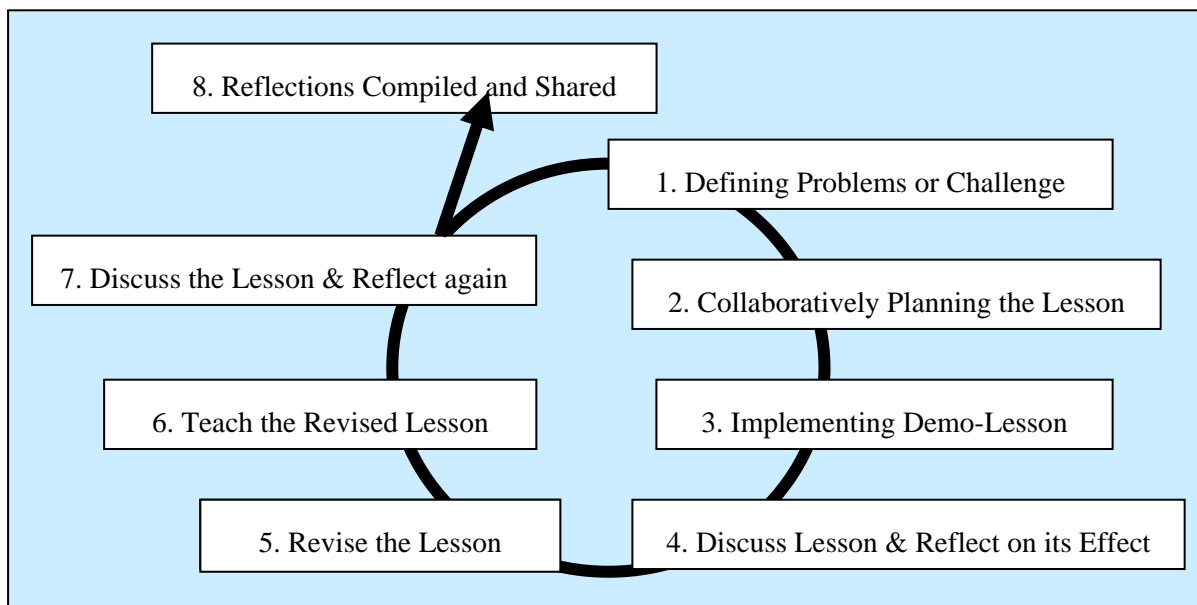


Figure 1: The Cycle of Lesson Study at School

1. *Defining the Problem or Challenge*

As earlier stated Lesson Study is an approach which uses problem solving approach. Therefore it is very important in this approach to define the problem that will motivate and direct the work of the lesson study group. This will allow teachers to voice out their challenges they have encountered during their teaching career and this marks the beginning of solving the problem. The problems to be identified will vary from general to specific; others will have to deal with Ministry of Education policy, directives or curriculum and assessment issues to mention but a few.

2. *Collaboratively Planning the Lesson*

In this session teachers will come together to plan for a lesson based on the identified needs in a collaborative nature. The teachers will often start planning the lesson by looking at the available resources such as reference books and articles produced by other teachers who have attempted to solve similar problems. Together they will develop and own the lesson plan

3. *Implementing Demo-Lesson (Seeing a Lesson Plan being implemented in a class while others observe)*

Using agreed criteria, a teacher is selected to implement the lesson in a classroom situation while other teachers observe and evaluate the lesson

based on specific items of concern. At this stage education standard officers as well as education experts will come in and observe where applicable together with the facilitators for a particular zone. The Heads as well as Deputy heads are encouraged to be in attendance.

4. *Discuss the Lesson and Reflect on its Effects*

After the lesson the teachers will meet to discuss and reflection on the lesson. The discussion will mostly allow the teacher who was teaching to give his/her own critique of the lesson then followed by the other observers. The observers will share their observations. What is important at this stage is that the critique should not be centred on the teacher but of the lesson and suggests the improvements.

5. *Revise the Lesson*

Together as a team, the lesson plan is revised based on the critique and reflections. Changes and adjustments are made and a new lesson plan is made ready for presentation to another class by the same teacher.

6. *Teach the Revised Lesson*

The actual situation in Zambia is that one teacher teaches the same subject to more than one class in a particular school. This therefore gives us an advantage to repeat the same lesson in a different class. The lesson which was discussed together with reflections by the group is now taught by the same teacher but in a different class.

7. *Discuss the Lesson and Reflect on its Effect again*

It is very important that another discussion on the lesson could be done so that an observation of a change in the way the lesson is implemented could be observed even further amendments could be made again. However even a minimal improvement should be appreciated. At this point the teachers can adopt such type of lesson plan for future use. If chance is available this trial of the lesson could be done although this is optional.

8. *Reflection Compiled and Shared (Teachers share reflection on new version of the lesson)*

At this moment progress report by respective stakeholders such as Teachers HODs, HOS, Facilitators, Heads and Standards Officers will meet at a common place such as a resource centre to exchange experiences from various schools. This will also allow other Districts to meet and share experiences at annual conferences for Subject Associations, SMASE-WECSA and SMASTE. Further development of such materials be documented and published in Journals or newsletters as alternatives which have worked.

The framework for conducting these lesson study activities in SPRINT is shown in Figure 2 on the next page.

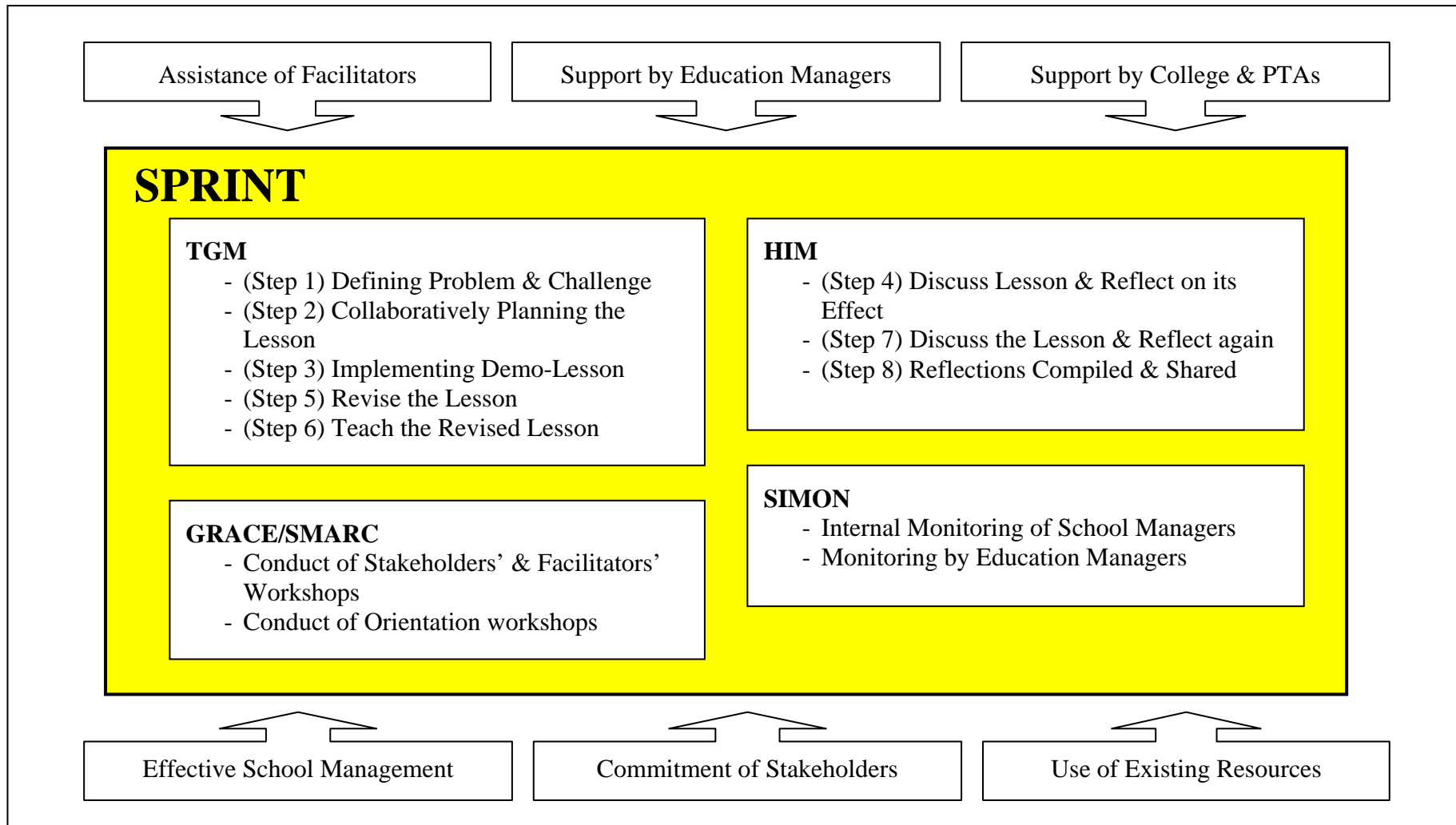


Figure 2: Framework of School-Based CPD through Lesson Study



## 2. Detailed Framework of the Program

### 2.1 Basic Design of Core Activities

As stated in 1.1 School-Based CPD uses components in SPRINT as venues and system of learning. However, its main learning areas are only three namely:

- 1) Stakeholders' Workshop
- 2) Facilitators' Workshops
- 3) Cluster or School-Based CPD activities

Stakeholders' Workshops and Facilitators' Workshops take place at suitable venues preferably schools or colleges during every school holiday, while school-based CPD activities are conducted regularly in respective schools during school terms.

The workshops and School-based CPDs, which are conducted in the following school term of the workshops, form a basic INSET cycle of learning module (Refer to Part II, Implementation in the Zone and School). As shown in Figure 3, three (3) cycles can be conducted in a year. Only in the last cycles of each year will there be no school-based CPD in November because of the National Examinations.

Six (6) cycles in two (2) years are considered as one (1) learning module under School-Based CPD.

***The main activities in School-Based CPD are  
"Stakeholders' Workshop", "Facilitators' Workshop"  
and "School-based CPD activities"***

Venue	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.
<b>1<sup>st</sup> year</b>												
Stakeholders' Workshop	1				2				3			
Facilitators Workshop	1				2				3			
Cluster or School-based CPD (TGM)		1-1	1-2	1-3		2-1	2-2	2-3		3-1	3-2	
<b>2<sup>nd</sup> year</b>												
Stakeholders' Workshop	4				5				6			
Facilitators Workshop	4				5				6			
Cluster or School-based CPD (TGM)		4-1	4-2	4-3		5-1	5-2	5-3		6-1	6-2	

Figure 3: Time-table for Workshops and School-based CPD  
(e.g.: "2-3" in the table shows that schools have the 3<sup>rd</sup> cycle of lesson study in the 2<sup>nd</sup> school term.)

In order to have a harmonized studying system, it is recommended that two-year Learning Module would have a specific theme for learning. For example, in the Central Province, the module theme for the period from 2006 to 2007 was “**Key Factors and Components for Effective Science Lesson in Zambia**”.

Within the main learning module, it is also recommended that each cycle would have a sub theme so as to guide and concentrate the efforts on one particular area for the term. The sub theme or topic of discussion for the first school term should be “How to conduct a lesson study in a school”. Sub themes from 2<sup>nd</sup> to 6<sup>th</sup> cycles shall be considered on the needs of teachers and result of technical on the teachers survey (Refer to sample analysis in Part III).

## 2.2 Stakeholders’ Workshop

***Stakeholders’ Workshop is held at the end of the term during every school holiday.***

As stated in 2-1, one of the activities to be done will be a Stakeholders’ Workshop at resource centres or schools. This workshop is planned and held at provincial or district level according to the strategy made in

respective province. Facilitators, Heads of Department, Senior Teachers, Deputy Heads and Heads are requested to participate in the workshop which is facilitated and monitored by PEO’s and DEBS office. The objectives, when, where, duration and proposed activities for this workshop are stated as below:

### 2.2.1 Workshop Objectives

#### For All Stakeholders:

- To make stakeholders aware of the framework for the programme and roles to be played.
- To exchange information and experiences on the implementation of the programme to have better practices for improvement
- To address needy areas.
- To compare their school performance with others.
- To learn new knowledge.
- To acquire new skills.

#### For Facilitators:

- To strengthen the facilitation skills of facilitators supporting school based CPD activities
- To make facilitators aware of the termly topic focus for school based CPD
- To consolidate progress report on facilitation of school-based CPD



**For Deputy Head:**

- To strengthen their knowledge and skills on the implementation of school-based CPD activities
- To consolidate progress report on school-based CPD activities

**For Headteachers:**

- To strengthen their knowledge and skills on the management of schools including teacher professional development through school-based CPD activities
- To exchange information and experiences on school management
- To consolidate school development report

**2.2.2 When**

The school calendar has a lot of activities. Therefore it will be of much help if a proper time schedule is allocated to stakeholders' workshop without causing an imbalance on the day to day activities of a stakeholder in the education system. Since we need to call stakeholders to one venue for this workshop, we therefore suggest in our approach to conduct such a workshop during the school holiday and these will be in April, August, and December. These days will vary with the education calendar should there be a change, the dates will also change accordingly.

**2.2.3 Where**

The Zambian government has constructed 3 types of resource centres in the country namely Provincial Resource Centre (PRC) one or two in each province, District Resource Centre (DRC) in each district and many Zone Resource Centre (ZRC) geographically located to be as close to a teacher as possible. It is such venues that we hope to use for facilitation and school management workshops. However, due to large numbers of participants, venues such as colleges of education or schools could be convenient, instead of a resource centres. Having workshops at schools contributes to maximize our existing resources and to save unnecessary costs for renting conference rooms and equipment from guest houses or hotels. Hosting workshops shall also provide, to the schools, the opportunity to review its management and teamwork of school staff.

***It is recommended to have Workshops at our Schools in terms of cost-effectiveness and maximizing resources.***



## 2.2.4 Duration

The duration of such a workshop will be on average of about 2 – 3 days. However, this is just a suggested approach, which could be adjusted, to suit the program needs.

## 2.2.5 Proposed Program Design for Stakeholders' Workshop

Day	Activity	Participants	Facilitators
1	Plenary: <i>Orientation of Cycles and Modules in School-Based CPD</i>	Facilitators, Heads HoDs, Senior Teachers and Deputy Heads DEST and ZEST	PEST
2	Group session: <i>Input on facilitation skills</i>	Facilitators, HoDs, Senior Teachers and Deputy Heads, DEST and ZEST	PEST
	Group session: <i>Foundation of school management</i>	Heads	PEST
3	Group session: <i>Demonstration of facilitation (Practice of Lesson Study)</i>	Facilitators, HoDs, Senior Teachers and Deputy Heads, DEST and ZEST	PEST
	Group session: <i>Management on School-Based CPD</i>	Heads	PEST

*Note: 1. During the implementation stage, the small group sessions conducted in parallel are needed to be considered when conducting the workshop so that there is effective participation.  
2. In case that the workshop is held at district level, PEO's office will monitor and provide support to the DEST.*

## 2.3 Facilitators' Workshop



As stated in 2-1, Facilitators' Workshop is one of the learning areas in the program. This workshop is held at provincial, district or zone level according to the strategy made in respective province and district. Teachers and education officers working as facilitators under the program are expected to attend. The objectives, when, where, duration and proposed activities for this workshop are stated as

below. This is a venue for facilitators to have additional inputs on their skills of facilitation and ideas for conducting practical works in schools.

