



CENTRE FOR MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION IN AFRICA
(CEMASTE)

SMASE PRIMARY LESSON STUDY MODULE

2016



CEMASTE, ISO 9001:2008 CERTIFIED

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(CEMASTEА)

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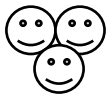

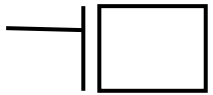

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Acronyms and Abbreviations

ASEI	Activity Student Experiment Improvisation
CEMASTEА	Centre for Mathematics, Science and Technology Education in Africa
INSET	In-service Education and Training
KNEC	Kenya National Examination Council
LSG	Lesson study group
MoEST	Ministry of Education, Science and Technology
PDSI	Plan, Do, See and Improve
TAC	Teachers Advisory Centre
TSC	Teachers Service Commission
QASO	Quality Assurance Officer

Symbols

Symbol	Meaning
	Participants to reflect on the issues at hand either individually or in groups. Guidance will be provided by the facilitators.
	Participants to work and report on a given activity as a group.
	A question to be answered by participants. They may work on the questions either individually or in groups. Guidance will be provided by the facilitators
	Enclosure for activity to be worked on by participants either individually or in groups or possible responses to a question posed Used in combination with other symbols.
	Expected or possible responses to a question posed

Foreword

The mandate of the Center for Mathematics Science and Technology Education in Africa (CEMASTEА) is the continuous professional development of teachers of mathematics and science in Kenya and the African region. One of the strategies for CPDT is lesson study which aims to develop school based communities of practice. This module has been developed in order to ensure quality implementation of lesson study at primary school level.

The module employs an interactive approach to assist you participate and engage in a variety of activities such as individual reflections, group discussions and hands-on activities. Each unit in the module emphasizes specific aspects that are expected to translate to better interactions with your learners.

Upon completion of this module, you will be enriched in knowledge; skills and attitudes in lesson study which will lead to an establishment of professional learning communities of teachers who interact regularly for problem solving, knowledge sharing, synergies across units and use of resources. It will also help in keeping abreast with changes in innovation, acquiring new strategies and equally see a transformation in your own classroom practice for improved learning.

Enjoy your learning.

Stephen M. Njoroge
Director, CEMASTEА

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Introduction

Welcome to this module on lesson study. The module consists of four units, namely sharing of classroom experiences, lesson study process, lesson observation skills and lesson study management. This module is interactive and comprises of expositions, reflections and activities that will enable you to appreciate the importance of lesson study as an approach of continuous improvement in teaching and learning. The module also helps you to appreciate the need for personal continuous professional growth. There is a guideline on implementation of lesson study which you may use as a further reference.

Rationale

There have been several interventions to improve classroom practices one of them being ASEI-PDSI. Further it has been noticed that ASEI-PDSI has not been properly entrenched as a classroom practice despite the four basic SMASE cycles that teachers have been taken through. The MoEST in conjunction with JICA identified lesson study as one of the most effective ways of improving teaching and learning at school level. A group of 81 officers have been trained at Naruto University of Education (NUE) in Japan on the concept of lesson study. These officers were to cascade the skills and knowledge on lesson study at various levels up to school level

This module is intended to offer you a uniform approach in cascading lesson study.

Goal

The goal of this module is to capacity build you on lesson study as a professional practice for improved teaching and learning

Objectives

By the end of the module you should be able to:

1. share good classroom practices
2. build capacity on the lesson study process
3. acquire lesson observation skills
4. entrench the practice of lesson study at school level
5. enhance professional development

Outcomes

It is expected that you will;

1. demonstrate the process of lesson study
2. embrace culture of continuous professional learning and practice

UNIT ONE: SHARING EXPERIENCES ON CLASSROOM PRACTICES

1.0 Introduction

Welcome to unit one of this module. In this unit we will share experiences on classroom practices. The unit comprises of rationale, goal, objectives and learning outcomes. A discussion task is also given where you will share experiences.

1.2 Rationale

It has been observed that most teachers like working alone even when they are confronted with a challenge in the cause of their teaching. Good practices are kept as personal secrets. Such an arrangement builds a community where there is limited sharing of knowledge, approaches and common ground for learning improvement. There is need for teachers to embrace more an approach where there is open sharing of best classroom practices.

In the course of your teaching, you may either have had teaching and learning successes or encountered various challenges proved difficult to address. This session will accord you an opportunity to share your experiences and spread the good classroom practices.

1.3 Objectives

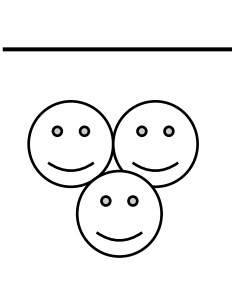
By the end of this session you will be able to:

- a) share good classroom practices
- b) build professional learning community at school level
- c) appreciate the importance of networking among your colleagues.