### 2.3.1 Workshop Objectives

#### For Facilitators:

- To strengthen the facilitation skills of facilitators supporting school-based CPD activities
- To make facilitators aware of the termly topic focus for school-based CPD
- To have content mastery and idea on practical works in each subject
- To develop a plan of action for presentation to stakeholders during the stakeholders workshop
- To consolidate progress report on facilitation of school-based CPD

### 2.3.2 When

The school calendar has a lot of activities. Therefore, it will be of much help if a proper time schedule is allocated to facilitators' workshop without causing an imbalance on the day to day activities of facilitators in the education system. Since we need to call all facilitators to one venue for this workshop, we therefore suggest in our approach to conduct such a workshop during the school holiday and these will be in April, August, and December. These days will vary with the education calendar should there be a change, the dates will also change accordingly.

***Facilitators' Workshop is also held at the end of the term during every school holiday.***

### 2.3.3 Where

These are meetings with a special focus – developing and sharpening skills and content mastery and in line with the framework they are GRACE/SMARC meetings. Since the facilitators learn practical works in their subjects, **a school or college** will be used for this type of workshop. It is such venues that we hope to use for facilitation and school management workshops.

### 2.3.4 Duration

The duration of such a workshop will be on average of about 2 days. However this is just a suggested approach, which could be adjusted, to suit the program needs



### 2.3.5 Proposed Program Design for Facilitators' Workshop

Day	Activity	Participants	Resource Person
1	Plenary: <i>Reports from facilitators on the implementation of School Based CPD</i>	HoDs, HoSs, A/DRCC, DRCCs, Senior Teachers and Teachers	PEST, DEST Identified Persons (e.g. JOCV, College Lecturers etc.)
	Group sessions: <i>Inputs on Practical Works and idea on improvising teaching materials</i>	HoDs, HoSs, A/DRCC, DRCCs, Senior Teachers and Teachers	PEST, DEST Identified Persons (e.g. JOCV, College Lecturers etc.)
2	Group sessions: <i>Inputs on Practical Works and idea on improvising teaching materials</i>	HoDs, HoSs, A/DRCC, DRCCs, Senior Teachers and Teachers	PEST, DEST Identified Persons (e.g. JOCV, College Lecturers etc.)
	District Planning for the next term	Same as above	DESO, DRCC, School Facilitators

### 2.4 School-Based CPD Meetings (HIM, TGM or Departmental Meeting)

Another important and main activity of the program will be a school-based CPD in form of:

1. The Headteacher's In-service Meeting (HIM)
2. The Teachers' Group Meeting (TGM) or departmental meeting.

As outlined under 2-1 Basic Design of Core Activities, this will take place soon after the stakeholders' workshop following the agreed cycles. The objectives, when, where, duration and proposed activities for such meetings will be as stated below:

***Teachers Meeting as school-based CPD is held regularly at school.***

#### 2.4.1 School Based CPD Objectives

- To review and plan the term's work
- To improve teaching/learning activities in classroom through lesson study
- To create a sense of reflection in a teacher before, during and after the lesson
- To strengthen the network of teachers both within and outside of the school (cluster or satellite schools)
- To monitor and evaluate the CPD activities

#### 2.4.2 When

As stated, the school calendar has a lot of activities therefore it will be of much help if a proper time schedule is allocated to TGMs without causing an in-balance on



the day to day activities of a teacher in the education system. We therefore suggest in our approach to conduct such TGMs during the school day outside teaching time and conduct lesson demonstrations during lesson time so that the developed lesson be tried in an actual class. The Zambian teacher has more than one class which he or she teaches the same subject. It is, therefore, hoped that the revised lesson could be tried for the same grade but a different class. In an event that the school has only one class, it can be split into two groups. This will not cause an in balance in the coverage of the syllabus but contribute to the quality of lesson provision hence achieving the desired task of quality education provision. This will take place at least once a month within which to conduct the lesson study cycle or three times per term at regular intervals.

### 2.4.3 Where



The movement of teachers from the school to far away places has not proved to be cost effective as most of the time the teacher will not be attending to the needs of the pupils. This has been a concern of the Zambian Government as such types of INSET have had no sustainability and retention of good practices. In order to come up with a cost effective and sustainable INSET with long term

positive results we are suggesting that this type of INSET be conducted as close to the learner as possible such as in a school (in class, department), zone centre or cluster. Moreover the pupils and administrators will be seeing the direct benefits of INSET for their teachers.

The Zambian government has constructed resource centres through out the country which are as close to the schools as possible. These are Provincial Resource Centres, District Resource Centres, and Zone Resource Centres. Where applicable school resource rooms as well as departments could be used. These will greatly help in the provision of meeting places making the conduction of school-based INSET cost effective and sustainable. Above all the needs for the teachers will be localized and addressed based on the geographical needs of each school or resource centre. Most of the Upper Basic Schools have less number of teachers. In some cases, you may find one teacher for certain subject in a school, therefore, for upper-basic schools; the cluster approach shall be used as a way of conducting teacher group meeting.

***N.B.: School Heads should consider the possibility of creating one day in a term or year and designate it as a CPD Day that will be characterised by Lesson Demonstrations and discussions. This would be ideal for the Zone / cluster meetings.***

#### 2.4.4 Duration

Since School-Based CPD adopts a bottom up approach, the respective schools will decide the duration of the INSET based on the needs and complexity of the problem they are trying to address. However, a meeting and discussion of the teachers should not be less than an hour.

#### 2.4.5 How

In 1-3, under Learning Module, it is suggested that the main approach will be that of lesson study which has the eight (8) steps. It is therefore important to consider these steps as TGM or HIM conducted in schools. The following activities shall be conducted in respective schools, although the activities here shall be arranged and modified based on the needs of teachers and schedule of other school activities.

**School-Based CPD follows  
8 steps for Lesson Study.**

##### **Step 1: Defining the Problem or Challenge (1-2 hours meeting)**

- a. Have a meeting of all teachers for your target subject (including seconded teachers) in a school and discuss problems/concerns and challenges in teaching specific subject, especially bearing in mind the following questions;
  - Which topic is difficult to teach?
  - What is the problem in teaching such topic?
  - What points or what methods does the teacher want to learn?
  - What are the suggested solutions made by the teacher?

*Note: The ideal total number of teachers in one TGM is anticipated to be 5 to 15. Schools with large numbers of teachers may have two groups of teachers for CPD. Schools, which only have few teachers for certain subject, are requested to use a cluster or zonal approach to have their CPD meeting.*

- b. With the initiative of HOD/HOS, make a termly plan for lesson study based on these problems and suggested solutions. Then the following matters should be defined.
  - Schedule of Demonstration Lessons and Discussions during the school term
  - Demonstration Teacher
  - Topic for Demonstration
  - Classes to be used for Demonstration Lesson and Revised Lesson respectively
  - Tasks for respective teachers in conducting lesson study (e.g. chair person, secretary etc.)

### **Step 2: Collaboratively Planning the Lesson (2-3 days)**

- a. Ask demonstration teacher or group of teachers to prepare initial lesson plan
- b. Have a meeting of all teachers for specific subject to discuss the initially prepared lesson plan and give suggestions for improvement
- c. Demonstration teacher or group of teachers finalize lesson plan for demonstration
- d. Define the points of observation and allocate observation task to each teacher (e.g. *Introduction, Lesson Objectives, Use of teaching materials etc.*)



### **Step 3: Implementing Demo-Lesson (1 usual lesson period)**



- a. Conduct demonstration lesson in an actual classroom with pupils
- b. All teachers for specific subject observe demonstration lesson with specific point of observation allocated before the lesson (e.g. introduction, questioning of teacher, lesson evaluation, conclusion, classroom management etc)
- c. Record the observation result

### **Step 4: Discuss the Lesson and Reflect on its Effects (1-2 hours meeting)**

- a. Have a post-demonstration meeting with teachers observed demo-lesson to critique the lesson and get points of improvement
  - Ask demonstration teacher's impression on the lesson first
  - Critique lesson based on the observation (Discuss good points and points for improvement)
  - Have an agreement on how to revise the lesson

*Note: The critique should not be centred on a teacher but the lesson*

### **Step 5: Revise the Lesson (1-2 days)**

- a. Demonstration teacher or group of teachers revise the lesson plan based on the suggestions and comments given in the discussion

### **Step 6: Teach the Revised Lesson (1 usual lesson period)**

- a. Conduct revised lesson in the same grade but different class or split class of pupils

- b. All the science teachers observe revised lesson with special attention on the points of improvement
- c. Record the observation result

**Step 7: Discuss the Lesson and Reflect on its Effect again (1-2 hrs meeting)**

- a. Have a second post-demonstration meeting with all teachers observed lesson to discuss if it has been improved and to define what the teacher has learned during the lesson study cycle
- b. Record the discussion and file it as school-CPD report



**Step 8: Reflection Compiled and Shared (termly)**

- a. HOD/HOS and Heads/Deputy Head prepare report on school-based lesson study done as CPD and submit it to district office
- b. Contents of the reports are summarized by DEBS office and shared with other schools in the next Stakeholders' Workshop.
- c. Outstanding practices on lesson study as school-CPD are shared at national level conferences

**2.5 Roles and Responsibilities of Stakeholders**

The key stakeholders in the CPD program have been identified as Teachers, Facilitators, Heads of Department (HOD)/ Heads of Section (HOS), Deputy Heads, Heads (Principals), Standards Officers, Zone Heads and Zone INSET co-ordinators, DRCCs and District Education Board Secretary (DEBS), Teacher Educators. It is necessary that every stakeholder shall work to ensure the

implementation and quality of the activities under the programme in collaboration with other stakeholders.

***All the stakeholders shall cooperate to have effective School-Based CPD.***

All identified stakeholders have roles and responsibilities expected of them as outlined below:

**Teachers**

Teachers in the schools are the main actors in the programme and should be beneficiaries. They are requested to create effective CPD meetings at school with the initiative of HOD/HOS/Senior Teachers and in collaboration with facilitators and Deputy Heads who will join the meetings. They are also expected to;

- Collaboratively prepare lesson plans

- Demonstrate in the lessons
- Observe lessons demonstrated by fellow teachers
- Participate in discussions after lesson
- Revise the lesson plan
- Record discussions and prepare report on CPD meeting
- Implement acquired skills in their own classrooms

### **Facilitators**

These are classroom teachers or teacher educators who have been identified as focal persons in a given cluster or zone. Each facilitator shall be requested to assist school-based CPD activities not only in his/her school but also some schools assigned to him/her. They will effectively participate in the school based CPD by:

- Assisting teachers in the planning of CPD activities in the schools assigned
- Checking lesson plans before lesson demonstrations are conducted.
- Effectively participating in the lesson planning during the pre-demo sessions
- Observing demonstration lessons
- Facilitating discussions after lesson demonstrations
- Preparing and submitting facilitation reports
- Attend Stakeholders Workshop.

### **Heads of Department (HOD)/ Heads of Section (HOS) Senior Teachers**

The HODs or HOSs or Senior Teachers are very important in the success of the program, as these activities will take place within their jurisdiction. They will carry out the following responsibilities:

- Taking an initiative to conduct school based CPD
- Planning and scheduling of activities
- Preparing of logistics e.g. venue, resources, learners
- Checking lesson plans for teachers before lesson demonstrations
- Assisting demo/teachers in preparing teaching materials
- Preparing and submitting report to immediate supervisor

- Record keeping
- Attend Stakeholders Workshop.

### **Deputy Heads**

In addition to the job description the Deputy Head is expected to undertake the following.

- Take the central role of being in-charge of CPD at school level (Planning, Implementing, Reviewing, Reporting)
- Observe demonstration lessons
- Attend discussions as process observers not necessarily the content of the lesson demonstrations
- Maintain and manage CPD files in the schools
- Submit reports to higher authority as required by their job description
- Participate in planning for CPD activities at school level
- Liaise with Head and HOD/HOS on CPD activities
- Attend Stakeholders Workshop.

### **Head teachers**

The Heads oversee all school based CPD activities by way of management, co-ordination and monitoring. Heads have a challenge of creating a conducive learning environment. This is demanded of them by their job description. For such a dream to be realized, an effective CPD needs to be conducted in a school. Therefore, the following responsibilities are to be undertaken by the Head:

***Institutional Heads are the key players for enabling teachers in their schools to have effective lesson study activities.***

- Oversee school based CPD
- Ensure that the school has a conducive environment for CPD
- Allocate resources necessary for effective school based CPD
- Monitor school-based CPD including lesson study activities of teachers through actual visits to the classroom and meetings
- Ensure that CPD files are recorded at the school
- Read and offer guidance on reports produced by her/his subordinates



- Submit harmonized report to higher authorities as required by their job description
- Attend Stakeholders Workshop.

### **Resource Centre Coordinator (RCC)**

In line with their job description, the RCCs are expected to assist facilitators and schools in implementing CPDs regularly especially at Upper-Basic level, which needs to adopt cluster- or zonal-approach for CPD activities. The roles of RCC will be to:

- Coordinate with schools and facilitators especially at basic school level in planning and scheduling CPD activities in schools and zones.
- Support the CPD by helping schools and facilitators in conducting CPD activities
- Facilitate district Stakeholders workshops.
- Support monitoring.



### **Standards Officer**

For the system to operate and be sustainable, continuous evaluation is necessary. This means that the Standards Officers at all levels need to be involved during the course of the CPD activities. They are expected to;

- Be involved in the monitoring and evaluation of the CPD and give professional advice to the stakeholders on the direction of the program
- Assist schools on the management of CPD
- Produce reports on the result of monitoring CPD
- Observe lesson demonstrations
- Participate where possible in the post - demo discussion

### **District Education Board Secretary (DEBS)**

In the education system, the DEBSs are in-charge of education in the district. The investment in CPD by the DEBS would provide quality sustainable school based teacher professional development. The DEBS role will therefore be to:

- Oversee and encourage CPD in the district
- Allocate resources for CPD

- Advise all stakeholders on CPD matters
- Facilitate and officiate during CPDs
- Provide corrective measures during CPD
- Host stakeholders' workshops termly.

### **Teacher Educators**

In order to make network and cooperation between In-service and Pre-service training of teachers, it is recommended to invite guests and staff from Teacher Training Colleges and Universities to the workshops and meeting under the program. The role of pre-service teacher trainers will be;

- Provide academic comments and inputs during the workshops
- Introduce Lesson Study practices to students and monitor implementation of the same practices during their peer teaching and teaching practice
- Participate in Lesson Study at college level.
- Demonstrate lesson study to students
- Conduct action research in coordination with Joint Technical Committee members

### **School Boards/College Boards/PTAs**

Community involvement in education should be directed at raising the learning achievements of pupils, increasing access, participation, retention and completion rates among girls and other disadvantaged children.

### **Other Stakeholders:**

As the program proceeds, we are mindful of the fact that more stakeholders such as, **Community Members** and **Subject Associations** will be identified and assigned activities accordingly.

### 3. Monitoring and Evaluation

#### 3.1 Monitoring on Program Activities

Monitoring activities in School-Based CPD basically follows SIMON in SPRINT-CPD. There are several kinds of monitoring activities to examine implementation of the program activities and to assess the outputs of teachers periodically. These activities are classified by their level and venue conducted.

***Activities in School-Based CPD are continuously monitored at School, District and Provincial Level***

##### 3.1.1 School Level Monitoring:

HOD/HOS, Deputy Heads and Head Teachers at school level shall monitor teachers participating in the program. Monitoring format for school-based CPD is used to check the progress and contents of lesson study of the teachers, while teachers' APUS format is used to evaluate performance of respective teacher in a school. In addition to these, facilitators are also requested to monitor school-based CPD activities in the schools assigned to them.

##### 3.1.2 District Level Monitoring:

DEBS office shall be responsible to monitor through standards officers if all the schools in the districts conducts school-based CPD with lesson study approach regularly and effectively. DEBS office shall check the reports prepared by the schools and facilitators and take necessary measures in coordination with provincial office if any problems and concerns appear under the program.

##### 3.1.3 Provincial Level Monitoring:

The monitoring conducted by Provincial Office through PESO shall be on the program itself. Through this monitoring including school-visit and reviews on the reports submitted by DEBS office, members in project coordinating committee and project task force will define the progress and direction of the implementation of the program. At provincial level, necessary data for CIPP evaluation shall be collected periodically in the form of operational and academic indicators.

##### **Operational Indicator:**

These are the data, which show operation of the activities under School Based - CPD. The following data shall be parts of the samples. The data are used in Input, Process Evaluation in CIPP.

- Number of Lesson Study Cycles conducted as School-CPDs
- Number of Lesson Plans prepared and revised in School-CPDs
- Number of Improvised Teaching Materials made for Lesson Study
- Number of Facilitators and Headmasters Workshop conducted

**Academic Indicator:**

These are the data, which show improvement of teachers in terms of introducing Learner-centered approach to e.g. science or social studies lessons. The data shall be used in Product evaluation.

- Percentage of expressions on lesson plans written in the view of pupils/students
- Percentage of lessons that define objectives clearly and attained them
- Percentage of lessons that enabled pupils to find what the teacher wanted to teach
- Percentage of lessons composed to teach scientific concept to pupils
- Percentage of teachers’ questions in lessons classified to each level of Bloom’s Taxonomy of Educational Objectives
- Data on pupils’ impressions on lessons

**3.2 Reports on the Program**

Title of Report	Who will prepare?	To who submitted?	When is it prepared?	What are contents?	Where is it filed?
School-CPD Report	Teachers, HOD/HOS Deputy head Headmaster	DEBS office	End of every school term	Schedule, Contents, Result of CPD activities	DEBS office & Provincial office
Facilitators Report	Facilitators	DEBS office Provincial office	End of every school term	Conditions and impressions on CPD attended	Provincial office
District Periodical Report	DEBS office	Provincial office	Every school holiday	Status and conditions on implementation of school-CPD in district	Provincial office
Provincial Report	Provincial office	Headquarters and Donors (if necessary)	Every 6 months	Progress of school-CPD	Headquarters

Figure 4: Reports to be prepared by the stakeholders under School-Based CPD

**3.2.1 Progress and Implementation Reports**

As shown in Figure 4, all schools are requested to prepare progress or implementation report on the program and submit to the Provincial Education Office through the DEBS office at the end of the each school term.

DEBS offices shall compile reports from the schools and summarise them as District reports. Reports from facilitators in the field would be also good resource for preparing District reports.

As a province, PEST members are advised to prepare progress report every six (6) month for submitting to the Ministry Headquarters and other institutions.

### 3.2.2 Monitoring Reports

Monitoring reports shall be prepared by facilitators, Resource Centre Coordinators, District officers and Provincial officers, whenever they conduct monitoring activities such as school visits, attending district or school workshops and attending school-based CPD activities. All the reports have to be submitted to Provincial Education Office through DEBS Office.

### 3.3 Evaluation of the Program

In consistence with objectives of School-Based CPD, effectiveness and efficiency of the program should be assessed by proper evaluation framework. Although there are several kinds of evaluation models for educational programs, Stufflebeam's CIPP model shall be used as a tool for assessing School-Based CPD. CIPP, which stands for different evaluation components in assessment works – Context, Input, Process, Products, is one of the decision-making evaluation models that enable implementers to make decisions on the program implementation. The reason why we adopt CIPP model is a basic idea of CIPP, which does not put too much importance on current situation or rightness of the program but on the hints and idea for further improvement of the program. Since School-Based CPD is continuing program that should be conducted through the life of a teacher, we need evaluation, which provides not only the results and outputs but also suggestions on the program implementation.

	Context	Input	Process	Product
Aim	To diagnose program background and assess needs	To assess what changes are possible	To ensure that the suggested changes are being carried out as intended, and to identify problems in implementation	To find out whether the instructional program or idea actually made a difference
Method	Using methods such as classroom interviews, diagnostic tests, analysis of students' written work	Using methods such as literature search, visits to exemplary programs, pilot trials, ideas from teachers in the field	Monitoring the change process, by observing and recording the activities that take place and both the expected and unexpected results	Measuring changes in performance compared with students' work before the program began, including whether students have learned to transfer their knowledge to new problems. Measures can include interviews with participants, class tests, analysis of students' written work
Decision making	To provide a basis for deciding on what changes are needed	To find where there is most support for change and to find out which solutions are most feasible	To help in fine tuning the program, and also to provide data which can be used later to interpret the impact of the change	To decide whether the changes should be continued, terminated, or modified

Figure 5: The 4 types of evaluation used in the CIPP model (Stufflebeam, 1983)

For conducting CIPP on School Based - CPD, specific criteria shall be set up to

have each evaluation on the component of Context, Input, Process and Products. The aim, method and expected decisions are shown in the Figure 5.

**Activities in School-Based CPD shall be evaluated by CIPP.**

Fortunately, we are aware that a baseline survey was conducted by the University of Zambia and ISTC in 2002. The data captured in this survey can be used as baseline data for the program to have evaluations of CIPP components; however, there still be a need to have additional research including technical baseline survey in order to obtain quantitative and qualitative data for the assessment.

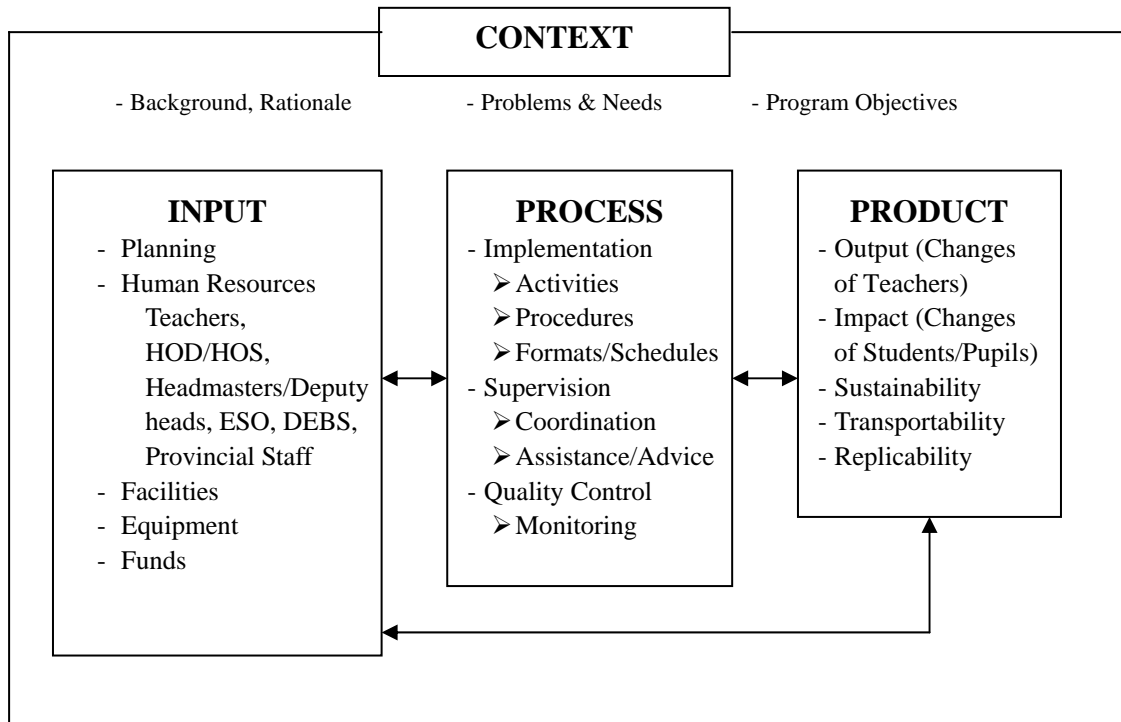


Figure 6: CIPP Framework for evaluation of School-Based CPD

### 3.3.1 Context Evaluation

Context evaluation shall be conducted to assess if the program objectives are consistent with the needs of schools and teachers. For this evaluation, background and rationale of the program, national policies, needs of schools and teachers, availability of resources related to target subjects, objectives of the program shall be reviewed through documentation ( with pictorial evidence) analysis and questionnaires to the teachers.

### 3.3.2 Input Evaluation

Input evaluation shall be conducted to assess if the inputs are properly done in the program. For this evaluation, all the inputs to the program, which include funds, human resources, facilities and equipment, shall be reviewed in terms of its effectiveness and efficiency through questionnaires and focus group interviews to

the stakeholders.

### **3.3.3 Process Evaluation**

Process evaluation shall be conducted to assess if the design and framework of program implementation are proper and efficient. For this evaluation, activities done under School-Based CPD and their formats shall be assessed through questionnaires and focus group interviews with the stakeholders. To some extent external observers could also be invited to evaluate the programme (PTA and Board representatives)

### **3.3.4 Product Evaluation**

Product evaluation shall be conducted to assess if the objectives of the program are attained in terms of its outputs and the results of the activities in School-Based CPD. For this evaluation, change of teachers' perception on teaching specific subject, improvement on writing lesson plans and teaching, change of pupils' impressions on lessons for target subjects, change in pupils' performance shall be assessed by questionnaires and interviews to the stakeholders as baseline and end line survey. At times it will be necessary to sample current researches/surveys being done by individual students from colleges and Universities on performance of target subjects. In view of this, there is need for annual review of baseline survey. In this component, sustainability, transportability and replicability of the program in other subjects and geographical areas shall be also examined.

### **3.3.5 Relationship among CIPP components**

After analysing four main components in CIPP, the relationship among components shall be discussed to find key factors on implementation and improvement.

### **3.3.6 Decision Making**

Based on the result of CIPP evaluation, stakeholders in the program shall be requested to make decisions for implementation and improvement of the program.



# PART III

## USEFUL INFORMATION BASED ON EXPERIENCE



The useful information based on the pilot project in Central Province has revealed that five (5) areas need to be given attention, if one has to embark on implementing this kind of CPD which is school-based and focusing on Lesson Study. These are:

1. Procedures for introducing the program
2. Consideration of Geographical differences on implementation
3. Clustering and Allotment of facilitators
4. Levels of organisation and arrangement of activities
5. Anticipated challenges and possible counter measures

## **1. Procedures for introducing the program**

### **1.1 Orientation of PEST**

As this committee takes responsibility of the management of the program, it should consist of the representatives from educational offices and organizations concerned with the program. It is recommended for the committee members to have periodical meetings to manage the implementation of the program.

Below is a sample composition of the Provincial Education Support Team (PEST) for School-Based CPD program. The Provincial Education Officer (PEO) shall be the program manager in the province, while the Principal Education Standards Officer (PESO) shall be deputy manager. The composition and total number of the committee members may vary depending on the number of institutions existing in the province and subject to be emphasized through the program.

#### **Sample composition of The Provincial Education Support Team for SBCPD**

#	Personnel	Institution
1	Provincial Education Officer	Provincial Education Office
2	Principal Education Standards Officer	Provincial Education Office
3	Senior Education Standards Officer (Natural Science)	Provincial Education Office
4	Senior Education Standards Officer (Mathematics)	Provincial Education Office
5	Senior Education Standards Officer (Practical Subject)	Provincial Education Office
6	Education Officer – Teacher Education	Provincial Education Office
7	Senior Planning Officer	Provincial Education Office
8	Subject Coordinators for Basic School	Provincial Resource Centre
9	Subject Coordinators for High School	Provincial Resource Centre
10	Representative of DEBSs	DEBS office
11	Representative of Headteachers	High School

*Note: In Central Province, this team was organized as Joint Technical Committee (JTC) under SMASTE-CPD program.*

Among the members of PEST, it is recommended to choose three (3) or four (4) people as “Task Force” members who will continuously plan and coordinate the activities at ground level. This role of Task Force can not be taken by the PEO or PESO as they have a lot of work to do at the station.

***Good teamwork of PEST & DEST members is a key for successful implementation of the Program.***

It is also recommended that each district which implements the program would organize District Education Support Team (DEST). The following is the suggested composition of the DEST:

- *DEBS*
- *DESO*
- *DRCC*
- *DPO (District Planning Officer)*
- *1 Head High School*
- *1 Head Basic Schools (Chairperson for Heads Association at District Level)*
- *2 Facilitators from High Schools*
- *2 Facilitators from Basic Schools*
- *1 Zone Inset Coordinator*

The PEST has to be sensitised on the program and their role and responsibilities in the program. At this time, the Task force needs to strategize on how they would like to orient the members. It depends on how they would like to do it. However, it should be noted that not all members can be taken on board at the same time. For example, we recommend that those members who are based at PEO’s or DEBS office could be sensitised during the weekly meetings. The task force has to see that the project manager and deputy manager are continuously kept abreast of the direction the program is taking.

## **1.2 Roles and Responsibilities of Committee Members**

Each member of the PEST should be assigned an area of responsibility in relation to the functions expected to be undertaken and be held accountable. To ensure commitment, assigned responsibilities must be closely related to their Key Result Areas as per their Job Description. Possible allotment of the roles among PEST members is described in the table.

When the provincial workshops such as Stakeholders’ or Facilitators’ Workshops are held, the PEST are requested to share the tasks for the smooth conduct of the workshop in coordination with the host institutions.