1.4 Learning outcomes

- 1. Free sharing of teaching and learning experiences
- 2. Teachers who are eager to continuously work to improve on their classroom practice

1.5 Discussion activities

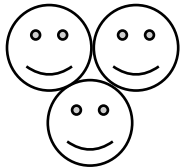


Activity 1:

In the course of your teaching, you might have come across teaching and learning challenges.

- 1. List some of the challenges
- 2. How did you overcome these challenges? Fill your responses in the table below

	Challenges	How you overcame the challenge



Activity 2:

1. What are your thoughts on the strategies you chose to address the challenges in activity 1 above
2. Discuss some benefits of involving your colleagues in addressing the challenges above.

1.6 Conclusion

You could have used various ways to address the challenges that you faced in your teaching. A more structured model of addressing teaching and learning challenges that allows continuous improvement is lesson study. This will be discussed in detail in the next session.

UNIT TWO: LESSON STUDY

2.0 Introduction

Welcome to unit two of this module. This session consists of rationale, objectives, learning outcomes and information detailing the process of lesson study.

2.1 Rationale

The SMASE Project came to an end in 2013 and became a programme of the Ministry of Education Science and Technology. A baseline survey carried out by CEMASTE A in 2009 and a situational analysis, also carried out by CEMASTE A in 2014 revealed weak practice of ASEI-PDSI in the classroom. Only three teachers per school were trained during the implementation of the SMASE Project on ASEI-PDSI and were expected to induct others on the ASEI-PDSI practices. In order to strengthen the practice, MOEST through CEMASTE A identified lesson study as one of the teacher continuous professional development school model to entrench ASEI-PDSI in the classroom.

2.2 Objectives

By the end of the session, you should be able to:

- a) describe the lesson study process
- b) enhance their capacity to implement lesson study
- c) outline their roles in enhancing ASEI-PDSI practices in the classroom
- d) appreciate the role of lesson study in building community of professional learning community

2.3 Learning outcomes

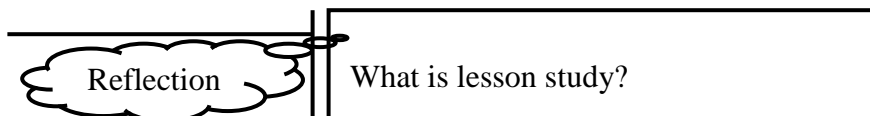
- i. Participants are able to describe the process of lesson study
- ii. Participants are able to illustrate how lesson study process can be used to improve, sustain application ASEI- PDSI practice in the classroom.

2.4 Background

Since teachers are one of the main players in the education system, supporting them to realize their full potential is essential to enhancing the quality of learning. A teacher is initiated into the teaching profession at pre-service after which the teacher needs constant updating on both technological and curriculum changes in order to address ever changing social and classroom environment.

Teacher professional development can either be at school or outside the school. On site, at place of work professional development has been proved to be more effective towards realizing improvement and better result due to its focus on prevalent needs and challenges. School-based teacher development programmes, such as lesson study, have been shown to continuously improve both teacher and learners performance besides being affordable and convenient.

2.5 Lesson Study

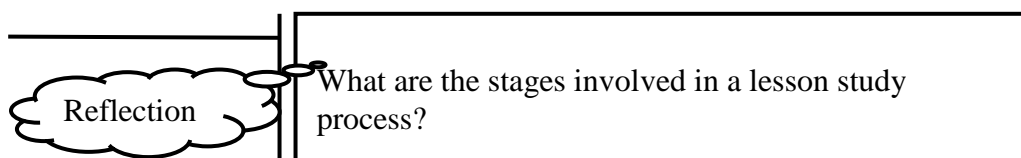


Lesson study is a process carried out by a team of teachers to improve the quality of teaching and learning in a classroom. It focuses on enhancing teachers' capability in teaching for improved learning outcomes. Quality of teaching/learning is normally evidenced by learning outcome.

Lesson study is therefore a teacher's professional development activity which can either be at the school or outside the school. Lesson study provides means of continuous improvement in the quality of a lesson as the focus should be on:

- ideal lesson
- learning process
- appropriateness of teaching/learning materials and activities
- data/information collection
- subject content knowledge
- quality of reflection meetings after lesson
- data analysis and interpretation for action (s)

2.6 Stages of lesson study





There are four main stages of lesson study:

a) Identification of the Problem

The teachers should identify the challenges and/or difficulties in the teaching and learning. After which they agree on a topic in which the study lesson is to be planned.

b) Lesson preparation or planning



Fig. 1

Thorough planning could be done collectively by all the teachers or {in some cases a teacher could be assigned to prepare and then invite the other teachers to come and observe his or her planned lesson and give feedback. Teachers must anticipate the learners' responses and put these in the lesson plan.

c) Implementation



Fig. 2



Fig. 3

One team member conducts the planned lesson while the others observe and collect data on strengths, weaknesses and aspects for improvement. During the delivery of the planned lesson observing teachers must not make any comment.

c) Post lesson meeting



Fig. 4

The data gathered during the lesson observation is analysed, discussed and used to improve the lesson. The teacher who taught starts by giving his opinion/comments on strong and weak points about the lesson and then observers give theirs followed by a discussion on whatever should be improved .

Re-teaching of the re-planned lesson in a different class can take place but not always. This is meant to incorporate the improvements suggested during the feedback.

It is important to note that lesson study is not so much about reaching *consensus* among the teachers on the best teaching approach, but it is about *deepening understanding* (knowledge) and enhancing skills of teaching a certain concept.

The following diagram helps illustrate the 4 stages of lesson study.

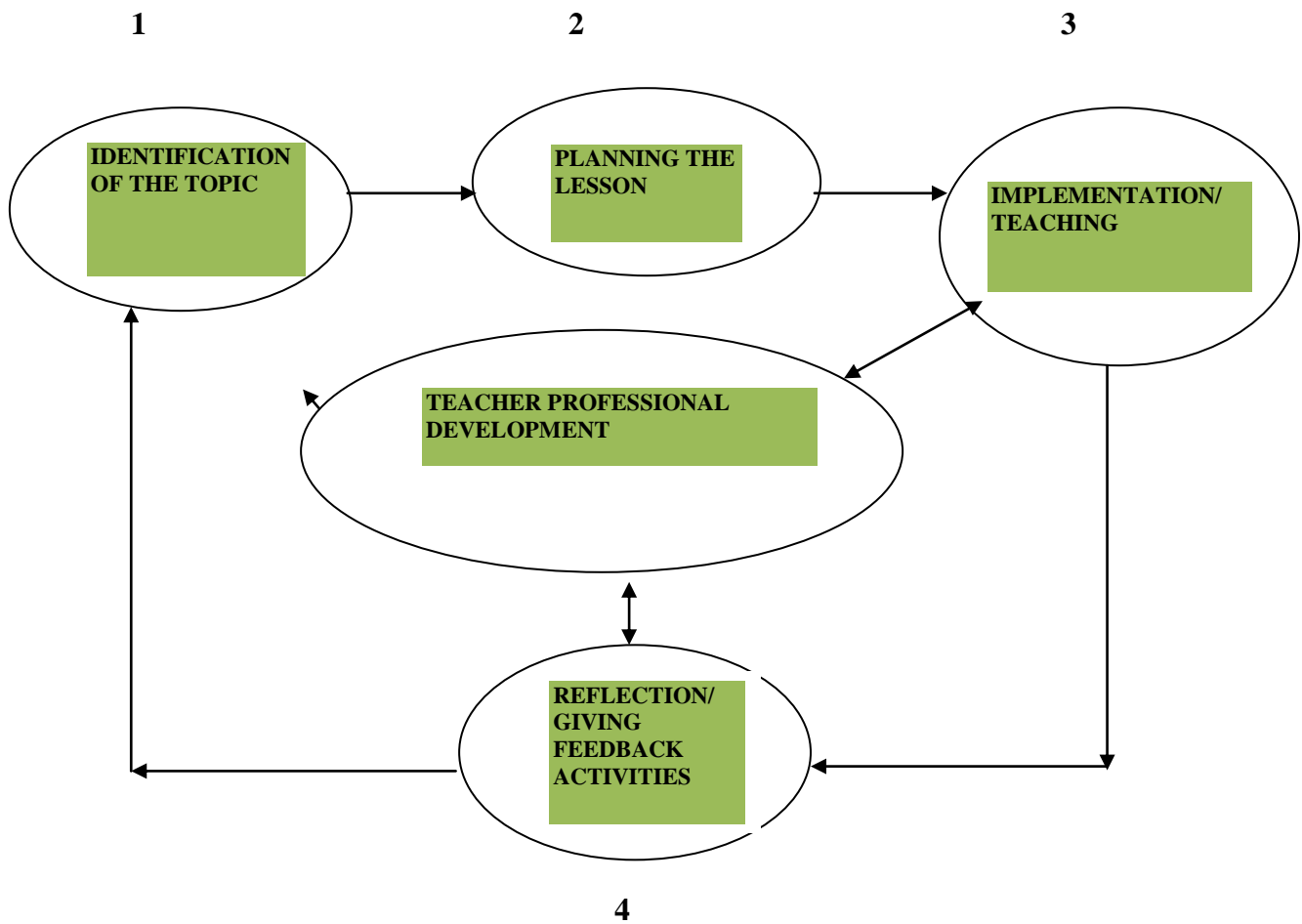
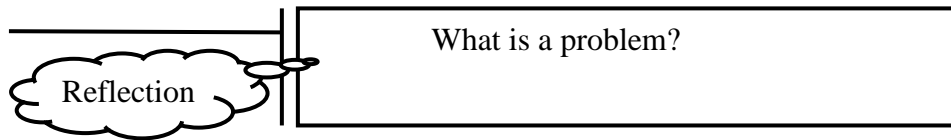


Fig. 5



A problem is any challenge that can hinder effective learning. Such problems could be a result of teaching methodology, content or learner characteristics..