**Possible Roles for PEST members**

Roles	Responsible Officer(s)
Overall coordination of the program	PESO
Planning of activities under the program	SESOs / EO-TED
Capturing budget and procurement of materials for the workshops	EO-TED / SPO
Issuing and filing official communication	EO-TED
Recording activities and producing minutes of the meetings	Subject Coordinators
Conducting baseline and other surveys on the program	Task Force
Encoding data on the implementation and surveys	Task Force
Monitoring activities	PEST Members

**1.3 Planning Implementation**

It is important that, before the program takes root, a proper planning for implementation is done. A series of meetings among the PEST members need to take place, so that all of the PEST members can be taken on board. Then, a detailed implementation plan needs to be developed in coordination with DEST members. This should give a guide as to when major activities take place including the expected outcomes for each activity. A modular and cycle approach is recommended. It is during the planning meeting that the sharing of activities for the actual implementation and specific matters such as communication, venues, costs, target audience, etc. shall be discussed and agreed upon by the members. It is also important to consider the way which the province or district is going to be divided into groups for the implementation. The population of schools and total number of participants for workshops under the program need to be taken into consideration for this grouping.

**1.4 Conduct of Baseline Survey**

General concerns on CPD, which alludes to poor teaching and learning, are known in the country; however, there have been few reports which tried to reveal the effect of CPD with specific research. There is a need to conduct technical survey on the effect of CPD programs, so that we can get a clear picture of what is presently going on in terms of teaching and learning and what changes are caused in the classroom by the activities under the program. Conduct of research before and after implementation enables us to compare those results for seeing the effects of the program. Such data will also need to be used to design the interventions during implementation.

Tools used for the survey should be carefully selected and prepared by PEST members and other stakeholders to capture the status and improvement with certain

academic points of view. Examples of baseline survey conducted by the JTC members in Central Province are shown in PART III.

Based on the analysis of data, topics of concentration in a CPD can be developed to address the concerns. In doing so, it is expected that the needs for both teachers and pupils are addressed in turn enhancing the quality of teaching and learning.

## 2. Consideration for geographical differences on implementation

A comprehensive understanding of the constituency is important in drawing up the implementation plans. The following have to be considered; the grouping of Districts so that the total number of participants is 200 – 300, distances between schools for clustering and allotment of facilitators, number of schools in a district and zones. Zones are

***Considering geographical location of schools is important to arrange the zones and clusters for implementing lesson study and assign facilitators.***

established and fixed while clustering is an arrangement for cost effectiveness. Location of the zones and district resource centres as focal points for accessibility for the teachers and operational points of the facilitators and staffing levels is important.

### 2.1 Urban Area

Experience has shown that, in urban areas, the population (pupils and teachers) and concentration of schools is high. The identification of facilitators as well as clustering needs to be done carefully because, if not well handled, no effective CPD can take place. In general, the cost of conducting CPD is expected to be lower and easier. However, it is necessary to develop a culture where teachers would be sent to other schools to conduct duties like any other normal days. This would strongly reduce the cost of conducting CPDs. If the school has enough teachers to make a quorum of about 5 to 10 teachers in the same subject or grade, the school is highly recommended to conduct CPD activities within its school.

### 2.2 Semi-Rural Area

Semi rural areas are common in most parts of Zambia. Here, the cluster approach could be used. The idea of Zonal Heads and ZICs becoming focal point people is important in such a case. During the Zonal Heads meetings, the planning of CPD could be done and budgeted for as a Zone activity. Such will require teachers to meet in a cluster, if they are few in a school. Bicycles as a cost effective means of their transport could be considered. But, if a school has enough teachers, school CPD could be done within such a school.

### 2.3 Rural Area

This tends to be the most disadvantaged area. It has schools that are far apart, with few teachers and very poor road infrastructure. It is also in such schools that we find

seconded teachers teaching upper classes. Here the bottom-line is that teachers in such schools are at the same level in terms of qualifications. In such a case, two options could be used. The first is, if applicable, to create a cluster with schools nearby as described under Semi-rural areas. The second is to conduct CPD using all the members of staff available in the school, since these teachers do not teach specific subjects.

What should be noted, however, is that the quality of CPD in all these three areas would not be the same. In terms of time, schools in rural areas would need more time to achieve the required results than those in urban areas. It is, therefore, important to mention that such aspects need to be considered during planning for implementation.

### **3. Clustering and Allotment of Facilitators**

The structures of zones are established as a Zone Resource Centre or Zone Centre School with a Zone Head and Zone CPD co-ordinator. They are expected to co-ordinate CPD activities alongside the teaching, hopefully with a reduced teaching load, so as to carry out the CPD activities in the schools of their catchment areas. The clustering arrangement is not to undo the zones but get maximum benefit from the program in terms of facilitation and shared experiences between basic and high schools.

Several factors need to be considered in allotting a facilitator to a cluster among them being that facilitators are classroom teachers with a teaching load. The zonal heads has identified them during their heads meetings although the facilitator may not be from the zone centre school. It is a person who is a model teacher who others can learn from and has facilitation skills. Consideration could be given to the facilitator to have reduced teaching loads, so that they can facilitate the School-Based CPD activities in the cluster; however, most importantly can work hand in hand with the zonal Heads and ZICs in order to take all the subjects on board. If a ZIC qualifies, he or she could be also considered as a facilitator.

### **4. Levels of organisation and arrangement of activities**

For the successful program implementation, a number of CPD activities have to be conducted at various levels of our education system such as school, cluster, district, provincial and national levels. These activities will be undertaken within the framework of SPRINT, which has assured school-based CPD meetings of teachers, although certain flexibility on designing activities under the program should be kept for smooth and sustainable implementation in respective districts, clusters and schools.

#### **4.1 School Level**

The following are some of the activities which could be organized/arranged and conducted at school level:

- Head teachers' Meeting (HIM) as a venue of CPD activities which could be reviewed once or twice per term.
- Whole school workshops where a facilitator brings new knowledge and pedagogical skills
- Monthly lesson study activities/Fortnightly Teacher Group Meetings (TGM) or Departmental Meetings where the 8 steps of the Lesson Study are effected
- Monitoring of the CPD meetings and Lesson Demonstrations by head teacher and/or deputy head teacher
- Monthly report writing for submission to the next Stakeholders' Workshop with two kinds of lesson plans (initial and revised lesson plans)

#### 4.2 Cluster level

Cluster meetings to be held once per month and organised by Zone head, ZIC and facilitators. Participants at the cluster meeting should involve zone heads, school heads, ZIC, SICs, HODs/HOSs, Senior teachers and facilitators to plan, review, share experiences, develop cluster activity schedule/work plan, train, monitor and prepare cluster report for submission to the district.

- Conduct whole cluster workshops where facilitators bring new knowledge and pedagogical skills
- Convene Monthly cluster Meetings where the 8 steps of the Lesson Study are effected/reviewed.
- Monitoring of the CPD meetings and Lesson Demonstrations by the ZIC/SIC/HOD/HOS/Senior teacher.
- Monthly report writing for submission to the District Stakeholders' Workshop with two (kinds of) lesson plans (initial and revised lesson plans)
- Plan, review, share experiences.
- Develop cluster activity schedule/work plan.
- Train, monitor and prepare cluster report for submission to the district.
- Any other CPD activities as directed by the District.

#### 4.3 District level

In the meeting of district committee members, allocation of zones/schools should be done as the first step for the implementation. This work includes the selection and assignment of facilitators in the

district. The number of facilitators needed for the implementation depends on the size of the district and geographical locations of schools; however, it is not recommended to assign more than 5 schools to one facilitator. In case that the district arranges groups of 2 to 3 facilitators moving together as a team, more

***Assignment of facilitators to the schools/clusters should be done well at District Level, so that they can effectively and efficiently assist CPD activities in schools***



schools could be assigned to each group of facilitators. After the allocation of facilitators, activities which can be organized by the district to enhance the implementation of the program shall be planned by the committee members. Meeting of all facilitators in the district, sensitization meeting for zonal head teachers and ZICs, orientation workshop for all head teachers and deputy heads in the districts are possible activities at district level. Monitoring activities by district committee members could be also planned by the team. A sample of district implementation plan is shown in PART III.

- District meetings by DEST.
- Monitoring of the CPD meetings and Lesson Demonstrations by head teacher and/or deputy head teacher
- Monthly report writing for submission to the next Stakeholders' Workshop with two kinds of lesson plans (initial and revised lesson plans)
- Plan, review, share experiences.
- Develop cluster activity schedule/work plan.
- Train, monitor and prepare cluster report for submission to the district.
- Any other CPD activities as directed by the Province

#### **4.4 Provincial level**

In order to foster the idea of school based CPD, the once per term Stakeholders' Meeting is held during the holidays in a learning institution. Depending on the district grouping, the recommended number of participants is around 200 to 300. The composition of the participants shall be DEBS, DESOs, head teachers, deputy head teachers and facilitators. Colleges of Education should also participate for academic, professional as well as management purposes. The major items for discussion would be the sharing of experiences through report presentations from schools and planning of activities for the next school term. These discussions could be organized as parallel sessions per district.

The theme for the term as per key factors and its components for facilitators, deputies and CPD co-ordinators needs to be prepared. The weak points of teachers which are revealed by technical survey should be considered for setting up the theme. Once the theme for the next school term is set, technical inputs on that theme shall be given to the facilitators, deputy heads and co-ordinators at Stakeholders' and Facilitators' Workshop, and schools would have their lesson study activities with careful attention on that theme in the following term.

- Provincial Meetings by PEST.
- Monitoring of the CPD meetings and Lesson Demonstrations
- Plan, review, share experiences.
- Develop Provincial activity schedule/work plan.
- Any other CPD activities as directed by the PEST

In the case of Central Province, the topics below were set as sub-themes for lesson study to address the main theme which were given for the first two-year module.

**Module Theme:**

“Key Factors and Components for Effective Science Lesson Study in Zambia”

**Sub-themes:**

- 1<sup>st</sup> cycle: “How to conduct lesson study in a school”
- 2<sup>nd</sup> cycle: “Lesson Planning – Preparing good lesson plans”
- 3<sup>rd</sup> cycle: “Effective Questioning Techniques”
- 4<sup>th</sup> cycle: “Techniques on Structuring Lessons & Major teaching approaches
- 5<sup>th</sup> cycle: “Practice of revising Lesson plan”
- 6<sup>th</sup> cycle: “Review of Questioning Techniques and Delivery Skills”

For school heads and DEBS, “Effective school management” and “Effective management of school-based CPD” could be considered as general themes on which specific topics can be discussed arising from the common problem areas identified during the reporting session.

**Sub themes:**

- Effective management of school as an organization
- Effective management of school-based CPDs
- Effective planning of school activities
- School self-evaluation and school improvement (Improvement of internal monitoring of school managers)
- Improvement of school environment and resources
- Standard indicators for evaluating school activities

#### **4.5 National Level**

At National level, Directorate for Teacher Education and National Education Support Team for the program would take responsibilities below following the strategies on the master plan for introducing School-Based CPD through lesson study.

- Overall coordination and supervision on the program following national policy of INSET and CPD
- Plan, review and revise the master plan for SBCPD in the country
- Facilitate and support workshops under the program held at provincial, district and zone level
- Monitor activities under the program in coordination with PESTs, DESTs and ZESTs

## 5. Anticipated challenges and possible counter measures

### 5.1 Challenges related to Management of the Program

Anticipated challenges	Possible explanations / Counter-measures
<p>Low commitment of school management on professional development of teachers</p>	<p><u><i>Problem analysis:</i></u>                      For a long time, teachers had not been viewed by the school management as people who needed improvement in their learning. Instead, they were always expected to perform wonders in class with the basic knowledge they acquired during initial teacher training.</p> <p><u><i>Possible Counter-measure:</i></u></p> <ul style="list-style-type: none"> <li>• School management should be involved as participants of/at the stakeholders' workshops and a session for them in order to deepen their managerial skills and commitment for the program should be organized.</li> <li>• Showing them a good sample of implementing CPD activities or taking them to model schools which has implemented effective CPDs, so that they can start comparing themselves with those good models.</li> <li>• Periodical monitoring activities by provincial and district officers should be planned to monitor school managers and CPD activities implemented in schools. (Monitoring format 01 in PART III could be used for this.)</li> </ul>
<p>Time management: (inadequate time at school for implementing lesson study)</p>	<p><u><i>Problem analysis:</i></u>                      Most of the teachers and school managers always say there is little or no time to conduct CPD due to various programs running in schools and personal matters.</p> <p><u><i>Possible Counter-measure:</i></u></p> <ul style="list-style-type: none"> <li>• regulations are that government workers in Zambia including teachers are expected to work for 8 hours a day. However, most teachers knock off immediately they finish teaching. Hence the need for change of mind set and work culture. The school deputy heads, in consultation with the HODs and Senior Teachers or SIC and ZICs, need to make a master plan for the school's activities.</li> <li>• It is also necessary for school managers to orient teachers that proper and effective study as professionals requires certain time and efforts. There is no easy way for learning.</li> <li>• Effective supervision is also required at all levels.</li> </ul>

<p>Difficulties in monitoring &amp; creating clusters caused by geographical location of schools</p>	<p><u><i>Problem analysis:</i></u>                  Schools in some areas, especially in rural areas, are far from each other and this affects efforts or plans to create school clusters for the implementation of the program. In addition, there is poor road infrastructure making some places inaccessible and insufficient communication system among schools.</p> <p><u><i>Possible Counter-measure:</i></u></p> <ul style="list-style-type: none"> <li>• Arrangement of clusters should be done carefully, so that teachers from small schools can have opportunities to attend CPD meeting in cluster. Re-arrangement of cluster might be considered, if teachers have to take long trip to other school.</li> <li>• Procurement of bicycles can be considered as a cost-effective way to assist teachers to move in cluster.</li> <li>• Proper plan for monitoring by provincial and district officers should be made.</li> <li>• Capacity needs to be strengthened at lower levels, especially Zonal Heads , so that the reports periodically generated by the Zones are authentic.</li> <li>• Strengthen communication system</li> <li>• Strengthen Zone centre.</li> </ul>
<p>Paradigm shift on perceiving workshops as a source of income</p>	<p><u><i>Problem analysis:</i></u>                  A culture of perceiving workshops as a means of extra income had entered the minds of many people and teachers were not an exception. Some donors and NGOs pay their participants well and some of the teachers attend such workshops, thereby, coming to CPD with such a mind set.</p> <p><u><i>Possible Counter-measure:</i></u></p> <ul style="list-style-type: none"> <li>• Make them understand and appreciate the benefits of improving their professional development. They also need to be made aware that they should not be paid for their personal professional development and benefits are not always financial.</li> </ul>