2.7 Identification of Problems of Learners

Learners' problems can be identified through marking learners work, listening to explanations of their solutions, interviewing the learners, observing teams as they carry out practical activities, KCPE reports and curriculum content. In addition errors that learners make and the misconceptions they have can help one to identify a problem for lesson study.

Examples of Problems

In lesson study, a problem can either be general (e.g. to awaken learners' interest in the subject) specific to a subject (e.g., to improve learners' understanding of how to add fractions with unlike denominators). A problem may be categorised further into theme(s) to be addressed in lesson(s) as shown in the following examples:

- a) Problem: Learners do not express their opinions and ideas in the classroom.

Theme: *Communication skills*

→Focus: Lessons that foster the ability of learners to express their own ideas and opinions effectively.

- b) Problem: Learners have difficulties to communicate with and learn from each other. (

Theme: *Communication skills, Collaborative skills*

→Focus: Lessons that strategizes on group work and think pair and share to enable learners communicate effectively and willingly to help each other.

- c) Problem: Learners tend to memorize facts and avoid thinking by themselves.

Theme: Fostering individual thinking

→Focus: Fostering the attitudes and the ability of the learners for independent thinking.

- d) Problem: learners have difficulties in generalizing concrete facts into concepts

→Focus: Strategize by presenting a situation that allow learners discover how a rule is formulated e.g. the area of a circle –how does pie arise

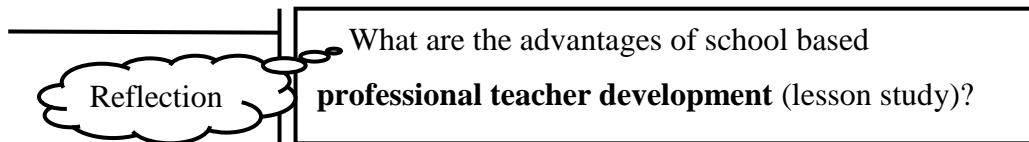
Theme: Fostering inferential thinking

- e) Problem: Learners are not given a chance to predict when they conduct experiments.

→Focus: Science lessons that encourage learners to predict expectations.

Theme: Deductive reasoning through prediction, observation and explanation (POE) model

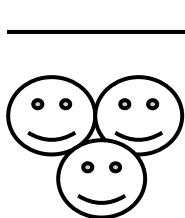
2.8 Advantages of school -based professional teacher development (Lesson Study)



You may have come up with the following as some advantages of lesson study

- a) School based lesson study is cost effective .Therefore this type of lesson study can be carried out in any school in the country as it has little cost implications.
- b) It addresses actual existing problems at school, since it deals with regular classes and learners (it is improvement in context).
- c) Teachers are not withdrawn from the school and hence it does not interfere with the school.
- d) It builds teamwork and collegiality among teachers

2.9 Discussion Activity



1. Discuss applicability of the lesson study in your school
2. Discuss the challenges you anticipate in the implementation of the lesson study in your school and suggest solutions to these challenges
3. Discuss how lesson study can be used to sustain ASEI-PDSI practice in the classroom

2.10 Conclusion

Adaptation of school based lesson study culture is very crucial because it enhances teachers' pedagogical skills which will improve learner's achievement. Aspects of a good lesson should form the basis of lesson assessment and evaluation of lessons during actualization of ASEI-PDSI. The success of lesson as a professional development activity will largely depend on the support and enthusiasm of the head teacher as the driver to success in the school.

UNIT THREE: LESSON OBSERVATION SKILLS AND GUIDE



Fig. 6

3.1 Introduction

Welcome to Unit Three of this module. The unit has two sections. Section one consists of the introduction, rationale, and objectives. In Section Two, lesson observations skills and observation guide are discussed. The section also presents an activity that you will find useful in developing further your lesson observation skills.

3.2 Rationale

One of the main stages of lesson study is the lesson implementation (or presentation), which goes concurrently with the observation by the members of the lesson study group (other than the lesson presenter) and other observers. The members of the group, in particular, need to capture what takes place in the lesson in a precise and objective manner. They also need to have a common understanding of the expectations in a good lesson. In this regard, the lesson

observation skills and use of observation guide are essential in enhancing objectivity and harmonized observation of the lessons. This Unit therefore gives you an opportunity to develop your observation skills and familiarize yourself with a sample of an observation guide.