## 5.2 Challenges related to Schools and Teachers

Anticipated challenges	Possible explanation / Counter-measures
Negative attitude of some teachers	<p><u><i>Problem analysis:</i></u> Some teachers do not understand and appreciate the need of attending CPD, because they could have been in service for a long time; after graduating from teacher training institutions/ colleges, for others, teaching was not their first choice career, while others just were lazy and uninterested</p> <p><u><i>Possible Counter-measure:</i></u></p> <ul style="list-style-type: none"> <li>• Enhance orientation and sensitization by school managers on the needs of CPD as professionals.</li> <li>• Make efforts to try involving those teachers in a team of other teachers.</li> <li>• Use successful model of their colleagues as peer educators.</li> <li>• Apply appropriate administrative measures at all levels.</li> </ul>
Insufficient skills of teachers & facilitators for good lesson critiquing and lack of confidence.	<p><u><i>Problem analysis:</i></u> In an effort to balance the allotment of facilitators, certain clusters may have under qualified facilitators. Teachers are not used to critiquing lessons objectively because they might confuse critiquing a lesson and criticizing the teacher.</p> <p><u><i>Possible Counter-measure:</i></u></p> <ul style="list-style-type: none"> <li>• Conduct training workshops for the facilitators as an on going activity which enables them to continuously learn lesson critiquing skills.</li> <li>• Orient teachers on the difference between lesson critiquing and criticizing the teacher.</li> <li>• Encourage teachers to exchange comments and suggestions for improving their lessons.</li> </ul>
Inadequate materials and necessary information for teachers to use as tools to improve their competence	<p><u><i>Problem analysis:</i></u> There are not sufficient teaching and learning resources and internet facilities at schools especially in rural areas. lack of resourcefulness by teachers</p> <p><u><i>Possible Counter-measure:</i></u></p> <ul style="list-style-type: none"> <li>• Maximise the use of available resources, while developing those which could be done within our/own means.</li> <li>• Make improvised teaching materials with locally available resources.</li> <li>• Procure more materials with funds from income generating activities within a school.</li> <li>• Network the Zone centres as a long term goal.</li> </ul>

# PART III

## **SAMPLE FORMATS & PROGRAMS FOR ACTIVITIES**



**Implementation Monitoring Format (Operational Monitoring)****1. School Information:**

District: \_\_\_\_\_

School: \_\_\_\_\_

Headteacher: \_\_\_\_\_ (TS No.: \_\_\_\_\_)

Deputy Head: \_\_\_\_\_ (TS No.: \_\_\_\_\_)

HOD/HOS/ZIC (if necessary): \_\_\_\_\_ (TS No.: \_\_\_\_\_)

Number of Teachers (including seconded teachers): \_\_\_\_\_

**2. Conduct of CPD (Lesson Study)**

1) Lesson Study activities conducted in the present school term

Month	No. of Lesson Study Cycle conducted	Subject & Topic of Demonstration Lesson	Lesson Demonstrator	Facilitator of Discussion
			1 <sup>st</sup> Demo	
			2 <sup>nd</sup> Demo	
			1 <sup>st</sup> Demo	
			2 <sup>nd</sup> Demo	
			1 <sup>st</sup> Demo	
			2 <sup>nd</sup> Demo	

2) Commitment of School Managers and Overall Implementation of SBCPD in a school

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3) Problems &amp; Concerns encountered in conducting CPD and Measures taken by school

	Problems & Concerns encountered	Measures taken by school



### 3. Evaluation

1) Please rank the implementation of SBCPD (Lesson Study) in a school in correspondence with the scale 1-5: (1: Poor, 2: Fair, 3: Good, 4: Very Good, 5: Excellent)

#	Item	Poor				Excellent
		1	2	3	4	5
1	How stable is the monthly CPD Implementation in the school?					
2	Are they following lesson study cycle under SBCPD?					
3	How do you evaluate the planning and scheduling of demo-lessons?					
4	How do you evaluate the effectiveness of post-demo discussions by the teachers?					
5	How do you evaluate the ability of the facilitators during CPD?					
6	How is the cooperation & support for SBCPD by the Headteacher?					
7	How is the cooperation & support for SBCPD by Deputy Head?					
8	How is the impression of teachers participating in SBCPD activities in the school in terms of its effectiveness?					
9	Has there been any change on teachers or in a school after introducing lesson study under SBCPD?					
10	Are there any CPD records and documents prepared by school?					

Total score: \_\_\_\_\_ /50

2) Findings and

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3) Measures to be taken in the school

	Measures to be taken in the school	Action by

Name of Headteacher: \_\_\_\_\_ TS No: \_\_\_\_\_ Signature: \_\_\_\_\_

Inspected by:

Name: \_\_\_\_\_ Name: \_\_\_\_\_ Name: \_\_\_\_\_

Title: \_\_\_\_\_ Title: \_\_\_\_\_ Title: \_\_\_\_\_

Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_

**Lesson Assessment Format (Technical Monitoring)****Lesson Information:**

District: \_\_\_\_\_ School: \_\_\_\_\_

Subject: \_\_\_\_\_ Grade: \_\_\_\_\_

Topic: \_\_\_\_\_

Teacher (Demonstrator): \_\_\_\_\_ (TS No.: \_\_\_\_\_)

**1. Objectives & Its Attainment**

Please check one of three categories (No: Unclear: Yes) on the following items

#	Item	No	Unclear	Yes
1	Are the lesson objectives clearly stated in the lesson plan?			
2	Can the stated objectives be attained in a lesson?			
3	Are the stated objectives measurable?			
4	Were the lesson objectives told to the students during the lesson?			
5	In a lesson, did the students find core contents or concept by themselves?			
6	Was there time for evaluating or confirming what the students had learned?			
7	Did most of the students attain lesson objectives?			

**2. Lesson Progression**

Please check one of three categories (No: Unclear: Yes) on the following items.

#	Item	No	Unclear	Yes
1	Did the introductory part of the lesson motivate students well?			
2	Did the teacher ask the students to hypothesize a solution before instructing them to have an activity or experiment?			
3	There was a presentation by students after an activity.			
4	There was a discussion among students to find answers or better solutions to the given tasks.			
5	The teacher intended to confirm scientific concept or values in the process of teaching.			
6	Both the teacher and the students were able to conclude what they had learned in a lesson.			

**3. Teaching Materials**

Please check one of three categories (No: Unclear: Yes) on the following items.

#	Item	No	Unclear	Yes
1	Did the teacher use any kind of teaching materials apart from blackboard and chalk?			
2	Teaching materials were prepared properly before the lesson.			
3	The teacher used improvised or locally available teaching materials in a lesson.			
4	The students were able to use or understand the prepared teaching materials.			
5	Teaching materials used in a lesson enhanced students' understandings.			

#### 4. Questioning

The teacher's questions in a lesson categorized by Bloom's Taxonomy (Cognitive Process Dimension) of Educational Objectives.

	Remember	Understanding	Application	Analysis	Evaluation	Creation	Others	Total
Number of Teacher's Questions								
Percentage								100 %

#### 5. Task allocation in the Lesson Plan

	Number of Tasks	Percentage
Teacher centered tasks		
Learner or student centered tasks		
Others (None of Above)		
Total		100 %

#### 6. Other Factors

#	Item	No	Unclear	Yes
1	The teacher managed time well during lesson implementation.			
2	The teacher prepared for the lesson well.			
3	The teacher managed the blackboard very well.			
4	There were no problems in line with laboratory safety in a lesson.			
5	In a lesson, students were guided on taking notes or records well.			

#### 7. Comments (if any)

Name of the Teacher: \_\_\_\_\_ TS No: \_\_\_\_\_ Signature \_\_\_\_\_

Observed by:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**QUESTIONNAIRE FOR PUPILS ON THE PERCEPTION OF THE LESSON****SCIENCE VERSION**

**Directions:** We want to know what you think and feel about your science class. Please read each sentence below carefully. Tell us if the sentence describes your science class. Tell us if the sentences never, sometimes, often, or always happen. Please encircle your answer.

**N= Never S = Sometimes O = Often A = Always**

1. My teacher in this class gives examples that help me understand lessons in science.	N	S	O	A
2. My teacher connects new scientific ideas to other science lessons.	N	S	O	A
3. My teacher tells us to memorize concepts and facts.	N	S	O	A
4. I like the laboratory activities in my science class.	N	S	O	A
5. My teacher wants us to concentrate on how to ask scientific questions, collection of data, and discover new facts than on the memorization.	N	S	O	A
6. I feel free to express my scientific ideas in this class.	N	S	O	A
7. My teacher tries to find out if we understood our past lesson before teaching us a new lesson.	N	S	O	A
8. My teacher tries to know if we were confident about what we learn in our science class.	N	S	O	A
9. I understand the basic topics in my science class.	N	S	O	A
10. My teacher tells us that what she teaches us is true.	N	S	O	A
11. My teacher thinks that we know more about science than we really do.	N	S	O	A
12. I spend most of my time in this class copying what my teacher writes on the board.	N	S	O	A
13. My teacher wants us to memorize and at the same time understand the scientific facts and concepts .	N	S	O	A
14. I don't understand the lessons my teacher teaches.	N	S	O	A
15. This class emphasizes what students 'need to know,' rather than what they 'should be able to do' with the scientific concepts.	N	S	O	A
16. My teacher tells us what facts or concepts are important to learn.	N	S	O	A
17. I am not very good in science that is why I can't understand my science lessons.	N	S	O	A
18. My grades are a good sign of how much I have learned.	N	S	O	A
19. My grades in this class are a good sign of how hard I studied in science.	N	S	O	A
20. My teacher tries very hard to connect new ideas to past lessons in science	N	S	O	A
21. The seatworks and laboratory activities in this class are boring.	N	S	O	A
22. My teacher supports competition for grades among students.	N	S	O	A
23. My teacher is able to slowly improve our understanding of scientific ideas.	N	S	O	A
24. My teacher has a hard time answering our questions in class.	N	S	O	A
25. My teacher wants us to join in classroom discussions.	N	S	O	A
26. My teacher connects scientific concepts to the 'real world.'	N	S	O	A
27. My teacher asks questions that help me understand my science lesson.	N	S	O	A
28. This class makes me like science very much.	N	S	O	A
29. My teacher talks about the effects of science to history and society.	N	S	O	A
30. My teacher would try to do everything just to be sure that we understand the ideas taught in class.	N	S	O	A
31. My teacher is not very interested or excited to teach science.	N	S	O	A

32. My teacher is effective in teaching science.	N	S	O	A
33. This class made me more interested in science.	N	S	O	A
34. My grades are a good sign of the kind of work I do in my science class.	N	S	O	A
35. My teacher tries hard to make sure students understand the lesson.	N	S	O	A
36. It's okay to ask my teacher for help if there are things I don't understand.	N	S	O	A
37. My teacher wants me to think for myself.	N	S	O	A
38. My teacher thinks that students are responsible for their own learning	N	S	O	A
39. My science class builds a strong foundation for understanding science at a higher level.	N	S	O	A
40. My science teacher likes us to make predictions and test our theories.	N	S	O	A
41. My teacher is clear and exact about what she expects students to learn.	N	S	O	A
42. My teacher gives more lectures than any other activities.	N	S	O	A
43. My teacher is not friendly.	N	S	O	A
44. I do not think that science is important in my life.	N	S	O	A
45. When I grow up, I will take a job that uses a lot of science.	N	S	O	A
46. Grades do not matter in this class because I am happy with what I am.	N	S	O	A
47. The laboratory activities my teacher gives us are lively and fun.	N	S	O	A
48. The way my teacher explains ideas in science is very clear.	N	S	O	A
49. My teacher lets us work in groups so that we can discover things together.	N	S	O	A
50. My teacher is more interested in finishing her lesson plan than helping us learn the lesson.	N	S	O	A
51. My teacher doesn't give comments on the results of our science activities.	N	S	O	A
52. Getting high grades in this class depends more on being born intelligent than studying hard.	N	S	O	A
53. This class is boring.	N	S	O	A
54. I am still excited about learning more about science.	N	S	O	A
55. Science has nothing to do with my life.	N	S	O	A
56. My teacher lets us do scientific research projects.	N	S	O	A
57. My teacher checks and marks my exercises and homework.	N	S	O	A
58. My teacher comes for lessons on time.	N	S	O	A
59. My teacher makes us fear science.	N	S	O	A
60. My teacher uses experiments during our science lessons.	N	S	O	A

Age: \_\_\_\_\_ Sex: Male Female

Subject: \_\_\_\_\_ Grade and Class: \_\_\_\_\_

**QUESTIONNAIRE ON THE IMPLEMENTATION OF SBCPD****FOR TEACHERS**

The items below describe the matters related to the implementation of lesson study activities under School-Based CPD program. Please read each item carefully and decide whether you agree or disagree with each item. Encircle the number corresponding to your response using the following scale: **1- (SD) Strongly Disagree; 2-(D) Disagree; 3-(NDA) Neither Disagree nor Agree; 4-(A) Agree; 5-(SA) Strongly Agree.**

Items	SD	D	NDA	A	SA
<b>CONTEXT</b>					
1. I rarely participate in workshops and trainings for teachers.	1	2	3	4	5
2. I think teachers have to continue learning, even after we leave college.	1	2	3	4	5
3. I need more skills and updated information on teaching.	1	2	3	4	5
4. It's good that lesson study activities have been introduced in our school under SBCPD program.	1	2	3	4	5
5. SBCPD program aims to improve knowledge & skills of teachers through lessons study as school CPD. I think this objective is appropriate to the teachers.	1	2	3	4	5
<b>INPUT</b>					
6. Our school has an activity plan for SBCPD activities including lesson demonstrations.	1	2	3	4	5
7. The SBCPD facilitator assigned to my school or zone is doing good job.	1	2	3	4	5
8. I was given an opportunity to participate in the CPD meetings conducted by the SBCPD facilitator.	1	2	3	4	5
9. I have adequate apparatus/equipment for teaching.	1	2	3	4	5
10. I was oriented by facilitator / school managers on how to conduct lesson study at school.	1	2	3	4	5
<b>PROCESS</b>					
11. I appreciate that the SBCPD activities have been introduced at school level.	1	2	3	4	5
12. Our school head and deputy head are supportive to lesson study activities of teachers.	1	2	3	4	5
13. I always get new idea or skill from lesson study activities at school.	1	2	3	4	5
14. We are following 8 steps of lesson study activities at school.	1	2	3	4	5
15. Our school head and deputy give us useful comments and suggestions for improvement of teaching.	1	2	3	4	5
<b>PRODUCT</b>					
16. I became confident in teaching through activities under SBCPD program.	1	2	3	4	5
17. I now spend more time for preparing my lessons.	1	2	3	4	5
18. I feel that the team work of our teachers was strengthened through this program.	1	2	3	4	5
19. I wish that lesson study activities would be continued next year.	1	2	3	4	5
20. I believe that the framework of SBCPD program can work if taken to other schools and provinces.	1	2	3	4	5

**Thank you very much for your kind cooperation!!**

**QUESTIONNAIRE ON THE IMPLEMENTATION OF SBCPD****FOR SCHOOL MANAGERS (HEAD & DEPUTY HEAD TEACHER)**

The items below describe the matters related to the implementation of lesson study activities under SBCPD program. Please read each item carefully and decide whether you agree or disagree with each item. Encircle the number corresponding to your response using the following scale: **1- (SD) Strongly Disagree; 2-(D) Disagree; 3-(NDA) Neither Disagree nor Agree; 4-(A) Agree; 5-(SA) Strongly Agree.**

Items	SD	D	NDA	A	SA
<b>CONTEXT</b>					
1. Teachers in my school rarely participate in workshops and trainings for the improvement of teaching.	1	2	3	4	5
2. Teachers have to continue learning, even after they become teachers.	1	2	3	4	5
3. Teachers in my school need more skills and updated information on teaching.	1	2	3	4	5
4. It's good that lesson study activities have been introduced in our school under SBCPD program.	1	2	3	4	5
5. SBCPD program aims to improve knowledge & skills of teachers through lessons study as school CPD. I think this objective is appropriate to the teachers.	1	2	3	4	5
<b>INPUT</b>					
6. Our school has an activity plan for SBCPD activities including lesson demonstrations.	1	2	3	4	5
7. The SBCPD facilitator assigned to my school or zone is doing good job.	1	2	3	4	5
8. In our school, an opportunity has been provided for teachers to participate in the CPD meetings conducted by the SBCPD facilitator.	1	2	3	4	5
9. We have adequate apparatus/equipment for teaching.	1	2	3	4	5
10. We have conducted an orientation on how to conduct lesson study at school.	1	2	3	4	5
<b>PROCESS</b>					
11. I appreciate that SBCPD activities have been introduced at school level.	1	2	3	4	5
12. Teachers in my school are cooperative in conducting lesson study activities.	1	2	3	4	5
13. Teachers in my school always get new idea or skill from lesson study activities at school.	1	2	3	4	5
14. We are following 8 steps of lesson study activities at school.	1	2	3	4	5
15. In lesson study activities, I give comments and suggestions for improvement of teaching to the teachers.	1	2	3	4	5
<b>PRODUCT</b>					
16. Teachers in my school became confident in teaching through activities under SBCPD program.	1	2	3	4	5
17. Teachers in my school now spend more time for preparing their lessons.	1	2	3	4	5
18. I feel that the team work of our teachers was strengthened through this program.	1	2	3	4	5
19. I wish that lesson study activities would be continued next year.	1	2	3	4	5
20. I believe that the framework of SBCPD program can work if taken to other schools and provinces.	1	2	3	4	5

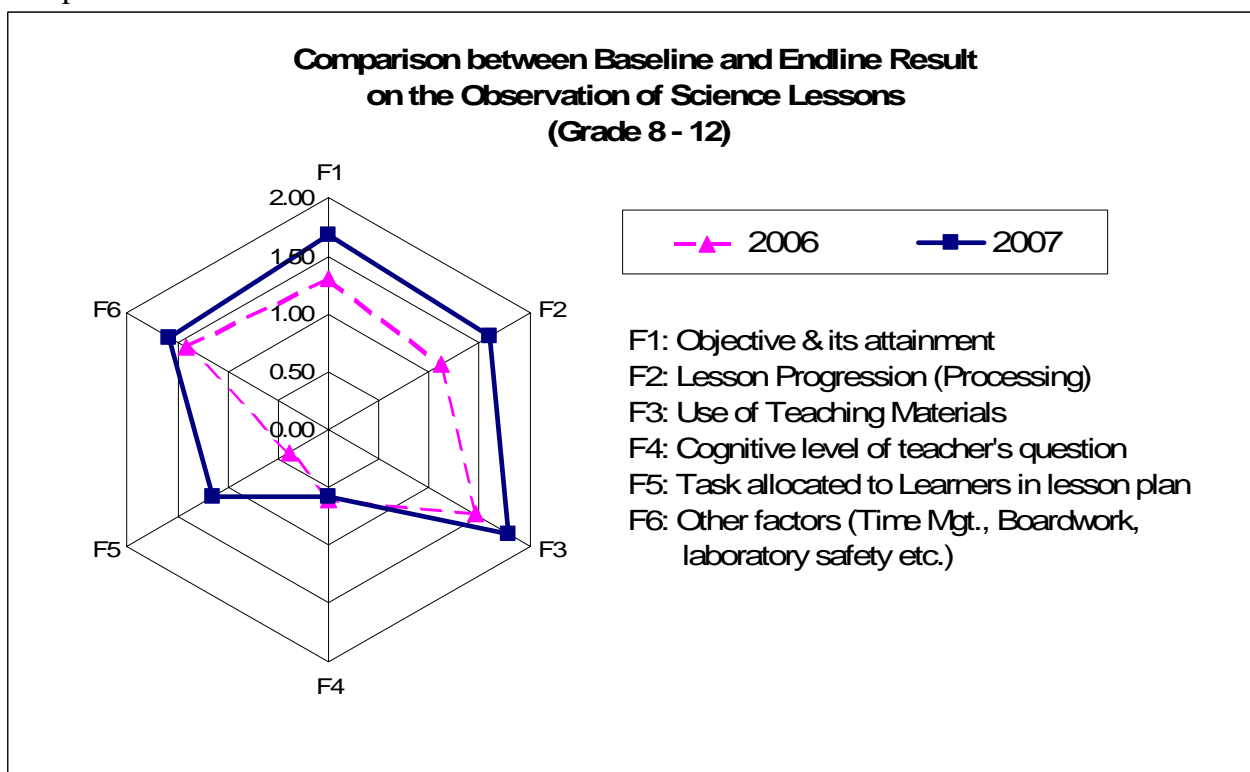
**Thank you very much for your kind cooperation!!**

**Sample for analyzing results on Baseline and End-line survey**

**1. Result on the Observation of Science Lessons (by Format 02)**

Analysis Factors	2006 (N=44)	2007 (N=29)
F1: Objective & its attainment	1.31	1.67
F2: Lesson Progression (Processing)	1.11	1.60
F3: Use of Teaching Materials	1.46	1.79
F4: Cognitive Level of Teacher's Questions	0.61	0.58
F5: Task allocated to learners in Lesson Plan	0.40	1.16
F6: Other factors (Time management, Board, work, Lab. Safety etc.)	1.41	1.59

Comparison between Baseline and Endline on the Observation of Science Lessons





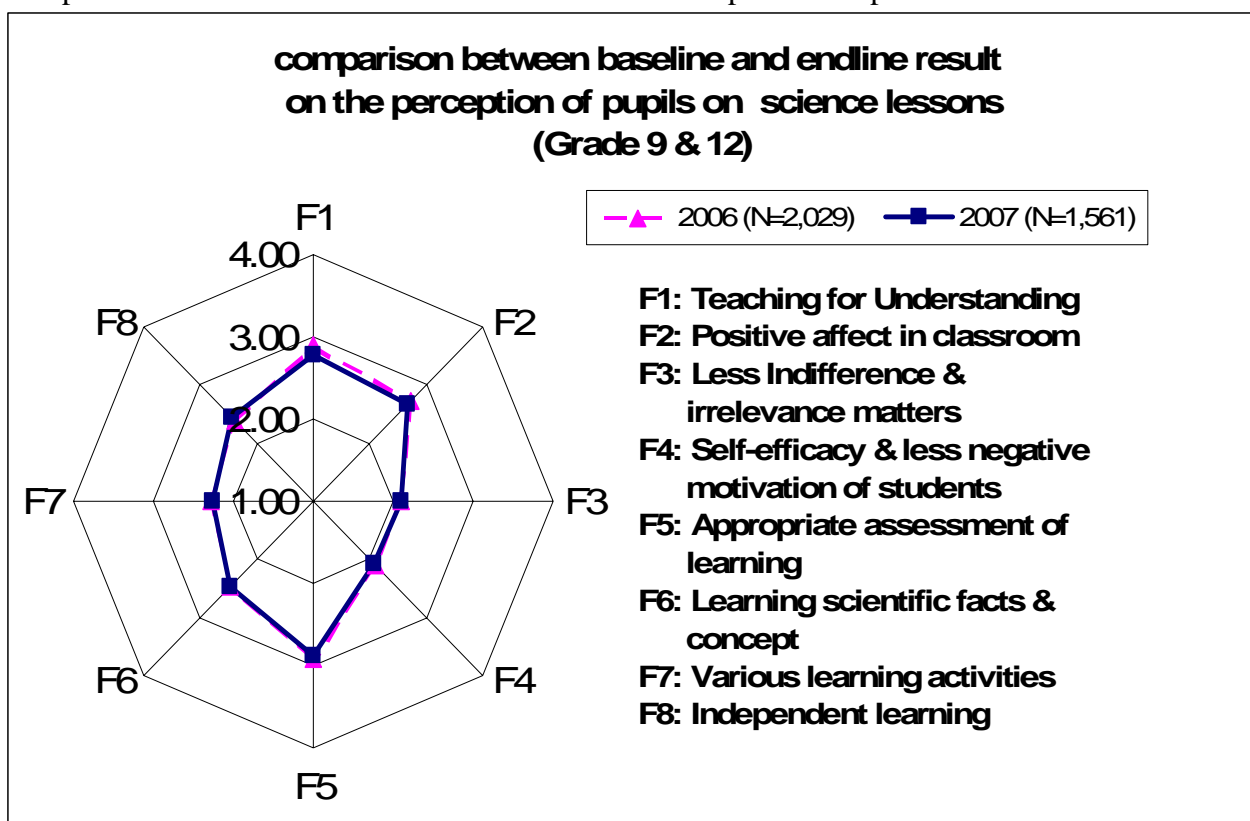
**Sample for analyzing results on Baseline and End-line survey**

**2. Result on the Perception of Pupils on Science Lessons (by Format 03)**

Result on the Perception of Pupils on Science Lessons

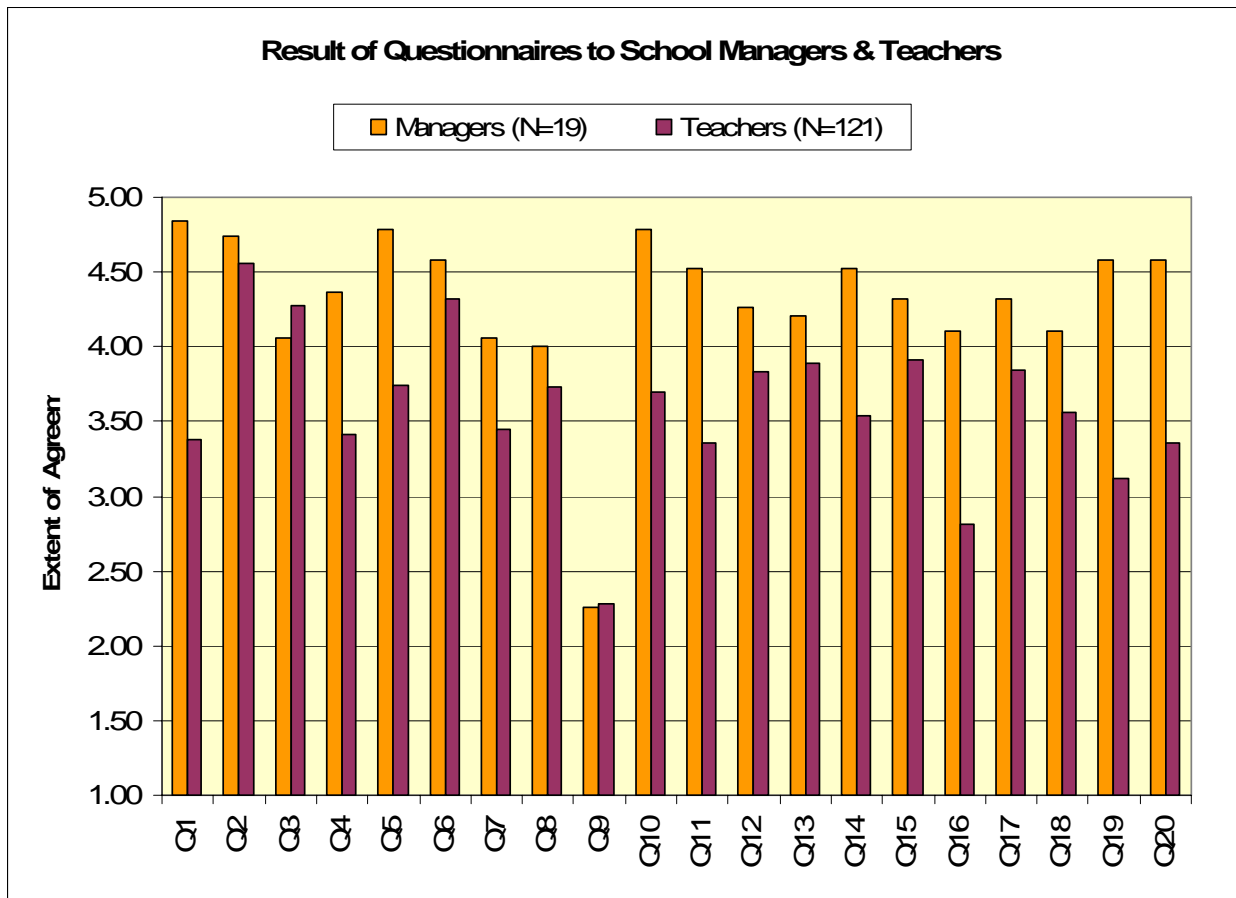
Analysis Factors	2006 (N=2,029)	2007 (N=1,561)
F1:Teaching for Understanding	2.91	2.78
F2:Positive affect in classroom	2.73	2.67
F3:Less indifference & irrelevance matters	2.10	2.09
F4:Self-efficacy & less negative motivation of students	2.10	2.08
F5:Appropriate assessment of learning	2.92	2.88
F6:Learning scientific facts & concepts	2.48	2.48
F7:Various learning activities	2.28	2.26
F8:Independent learning	2.41	2.44

Comparison between Baseline and End-line on the Perception of Pupils on Science Lessons

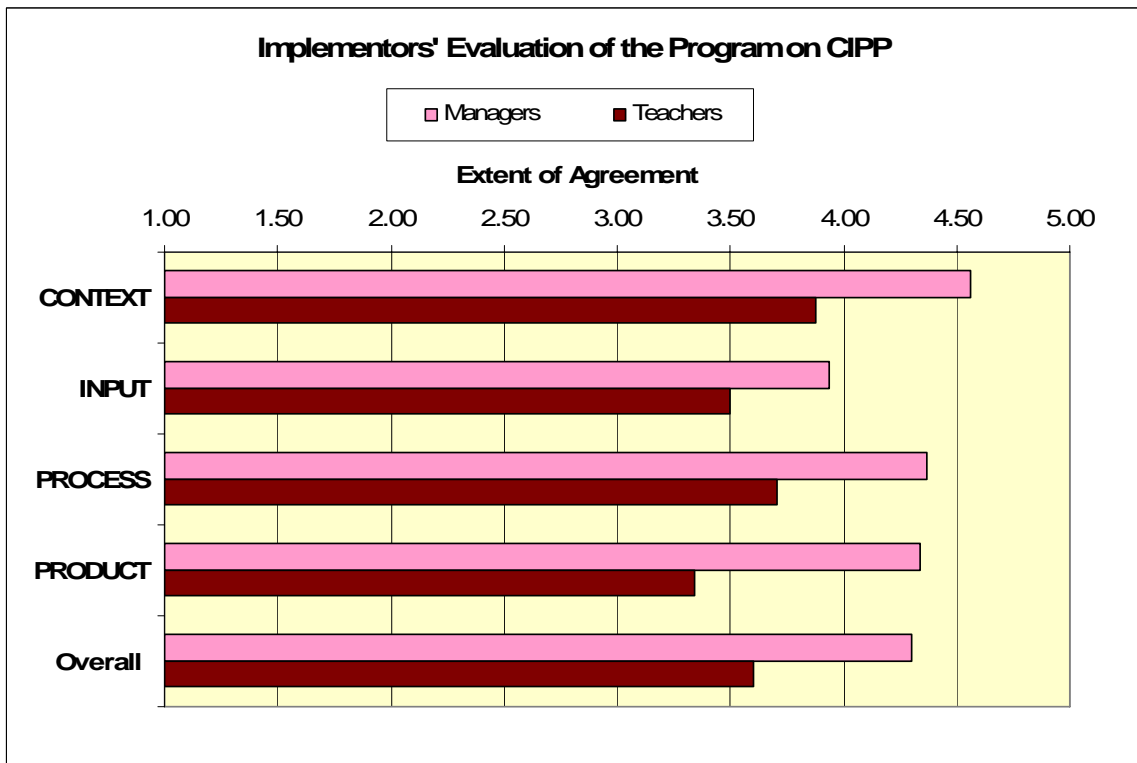


**Sample for analyzing CIPP components on the implementation of SBCPD**

Result of Questionnaires to School managers and Teachers (by Format 04 & 05)