3.3 Objective

To develop further your skills in observing lessons.

3.4 Lesson Observation Skills

Lesson study is about improving learning through addressing some existing teaching or learners' needs. During the lesson presentation, emphasis should always be on observing how learning is taking place and not on assessing the teacher. The tendency to assess the teacher during lesson study should be avoided since this will negate the very purpose of the process. This is because if a lesson observation appears to be a forum for assessing teachers then more and more teachers will feel shy to be presenters, hence jeopardizing the goal, effectiveness and sustainability of lesson study practice in the school. Putting more focus on learning is, however, not intended to ignore the importance of other attributes of the teacher in the learning process. Attributes such as fluency in the language of communication and sincerity are very important and teachers should uphold them always.

Observation that is more focused on learning than on the teacher therefore requires certain skills and common understanding and objectives. Like other skills, the observation skills are developed through practice and reflection. The skills are applied during observation and demonstrated during the post-lesson discussion. When the members of the lesson study group have the expected observation skills then their contributions during the post-lesson discussion will be very useful in achieving the purpose of lesson study. It is not easy to give precise descriptions of the lesson observation skills. However, the following are some of the expected lesson observation skills, in the context of lesson study.

- More focus on learning than teacher.
- Balancing between observing the lesson and recording points observed as the lesson goes on. (The observer should not spend a lot of time writing at the expense of observing the lesson. On the other hand, the observer should not spend time observing the lesson at the expense of writing the observation notes.)
- Capturing only the necessary details in a precise manner.
- Not commenting during observation stage.

- Identifying aspects of the lesson where the teacher needs commendation and where improvement is needed.

3.5 Lesson Observation Guide

A lesson observation guide contains descriptions of observable behaviour or performance in the classroom and is therefore a tool used to assist in making necessary classroom observations. A lesson observation guide is for use during the presentation of a lesson. It specifies expected behaviour a teacher or learner should demonstrate or perform in the classroom in order for the observer to be able to document the lesson implementation. The information obtained is very useful in post-lesson discussion for lesson improvement and general enhancement of observers' pedagogical knowledge and skills.

The purpose of a lesson observation guide is to communicate what is expected. It states the intended behaviour and contains a general area of observation under which are listed the expected behaviours. The expected behaviours can be in form of statements or questions.

A lesson observation guide is derived from what is regarded as effective classroom practices or behaviours by a particular group of people. There is therefore no standard observation guide and a given group of educators can agree on a common guide.



Activity: Watch the video showing a lesson. Use the sample observation guide provided to write your observation notes. (In case there is no video, the facilitator, or a participant, can demonstrate a lesson).

A sample Lesson Observation Guide

Observation date Time Class

Subject; Teacher Observer

Problem (need) to be addressed;

.....

Topic;

Subtopic;

Stage of the lesson	Teacher's actions	Learners' actions
Introduction a. Sharing of objectives with learners b. Review/recap of the previous knowledge c. Linking new concept with previous concept d. Introduction arouse curiosity/interesting/prediction		
Development a. Active participation/response of learners b. Use of teaching & learning resources; appropriateness, relevance, adequacy, innovativeness c. Adequacy of time for activities. d. Did learning occur and when did it occur - Development of scientific skills and knowledge. e. Definition of terms and explanation of concepts f. Level of questioning i.e. taking care of the various cognitive levels (memory, rote learning, g. Confirmation of the prediction		
Conclusion a. Summary of the learning points b. Learners involvement in drawing conclusion c. Application of knowledge being learnt to daily life d. Evaluation of the lesson e. Assignment/homework given for continuity or linking to next lesson		

Summary of the Lesson

i) Strengths in the lesson in addressing the need (problem)

.....
.....

ii) Challenges in the lesson in addressing the need (problem)

.....
.....

iii) Suggestions for improvement to address the need (problem)

.....
.....

Note: Expectations of Observation guide should be reflected in the lesson plan

UNIT FOUR: MANAGEMENT OF LESSON STUDY AT SCHOOL LEVEL

4.0 Introduction

Welcome to Unit Four of this module, which has two sections. Section One consists of the introduction, rationale, and objectives. Section Two starts by giving you an opportunity to reflect on how to manage the lesson study process at school level. The section then presents information on the various aspects that have been considered to be essential for managing the lesson study process at school level. At the end of the Unit, you are given an opportunity to suggest how the management of lesson study that has been discussed can be improved.

4.1 Rationale

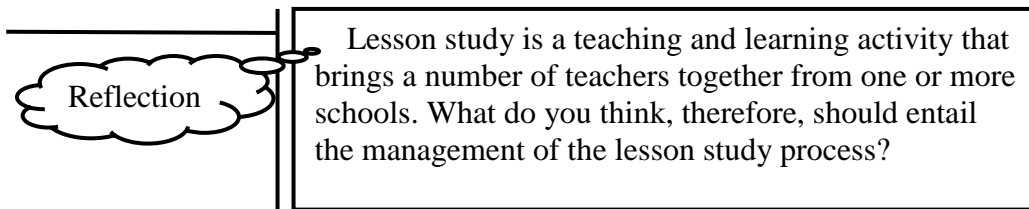
In a school, the headteacher is in charge of the day to day management of a school. The headteacher is assisted in this management task by a team of teachers in the school. The management of lesson study, therefore, is done within this existing establishment at school level. For successful implementation of lesson study (LS) there is need to establish a workable and efficient organizational structure for the management of LS in the school. This means that the headteacher is in charge of the overall management of the school-based lesson study, assisted by

a team of teachers. This unit therefore equips the headteacher and the teachers with information on managing the LS process at school.

4.2 Session Objective

By the end of this unit you should develop the capacity to manage the lesson study process at school level.

4.3 Aspects of Managing Lesson Study at School Level



You may have come up with some of the following responses

- The number of people to participate in the lesson study
- How many times is the lesson study to be done, at what time, and for how long
- Information to be documented
- The resources required
- The roles and responsibilities of the various teachers involved.

These responses constitute what we refer to as the aspects of managing a lesson study. The subsections that follow therefore examine these aspects further.

4.4 Composition of a Lesson Study Group (LSG)

Knowing the number of people to participate in the lesson study is one of the aspects of managing a lesson study process. A group of teachers who have come together to carry out a lesson study is called a lesson study group (LSG). The group is expected to work together through the lesson study process, that is, identifying the learning need to be addressed, preparing a lesson, implementing the lesson (by one of them) and holding a post-lesson discussion. The LSG can be formed by teachers from one school or from a cluster of schools. Resource persons can be invited to participate in the LS process.

Reflection

What is the appropriate number of people for a LSG?



You may have come up with a definite number, and you are right since there is no fixed rule about the number of members of a LSG. However, the number should not be too big or too small for effective discussion. The number should also not be too large to crowd a classroom, since all the LSG members are expected to be in one classroom for the lesson observation. Four to Six (4-6) members have therefore been suggested as appropriate for observation purpose although a LSG could have more members. In some other cases, a teacher may however systematically prepare and ask a colleague (s) to observe followed by a post-lesson discussion.

Reflection

Teachers need support for their professional development.
Suggest persons that can offer professional support in lesson study.



You may have come up with some of the following responses

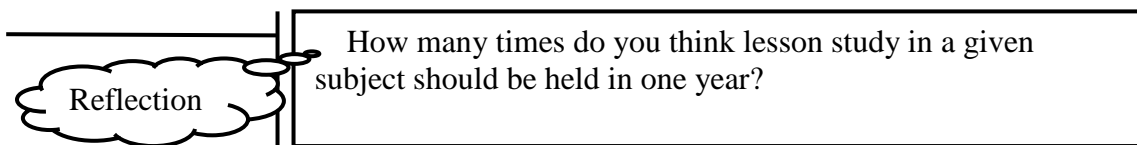
- Colleague teachers
- School administrators (head teacher, deputy, head of department)

There are basically two categories of people who you should consider inviting:

- Officers who are responsible for the management of education in the area, e.g. TAC Tutor, QASO, CEMASTEAs staff, University lecturers etc.
- Those who can give useful advice and guidance for the improvement of teaching and learning, e.g. a member of local community who is knowledgeable in education, lecturers from educational institutions.

It should also be noted that the officers who are responsible for the management of education can attend the LSG without necessarily being invited since participating in the LS is part of their official duty. Some of these officers are directly involved in the management of the school-based teacher development programme including LS.

4.5 Frequency, Time and Duration of Lesson Study



You may have suggested once, twice, three or more times a year.

It is recommended that a lesson study in a school or cluster of schools should be held at least once in a term for each subject, that is, a minimum of three times a year per subject.

The organizers should decide on a suitable time within the term when the lesson study is to be carried out. The duration of the LS process should be at least 4 sessions; a session for preparation meeting (identifying the content to be taught), lesson planning, actual teaching, and post-lesson discussion. Ideally, post-lesson should be done immediately (soon) after actual teaching. The LSG should decide on how to spread the sessions, depending on their circumstances.