Analysis by CIPP on the Implementation of the Program



**School-Based CPD Termly School Implementation Report**

Year: \_\_\_\_\_ Term: \_\_\_\_\_

**1. Conduct of Lesson Study and Major Outputs**

Month	Subject/Topic	Name of Teacher demonstrated	Name of Facilitator	Number of Teachers participated	Major outputs & learning
		1 <sup>st</sup> demo			
		Revised demo			
		1 <sup>st</sup> demo			
		Revised demo			
		1 <sup>st</sup> demo			
		Revised demo			

**2. Problems encountered and measures taken by the school**

Problems/Concerns encountered in lesson study	Measures taken by the school/teachers

Submitted by: Name of School: \_\_\_\_\_, District: \_\_\_\_\_ Date prepared: \_\_\_\_\_  
 Name of Headteacher: \_\_\_\_\_

*\*Please attach your own report on lesson study with lesson plans used by the teachers.*

*Sample Program for the 1<sup>st</sup> Stakeholders' Workshop:*

**School-Based CPD 1<sup>st</sup> STAKEHOLDERS' WORKSHOP**

FOR THE DISTRICTS OF \_\_\_\_\_ (Name of Districts)

ON \_\_\_\_\_ (Date)

**PROGRAM**

**DAY 1 – Plenary**

Time	Program	Facilitator
8:00 – 9:00	Registration of Participants	
9:00 – 10:00	Opening Program <ul style="list-style-type: none"> <li>- Prayer</li> <li>- Welcome Remarks</li> <li>- Introduction of Participants, Facilitators &amp; Project Officials</li> <li>- Official Opening</li> <li>- Confirmation on Workshop Schedule</li> <li>- Other Announcement</li> </ul>	Headteacher  PEO SESO-NS
10:00 – 11:00	Plenary Session; Program Scope <ul style="list-style-type: none"> <li>- Outline of School-based CPD program</li> </ul>	SEO-TED/SESO-NS
11:00 – 11:15	Short Break	
11:15 – 13:00	<ul style="list-style-type: none"> <li>- Introduction of Experience in Other Province / Country</li> <li>Video Show</li> </ul>	SESO-NS SESO-Math.
13:00 – 14:00	Lunch Break	
14:00 – 16:00	Plenary; Continuation <ul style="list-style-type: none"> <li>- Framework of SBCPD</li> <li>- Implementation Strategy</li> <li>- Open Discussion</li> </ul>	SEO-TED/SESO-NS
16:00 – 17:00	Group Work; District Planning <ul style="list-style-type: none"> <li>- Planning</li> <li>- Feedback</li> </ul>	

**DAY 2: For Facilitators, Deputy Heads, DRCCs, DESOs**

Time	Program	Facilitator
8:30 – 11:00	Session on Lesson Study and Facilitation <ul style="list-style-type: none"> <li>- Review of Lesson Study Cycle</li> <li>- Adult Learning and Facilitation</li> </ul>	PRCCs SESO-Math.
11:00 – 11:15	Short Break	
11:15 – 13:00	<ul style="list-style-type: none"> <li>- Effective Skills on Facilitation (including Group Work)</li> </ul>	SESO-Math.
13:00 – 14:00	Lunch Break	
14:00 – 17:00	Preparation of Demonstration on Facilitation <ul style="list-style-type: none"> <li>- Group meeting and Preparation of Lesson Plans for Day 3</li> </ul>	SBCPD Facilitators w/ SESO-NS, SESO-Math.

**DAY 2: For Headteachers, DEBS**

Time	Program	Facilitator
8:30 – 11:00	Session on Foundation of School Management <ul style="list-style-type: none"> <li>- Group Discussion on School Management</li> <li>- Factors affecting Effective School Management</li> </ul>	PEO, PESO, SPO
11:00 – 11:15	Short Break	
11:15 – 13:00	<ul style="list-style-type: none"> <li>- Factors affecting Effective School Management</li> </ul>	PEO, PESO, SPO
13:00 – 14:00	Lunch Break	
14:00 – 17:00	<ul style="list-style-type: none"> <li>- Sharing of Experience on School Management</li> </ul>	SESO-PS

**DAY 3: For Facilitators, Deputy Heads, DRCCs, DESOs**

Time	Program	Facilitator
8:30 – 11:00	Demonstration of Facilitation <ul style="list-style-type: none"> <li>- Demonstration Lesson at Kabwe High School</li> </ul>	SBCPD Facilitators w/ SESO-NS, SESO-Math.
11:00 – 11:15	Short Break	
11:15 – 13:00	<ul style="list-style-type: none"> <li>- Post-discussion as a Practice of Facilitation</li> <li>- Critiquing of Facilitation Effective Skills on Facilitation</li> </ul>	SBCPD Facilitators w/ SESO-NS, SESO-Math.
13:00 – 14:00	Lunch Break	
14:00 – 15:00	Closing Program (Plenary) <ul style="list-style-type: none"> <li>- Prayer</li> <li>- Closing Remarks</li> <li>- Output of Workshop</li> <li>- Official Closing</li> <li>- Announcement</li> </ul>	DEBS SEO-TED PEO

**DAY 3: For Headteachers, DEBS**

Time	Program	Facilitator
8:30 – 11:00	Session on Management of School-based CPD <ul style="list-style-type: none"> <li>- Group Discussion on the concerns on the current CPDs at schools</li> <li>- Feedback</li> </ul>	SEO-TED
11:00 – 11:15	Short Break	
11:15 – 13:00	<ul style="list-style-type: none"> <li>- Input on Effective Management of School CPD</li> </ul>	SEO-TED
13:00 – 14:00	Lunch Break	
14:00 – 15:00	Closing Program (Plenary) <ul style="list-style-type: none"> <li>- Prayer</li> <li>- Closing Remarks</li> <li>- Output of Workshop</li> <li>- Official Closing</li> <li>- Announcement</li> </ul>	DEBS SEO-TED PEO

*Sample Program for 2<sup>nd</sup> – 6<sup>th</sup> Stakeholders' Workshop:*

**School-Based CPD 3<sup>rd</sup> STAKEHOLDERS' WORKSHOP**

**FOR DISTRICTS OF MKUSHI, KAPIRI MPOSHI & CHIBOMBO  
ON 18-19 DECEMBER 2006**

**PROGRAM**

**DAY 0 (17<sup>th</sup> December 2006)--- Arrival of Participants from 16:00hrs**

**DAY 1 (18<sup>th</sup> December 2006)**

<b>Time</b>	<b>Program</b>		
8:00 – 9:00	Registration of Participants (DRCCs)		
9:00 – 9:45	Opening Program (Chaired by DEBS Mkushi) <ul style="list-style-type: none"> <li>- Prayer</li> <li>- Welcome Remarks --- Head of Host school</li> <li>- Introduction of Participants, Facilitators &amp; Project Officials --- EO-TED</li> <li>- Official Opening ---A/PEO</li> <li>- Announcement ---SESO-NS</li> </ul>		
9:45 – 10:30	Plenary session: Objectives & Expectations of workshop & Orientation of workshop program --- SESO-NS		
10:30 – 11:00	Break		
11:00 – 13:00	Parallel Sessions for each Group of District		
	<u>Mkushi District</u> (Facilitated by SESO-Math, PRCCs, Serenje) <ul style="list-style-type: none"> <li>- Sharing of experiences in the last term</li> </ul>	<u>Kapiri Mposhi District</u> (Facilitated by SEO-TED, PRCCs, Kabwe) <ul style="list-style-type: none"> <li>- Sharing of experiences in the last term</li> </ul>	<u>Chibombo District</u> (Facilitated by, EO-TED, SESO-NS, SPO) <ul style="list-style-type: none"> <li>- Sharing of experiences in the last term</li> </ul>
13:00 – 14:30	Lunch Break		
14:30 – 16:30	(Continuation) <ul style="list-style-type: none"> <li>- Evaluation &amp; Solutions for improvement</li> <li>- Rebuilding/Making of District Plan for the next term</li> </ul>	(Continuation) <ul style="list-style-type: none"> <li>- Evaluation &amp; Solutions for improvement</li> <li>- Rebuilding/Making of District Plan for the next term</li> </ul>	(Continuation) <ul style="list-style-type: none"> <li>- Evaluation &amp; Solutions for improvement</li> <li>- Rebuilding/Making of District Plan for the next term</li> </ul>
16:30 – 17:30	Plenary (Chaired by DEBS Kapiri Mposhi): <ul style="list-style-type: none"> <li>-Sharing of Major Experiences &amp; Solutions from District discussions (SEO-TED)</li> <li>-Grouping for Day 2 (By SESO-NS, SESO-Math.)</li> </ul>		

**DAY 2 (19<sup>th</sup> December 2006) For Facilitators, Deputy Heads, DRCCs, DESOs**

Time	Program		
	Group A	Group B	Group C
8:30 – 10:30	Student-Centered Learning based on ASEI/PDSI approach (By SESO-Math, PRCCs from Serenje)	Points for observing lessons (By PRCCs from Kabwe)	Effective questioning skills in science lesson (By SESO-NS)
10:30 – 11:00	Break		
11:00 – 13:00	Points for observing lessons (By PRCCs from Kabwe)	Effective questioning skills in science lesson (By SESO-NS)	Student-Centered Learning based on ASEI/PDSI approach (By SESO-Math, PRCCs from Serenje)
13:00 – 14:30	Lunch Break		
14:30 – 16:30	Effective questioning skills in science lesson (By SESO-NS)	Student-Centered Learning based on ASEI/PDSI approach (By SESO-Math, PRCCs from Serenje)	Points for observing lessons (By PRCCs from Kabwe)
16:30 – 17:00	Plenary: -Collection of School Reports and Lesson Plans used in the last term (By EO-TED) -Closing Program (Chaired by DEBS Chibombo)		

**DAY 2 (19<sup>th</sup> December 2006) For Headteachers, DEBS**

Time	Program		
	Group A	Group B	Group C
8:30 – 10:30	Sharing of Experience on School-based CPD (Lesson Study) in the 3rd term (By A/SPO, SESO-ODL)	Effective School Management (By PESO, Representatives of DEBS & Headteachers)	Effective Management for School-based CPD (By SEO-TED, EO-TED)
10:30 – 11:00	Break		
11:00 – 13:00	Effective School Management (By PESO, Representatives of DEBS & Headteachers)	Effective Management for School-based CPD (By SEO-TED, EO-TED)	Sharing of Experience on School-based CPD (Lesson Study) in the 3rd term (By A/SPO, SESO-ODL)
13:00 – 14:30	Lunch Break		
14:30 – 16:30	Effective Management for School-based CPD (By SEO-TED, EO-TED)	Sharing of Experience on School-based CPD (Lesson Study) in the 3rd term (By A/SPO, SESO-ODL)	Effective School Management (By PESO, Representatives of DEBS & Headteachers)
16:30 – 17:00	Plenary: -Collection of School Reports and Lesson Plans used in the last term (By EO-TED) -Closing Program (Chaired by DEBS Chibombo)		

*Sample Program for Facilitators' Workshop:*

**PROGRAM FOR 1<sup>ST</sup> SBCPD (SMASTE-CPD) FACILITATORS WORKSHOP**

**VENUE: KABWE HIGH SCHOOL**  
**DATE: 14<sup>TH</sup> TO 15<sup>TH</sup> DECEMBER 2006**

**DAY 1: Thursday 14/12/06**

Time	Activity	Chair/Facilitator
8:30 – 9:00	Registration	
9:00 – 10:00	<b>Opening Program</b> - Prayer - Welcoming Remarks - Introduction of Participants and Facilitators - Official Opening - Objectives of workshop and confirmation of program	Headteacher, Kabwe HS EO-TED A/PEO SESO(NS)
10:00 – 10:30	Short Break	
10:30 – 13:00	<b>Plenary Session 1</b> - Presentation of brief reports from old facilitators - Sharing experiences and discussion on the concerns - Grouping for the afternoon session	Chair: DESO, Serenje Facilitator: SEO-TED  SCHS, Serenje
13:00 – 14:30	Lunch Break	
14:30 – 17:00	<b>Group Session 1</b> Practical Skills and Information for each subject (Physics, Chemistry/Biology, Mathematics and Environmental science	Organizer: JTC members Facilitator: JOCVs

**DAY 2: Friday 15/12/06**

Time	Activity	Chair/Facilitator
9:00 – 11:00	<b>Group Session 2</b> Practical Skills and Information for each subject	Organizer: JTC members Facilitator: JOCVs
11:00 – 11:30	Short Break	
11:30 – 13:00	<b>Group Session 3</b> Practical Skills and Information for each subject	Organizer: JTC members Facilitator: JOCVs
13:00 – 14:30	Lunch Break	
14:30 – 16:00	<b>Plenary Session 2</b> - Zoning of Facilitators - Making of district work plans - Resolutions/Suggestion - Way forward	JTC members for each district
16:00 – 17:00	<b>Closing Program</b> - Summarization of Outputs - Official Closing - Announcement	Participants A/PEO

**Facilitator for Group Session**

Subject	Facilitator	Organizer
Mathematics	2 JOCV members	SESO (Math), SPO
Physics	2 JOCV members	SEO-TED, SCBS(Serenje)
Chemistry/Biology	2 JOCV members	SCHS(Serenje), SCHS(Kabwe)
Environmental Science	3 JOCV members	EO-TED