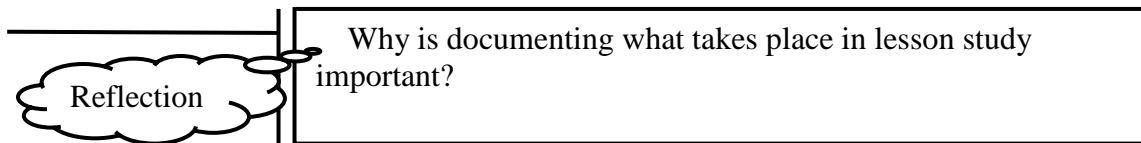
4.6 Resources for Lesson Study

Lesson Study is one of the teaching and learning activities in a school, and should therefore be conducted using the usual resources available in the school. For example;

- Use text books available
- Improvise learning resources from locally available materials
- Schedule the teaching of the lesson within the school time table – e.g. if Math in Standard Four is timetabled from 11.00 to 11.35 am then implement the lesson at that time. Schools with long preparation period could use these or LS sessions could be established monthly on a given day of the month and arrangement made to take care of concerned teachers' classes

Sourcing for the resources for lesson study should be done in the same way it is done for any other learning activity. Lesson study should not be considered an activity that needs special resources other than the ones which are normally used.

4.7 Documentation



You may have come up with some of the following responses

- For future reference
- To use the comments for improving similar and future lessons
- Helps teachers to reflect on their teaching methods
- For sharing good practices

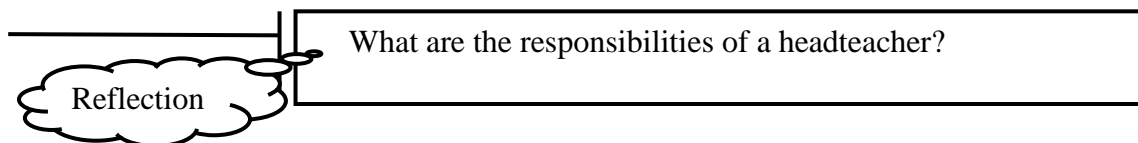
The main purpose of lesson study is to form a basis for improving lessons in order to address an identified teaching/learning need (problem). It is therefore important that the whole process is well documented for benefits and use by the members of the LSG for occasions that may require LS information.

The documentation should include the following

- Minutes of planning meeting
- Learning need to be addressed in the lesson study
- Lesson Plans
- Post-lesson discussion report specifically pointing out ways of improving the lesson and learning in general
- Videos and photos if possible.
- Lesson observation guides used during the LS process
- Summary report (usually in an agreed prescribed format)

4.8 Roles and Responsibilities

If the LSG is to be composed of teachers from one school then the headteacher of the school will be in charge of the overall coordination of the LS process as one of the school programme. If the LS involve a cluster of schools, then the head teachers of the involved schools can jointly organize it.



You may have come up with some of the following responses

- Mobilizing resources for the school
- Custodian of the resources
- Supervision of curriculum implementation
- Maintaining discipline in school

Lesson study is one of the official school activities; hence its management falls within the normal responsibilities of the head teacher. Specifically, the responsibilities of the head teacher include the management of lesson study, but not limited to, the following:

- Coordinate the planning and implementation of the LS
- Provide the required resources
- Support the LS process
- Monitoring and evaluation
- Submitting reports (see format)

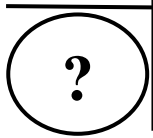
Apart from the headteacher, the teachers who have been trained in LS and/ or head of department are expected to take lead in organizing the LS. For effective organization, a LSG should appoint its Chair and secretary. The responsibilities of Chair of a LSG include:

- Being a link person between LSG and the headteacher
- Acquiring/assembling needed resources
- Convening and chairing LS meetings (including post-lesson discussion)
- Giving guidance on the expectations of a lesson study in the subject or topic

- Coordinates documenting the LS process for the LSG by secretary
- Coordinates writing report for LSG by secretary

The participating teachers (members of the LSG) also have the following responsibilities:

- Identify a suitable time in consultation with the HT
- Prepare the lessons
- Develop teaching and learning resources
- Implement the lessons
- Participate in observation of the lessons and post-lesson discussions
- Improve their lessons based on the post-lesson discussions.
- Develop and maintain relevant documentation of the LS process.
- Keep a personal record of each lesson presented in the LS. The personal reflection record will help the teacher on professional development.



Activity: Suggest how the management of school-based lesson study discussed in this unit can be improved.

4.9 Format of LS Summary report

1. Background Information

- a) Venue
- b) Number of participating teachers.....schools
- c) Class Number of pupils Subject Date
- d) Teaching/Learning need (problem) to be addressed
.....
.....
- e) Topic
- f) Subtopic

2. Summary from post-lesson discussion

- a) Strengths of the lesson in addressing the need
.....
.....
.....

- a) Lesson plan
- b) Signed attendance list
- c) Videos and/or photos (if available) of the LS.

Compiled by Chair of LSG:

Name TSC No.Signature Date

6. Comment(s) by Headteacher

.....

Name TSC No.Signature Date

Official Stamp.

Appendix 1: Lesson Study Assessment Rubric: Beginning Stage

(1) Regular meeting	Grade mark
3: The group meets regularly solely for the purpose of collaborative lesson planning and presenting the lesson to the members. 2: The group meets regularly and they occasionally plan lessons and present them to the members. 1: The group meets regularly but they plan or discuss administrative things. 0: The group meets only occasionally or not at all.	
(2) Planning for understanding	Grade mark
3: When the group plans lessons, they identify the problems of the learners and plan maths/science activities to tackle the problems. 2: When the group plans lessons, they consider the understanding of the learners. 1: When the group plans lessons, they don't consider the problems or understanding of the learners. 0: The group hardly ever plans lessons.	
(3) Observation of lesson	Grade mark
3: When the group members observe the planned lesson, they focus on how much the learners understand, where they have difficulties, and they record their observations. 2: When the group members observe the planned lesson, they record their observations and focus on how the lesson is presented. 1: When the group members observe the planned lesson, they record little of what occurs, and do not have a clear focus. 0: When group members observe the planned lesson, they do not record their observations or focus on important aspects of the lesson.	
(4) How to conduct Post Lesson Conference	Grade mark

<p>3: The group members discuss the appropriateness and effectiveness of instructional materials and/or lesson plan to achieve the lesson objectives and give constructive suggestions.</p> <p>2: The group members give constructive suggestions, but their suggestions centre around instructional skills such as voice level, blackboard writing or use, group work, etc. rather than issues relating to goal achievement.</p> <p>1: The group members appreciate the presentation without any constructive suggestions or the group members point out only challenges without suggestions.</p> <p>0: No post lesson conference is held.</p>	
<p>(5) How to Use of Comments in Post Lesson Conference</p>	<p>Grade mark</p>
<p>3: The comments are recorded and lesson planning and/or lesson presentation are improved by considering the comments made in planning and presentation.</p> <p>2: The comments are recorded and filed, and occasionally used and referred to in planning.</p> <p>1: The comments are recorded and filed. But not used or referred to in later planning.</p> <p>0: The comments are not recorded or used.</p>	

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Appendix 2: Lesson Study Programme



CENTRE FOR MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION IN AFRICA
(CEMASTE A)

SMASE PRIMARY PROGRAMME

NATIONAL WORKSHOP ON LESSON STUDY

Theme: Effective coordination and implementation of lesson study for quality learning in primary schools

Objectives:

1. To share feedback on best classroom practices based on lesson study
2. To model the process of lesson study at school level
3. To enhance lesson observation skills
4. To develop strategies for sustaining lesson study in schools

PROGRAMME

DAY	TIME	SESSION	FACILITATOR
DAY1 15.2.2016	0800 – 0830	Registration	
	0830 – 0900	Leveling Expectations Theme, objectives	
	0900 – 1030	Opening ceremony	
	1030 – 1100	TEA BREAK	
	1100 – 1300	Sharing of experiences on good classroom practices based on feedback on lesson study	
	1300- 1400	LUNCH BREAK	
	1400-1600	Sharing of experiences on classroom practices based on feedback on lesson study	

Day 2 16.2.2016	0800 – 0830	Registration	
	0830-1000	Lesson study process <ul style="list-style-type: none"> • A tool for enhancing school based INSET • Process of lesson study and PDSI cycles • Lesson study for school based INSET 	
	1030-1100	TEA BREAK	
	1100 am- 1300	Lesson study process <ul style="list-style-type: none"> • A tool for enhancing school based INSET • Process of lesson study and PDSI cycles • Lesson study for school based INSET 	
	1300- 1400	LUNCH BREAK	
	1400- 1600	Lesson Observation skills <ul style="list-style-type: none"> • Video/demonstrated lesson • discussion 	
Day 3 17.2.2016	0800 – 0830	Registration	
	0830 – 1030	Lesson Observation skills <ul style="list-style-type: none"> • Video/demonstrated lesson • discussion 	
	1030 – 1100 am	TEA BREAK	
	1100 – 1300	Preparation of the study lesson & Peer teaching & improvement of lessons	
	1300- 1400	LUNCH BREAK	
	1400- 1600	Preparation of the study lesson & Peer teaching & improvement of lessons	
Day 4	0800 – 0830	Registration	
	0830 – 1030	Actualization (Implementation of Study Lesson) in primary schools	
	1030 – 1100	TEA BREAK	

18.2.2016	1100 – 1130	tualization (Implementation of Study Lesson) in primary schools	
	1300- 1400	L U N C H B R E A K	
	1400-1600	Post-lesson discussion	
Day 5 19.2.2016	0800 – 0830	Registration	
	0830 – 1030	Strategies for Sustaining Lesson Study in schools	
	1030 – 1100	T E A B R E A K	
	1100 – 1200	Action plan	
	1200- 1300	Way forward Closing ceremony	
	1300- 1400	L U N C H B R E A K	
	1400- 1600	Departure	