**Sample of District Implementation Plan**

**Ministry of Education  
Kapiri Mposhi District**

**SMASTE-CPD District Framework and Implementation Plan**

**SMASTE District Committee Members:**

1. MR. B. F. CHISAKA	DEBS	DEBS OFFICE
2. MR. HANDEMA S.	DESO	DEBS OFFICE
3. SR. ZIMBA A.	HEADTEACHER	MPUNDE HIGH SCHOOL
4. BRO. BUSHILYA	HEADTEACHER	ST. PAULS HIGH SCHOOL
5. MR. NONDO F.	HEADTEACHER	MUKONCHI HIGH SCHOOL
6. MR. MWELA I. C.	HEADTEACHER	PALAMEDES BASIC SCHOOL
7. MRS. MIYOBA	HEADTEACHER	CHIBWE BASIC SCHOOL
8. MR. HIMOONGA	HEADTEACHER	CHILUMBA BASIC SCHOOL
9. MR. MUTAMBO	HEADTEACHER	LUKOMBA BASIC SCHOOL
10. MRS. KASONDE E. K.	FACILITATOR	LUKANDA BASIC SCHOOL
11. MR. KANDINDA B.	FACILITATOR	CHAMBULUMINA BASIC SCHOOL
12. MR. MUSONDA R.	FACILITATOR	PALAMEDES BASIC SCHOOL
13. MR. MANDE J.	FACILITATOR	MUKONCHI HIGH SCHOOL
14. MR. SINYIBULULA	FACILITATOR	MPUNDE HIGH SCHOOL
15. MR. SAKALA	DRCC	DEBS OFFICE

**Allocation of Zones/Schools for SMASTE-CPD:**

Cluster	Zones	Schools	Assigned Facilitator
A	Iwonde/Mukubwe	1. Lwamala 2. Ngabwe 3. Mumbachala 4. Iwonde 5. Chilwa Island 6. Mukubwe 7. Mutende 8. Shamputa 9. Mwangule	To be identified (2 people)
B	Mpunde	1. Chipeso 2. Kakutwe 3. Chimwala 4. Lwachele 5. St. Joseph 6. Fibale 7. Mpunde 8. Kachika	Sinyibulula J Kakwama
C	Chilumba	1. Kato 2. Shamabansa 3. Kapandwe 4. Muchinga 5. Kantupu 6. Kaswende 7. Meembe 8. Nansenga 9. Chilumba	Hachofwe C Habeenzu
D	Lanshimba/Sungula	1. Kalenda 2. Chimbo 3. Kabwale 4. Sungula 5. Muteteshi 6. Lwanshimba 7. Nchembwe 8. Imansa 9. Mufukushi 10. Mukabe	Taulo J Siaswana Kasongo
E	Kapiri	1. Kaunga 2. Kamboshya 3. Chisamba 4. Matiyo 5. Lukanda 6. Hill-top 7. Mulonga 8. Palamedes 9. Kapiri 10. Chisengamanga	Kasonde E Chicheleko C. Musonda R Mhafuta
F	Mafwasa/Nkole	1. Chibile 2. Mafwasa 3. Kapisu 4. Chambulumina 5. Renato 6. Mobe 7. Rubera 8. Fibawe 9. Nkole	Kandinda B Phiri M Chifunda M
G	Lukomba/Lunchu	1. Kaundu 2. Mubalashi 3. Matuka 4. Chakomo 5. Fitalo 6. Fikola 7. Lukomba 8. George Ndashe 9. Lunchu 10. Yongwe 11. Kabonga 12. Kabalenga 13. Kapila 14. Kanendele	Kafumo B Nkhoma J Nsonde P
H	Mukonchi	1. Kanyemu 2. Chamakamba 3. Mubofwe 4. Kamisenga 5. Kamulobwe 6. Makafu 7. Mukonchi High 8. Mukonchi Basic	Mande J Mendulo P
I	Chibwe	1. Muchinga 2. Kakwalesa 3. Kalundu 4. Ntasa 5. Chibwe 6. St. Pauls 7. Mondake 8. St Pauls Basic	Musonda I Chiboshi C
J	Likumbi	1. Chishinka 2. Manyinya 3. Lunsemfwa 4. Kamwanya 5. Likumbi 6. Kabanga 7. Kampumba 8. Mulenge 9. Ilinga 10. Mulungushi 11. Katelemuna	Bwalya AM Hachibola

## SMASTE-CPD District Implementation Programme

S/N	DATE	ACTIVITY	OBJECTIVE	TARGET	VENUE	DURATION	IMPLEMENTOR	RESOURCES	COST / SOURCE
1	05/05/06	District Committee Meeting	To strategize district implementation plan	District Committee members	Kapiri	3 hrs	DESO DRCC	Paper	25 000 (from Sector/GRZ)
2	09/05/06	Meeting of Facilitators	To prepare for the sensitization meetings	All Facilitators in the district	District Resource Center	1 day	DESO DRCC	Paper Flip chart Markers	25 000 30 000 50 000 (from sector/GRZ)
3	11/05/06	Sensitization Meeting on SMASTE-CPD	To sensitize school managers in zones of; Kapiri Mafwasa Sungula Luanshimba	All heads & deputy heads in the zones of; Kapiri Mafwasa Sungula Luanshimba	Kaipiri	1 day	DESO 2 Facilitators (Kasonde, Musonda) DRCC	Flip chart Markers Paper Fuel Allowances bostic	30 000 90 000 25 000 200 000 200 000 20 000 (from sector/GRZ)
4	12/05/06	Sensitization Meeting on SMASTE-CPD	To sensitize school managers in zones of; Lukomba Lunchu	All heads & deputy heads in the zones of; Lukomba Lunchu	Lukomba Zone R/C	1 day	DESO 2 Facilitators (Kandinda, Mande) DRCC	Flip chart Markers Paper Fuel Allowances bostic	30 000 90 000 25 000 200 000 200 000 20 000 (from sector/GRZ)
5	19/05/06	Sensitization Meeting on SMASTE-CPD	To sensitize school managers in zones of; Mpunde Iwonde Chilumba Mukubwe	All heads & deputy heads in the zones of; Mpunde Iwonde Chilumba Mukubwe	Mpunde High School	1 day	DESO 3 Facilitators (Kasonde, Musonda, Sinyibulula)	Flip chart Markers Paper Fuel Allowances bostic	30 000 90 000 25 000 200 000 200 000 20 000 (from sector/GRZ)

(below omission)

*Sample School Implementation Plan:*

**MUSOPELO UPPER BASIC SCHOOL SPRINT/SMASTE-CPD WORKPLAN --- TERM-1, 2007**

<b>DATE</b>	<b>ACTIVITY/TOPIC</b>	<b>FACILITATOR</b>	<b>CHAIRPERSON</b>	<b>TARGET</b>
<b>February</b>				
1/2/07	<b>HIM</b> "Planning School Activities in the Term"	B. Mpande (D/H teacher)	B. Mpande (D/H teacher)	All teachers
15/2/07	<b>TGM</b> SMASTE Orientation (Review of Lesson Study Cycle and Activities, Identification of Problems and Topics difficult to teach in the term)	B. Mpande (D/H teacher)	M. Mwando	All teachers
21/2/07	<b>TGM</b> Planning of Demo Lessons	M. Mwando	D. Bulaya	All teachers (Lesson plan drafted by G9 Trs.)
22/2/07	<b>TGM</b> Grade 9 SMASTE Mathematics Demo Lesson Discussion after the lesson	N. Nyirongo	S. Chibale	All teachers
28/2/07	<b>HIM</b> I.R.I Workshop	M. B. Goma (H/teacher) D. Bulaya	O. Musonda	All teachers
<b>March</b>				
1/3/07	<b>TGM</b> Grade 9 SMASTE Mathematics Revised Lesson Discussion after the lesson	N. Nyirongo	B. Kayala	All teachers
7/3/07	<b>HIM</b> "Gender across the curriculum"	O. Musonda	D. Bulaya	All teachers
8/3/07	<b>TGM</b> Grade 7 SMASTE Mathematics Demo Lesson Discussion after the lesson	S. Chibale	O. Musonda	All teachers (Lesson plan drafted by G7 Trs.)
14/3/07	<b>TGM</b> Grade 7 SMASTE Mathematics Revised Lesson Discussion after the lesson	B. Kayala	A. C. Masaninga	All teachers
21/3/07	<b>HIM</b> "Review of Mathematics Lessons in the term" (Compilation of lesson plans and Minutes of meetings)	A. C. Masaninga	M. Mwando	All teachers

(below omission)

## Sample Lesson Plan (Science) for 1<sup>st</sup> Demonstration Lesson:

**SCHOOL:** Kalilwe Basic School

**DATE:** 27/10/2006

**SUBJECT:** Environmental Science

**TOPIC:** Current, Potential Difference, Resistance and Electric Power

**SUBTOPIC:** Electrical Appliances and Fuses

**CLASS:** 9E

**RATIONALE:** Electrical appliances have made our lives easier because we are able to do things quickly with less effort. However, as when it comes to use these appliances, we must bear in mind that the rate at which power is consumed is different for different appliances. However, we calculate this rate and help conserve power by using the appliances correctly.

**OBJECTIVES:** By the end of the lesson PSBAT:

- i) Give examples of electrical appliances
- ii) Using the formula for calculating power, voltage and current.

**PREREQUISITE SKILLS AND KNOWLEDGE:** Pupils know that electrical appliances use electricity.

**REFERENCE BOOKS:** Environmental Science pupils' book 9

**TEACHING AND LEARNING MATERIALS/RESOURCES:** Electrical appliances such as bulbs, pressing iron etc.

### LESSON PROCESS:

STAGE	TEACHING/LEARNING ACTIVITIES	LEARNING POINTS
INTRODUCTION	Ask questions as some sort of revision, 1. What instrument is used to measure electric current? 2. What are the units for this electric current?	- Ammeter - Ampere (amps)
DEVELOPMENT	STEP 1 Tell pupils that the current drawn by an appliance is called power rating or wattage.  The rate at which current is used by an appliance.  What is an electrical appliance?  Power is indicated on the electrical appliance.  Give formula for Power.  STEP 2 Group work Distribute some electrical appliances to the groups and let pupils to identify rating on each appliance.  STEP 3 Ask pupils to present their findings.	- Power is the rate at which current is drawn by an appliance - Power is the rate at which electric current is used up. - Power is measured in watts (wattage) W. - An electrical appliance is a device that uses electricity.
CONCLUSION	Exercise. 1. What is the unit of power? 2. A current of 6A flows through a bulb connected to a 240V supply. Calculate its power. 3. An electric motor is rated 36W, 12V. What current does the appliance use?	- Watt. - $P=1440$ watts - $I=3A$

**Sample Lesson Plan (Science) for Revised Lesson (2<sup>nd</sup> Demonstration Lesson):**

**SCHOOL:** Kalilwe Basic School  
**SUBJECT:** Environmental Science  
**TOPIC:** Current, Potential Difference, Resistance and Electric Power  
**SUBTOPIC:** Electrical Appliances and Fuses  
**CLASS:** 9D **No. OF PUPILS:** 50

**DATE:** 01/11/2006  
**DURATION:** 1 hr 20 mins

**RATIONALE:**

- 1) In this lesson, pupils are expected to understand the meanings of electrical ratings labelled on electrical appliances and to use formula for calculating power to get the size of electric current which is used by the appliances.
- 2) Electrical appliances have made our lives easier because we are able to do things quickly with less effort. However, as when it comes to use these appliances, we must bear in mind that the rate at which power is consumed is different for different appliances. This would also help conserve power by using the appliances correctly.
- 3) Based on discovery approach, in this lesson, sample electrical appliances are shown to the pupils to find ratings labelled on them. After this activity, pupils are asked to calculate the size of electric current used by that appliance.
- 4) This lesson is the 6<sup>th</sup> period of 11 lessons which covers the topic.

**OBJECTIVES:** By the end of the lesson PSBAT:

- i) Give examples of electrical appliances
- ii) Identify the ratings labelled on each electrical appliance
- iii) Calculate current used by each electrical appliance in reference to the ratings labelled on it.

**PREREQUISITE SKILLS AND KNOWLEDGE:** Pupils know that electrical appliances use electricity.

**REFERENCE BOOKS:** Environmental Science pupils’ book 9

**TEACHING AND LEARNING MATERIALS/RESOURCES:** Electrical appliances such as electrical jag, pressing iron, radio etc.

**LESSON PROCESS:**

STAGE	TEACHING/LEARNING ACTIVITIES	LEARNING POINTS
INTRODUCTION (5 min.)	Ask questions as some sort of revision, 1 What instrument is used to measure electric current? 2 What are the units for the followings? - Electric current - Voltage - Resistance - Power	- Ammeter  - Ampere (amps) - Volts - Ohms - Watts
DEVELOPMENT (60 min.)	<b>STEP 1</b> Teacher shows electrical (vacuum) cleaner to the pupils and ask the following questions to find out what pupils know about power. “What is this number showing 1200W?”  Pupils tell 1200W means strength of the cleaner. Pupils tell it’s a power of the cleaner.  Teacher confirms if all the electrical appliances have this W.  Pupils tell all the appliances have it, frequently	- Power is the rate at which current is drawn by an appliance - Power is the rate at which

	<p>labelled.</p> <p>Teacher introduces formula for power.</p> <p><b>STEP 2</b> Teacher distributes pupils into 6 groups and gives some electrical appliances to each group.</p> <p>Teacher will ask; “How can we find the size of electric current which is used by each appliance?”</p> <p>Pupils identify labelled power on the appliances. Pupils discuss how to calculate the current using formula for power. Some pupils find current can be found with dividing power by voltage.</p> <p><b>STEP 3</b> Pupils are requested to present their findings.</p> <p>Teacher lets pupil to explain what they have discovered through activity.</p> <p>Teacher confirms if the calculations are collect.</p> <p>Teacher asks; “What we should do to avoid large current flow in our houses?”</p> <p>Pupils answer we should not use appliances with large power in the same time.</p>	<p>electric current is used up.</p> <ul style="list-style-type: none"> <li>- Power is measured in watts (wattage) W.</li> <li>- An electrical appliance is a device that uses electricity.</li> </ul> <ul style="list-style-type: none"> <li>- Let pupils to discover that electric current can be found as below. <math>I = P / V</math></li> </ul>
<p><b>CONCLUSION</b> (15 min.)</p>	<p>Pupils are asked to have exercise.</p> <ol style="list-style-type: none"> <li>1. What is the unit of power?</li> <li>2. A current of 6A flows through a bulb connected to a 240V supply. Calculate its power.</li> <li>3. An electric motor is rated 36W, 12V. What current does the appliance use?</li> <li>4. Write the reason why it is not recommended for us to use appliances with big power in the same time?</li> </ol>	<ul style="list-style-type: none"> <li>- Watt.</li> <li>- P=1440 watts</li> </ul> <ul style="list-style-type: none"> <li>- I=3A</li> </ul> <p>Because it causes big current which break the circuit in the house.</p>

**Evaluation:**

- 1) Were the pupils able to give samples of electric appliances?
- 2) Were the pupils able to identify the ratings labelled on the appliances?
- 3) Were the pupils able to find the process of calculating electric current using the ratings on the appliances and get correct answers?

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