

3. Lesson Skills

LESSON SKILLS

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It is not easy to pin-point a particular skill in the classroom displayed by a teacher as constituting a lesson skill. The way and manner a teacher uses the chalkboard, asks questions, controls the class, presents lessons as well as combines more than one grade (classes) to teach, all require special knowledge and abilities. From the above, it is obvious that lesson skills cover almost all classroom practices that are done in such a way as to stimulate, promote, and sustain learners' interest in the teaching and learning process. This manual however, will consider three areas, these are; the effective use of the chalkboard; questioning skills; and teaching a multi-grade class.

Effective Use of Chalkboard

The first ready-made aid of the classroom teacher is the chalkboard. Due to its central position as an ever present resource, the way and manner a teacher uses this resource may affect his/her lesson positively or otherwise. To achieve effective teaching and learning, the classroom environment as well as the correct use of the chalkboard should be consciously planned and executed. When using the chalkboard teachers should always ensure that:

1. The chalkboard is divided into convenient columns
2. The date is written fully at the right-top corner of the board
3. The title of the subject/topic/sub-topic is written at the top of the central column
4. Worked examples are put above exercises given to pupils on chalk board.
5. They do not talk when writing on the chalk board.
6. They face the class when talking
7. They position themselves so as not obstruct pupils from seeing the board.
8. They summarise the main points of the lesson on the board
9. They always seek learner's opinion before cleaning the board.
10. They do not clean the board with the bare hands.
11. They clean the board after each lesson.



Questioning Skills

Questions constitute a large proportion of a teacher's trade in stock. The success of most teaching depends on how skilful teachers direct their questions. The value of questioning is that it gets students/pupils thinking out direct outcome of learning. Thinking is a way of learning therefore the kinds of questions teachers ask influence the level of thinking operations students engage in.

This manual provides some methods which can be used by teachers to analyze their questioning strategies and to suggest some techniques for developing variety in the kinds of questions they ask. Teachers are supposed to be competent in the techniques of questioning. This is because it is the single tool, which can be used to bring up learners who can think critically to solve problems.

A 'question' could be any written or oral statement, and, or, gestures, which demands an answer or a response. In teaching/learning situations, questioning is a very important skill and one, which poses many problems especially for new and inexperienced teachers.

Importance of Classroom Questions: What part does questioning play in the classroom?

Teachers ask a variety of questions during their interactions with students in the classroom. They find questioning a very useful and effective tool which they employ for a variety of reasons. Questions may be used to:

1. Help teachers to review or to find out what students know about a subject or topic. Questions can be used to review the previous knowledge of pupils/students. Most of the time teachers introduce their lessons by reviewing pupils/students' previous knowledge to find out what learners already know about what is to be taught. This technique builds up confidence in learners and assures them of the relevancy of the topic in their lives. Such questions should be simple and stimulating.
2. Stimulate critical thinking.
3. Emphasise a point.
4. Control classroom activities and cut down on disruptive behaviour.
5. Motivate students. Challenging questions could be used to direct, control and sustain the interest of students.
6. Assess students' understanding to find out if pupils/students understand what is being taught them. Instead of asking "Is that clear?" or "Do you understand?" or "Do you have any questions?", questions could be used to assess the understanding of the pupils/students before the lesson progresses at any stage.
7. Help pupils/students to make their own observations and draw conclusions.
8. Find out if pupils/students can apply the knowledge they have acquired in life.
9. Provide pupils/students with the opportunity to verbalize what they have learnt.
10. Encourage independent thinking.
11. Encourage and ensure participation by pupils/students
12. Encourage interaction, and establish cordial relationship.
13. Find out pupils/students difficulties and problems.
14. Find out how the lesson is progressing and to what extent

How to ask questions successfully

1. Check the wording of your questions to make sure it is up to the vocabulary level of your students. New vocabulary should be used with care and only after it has been seen that the words can be well understood.

2. Avoid repeating pupils/students responses. If you fall into this common habit, not only are you taking up class time that could be spent in other discussions, you are also encouraging bad listening habits on the part of pupils/students. It encourages your pupils/students to listen to you rather than to each other. If you repeat pupils'/students' answers because some do not speak out aloud, develop some non-threatening techniques to encourage these pupils/students to speak louder. Try something like, "That is an interesting idea. I don't think everybody in the class heard it. Would you say it again so everybody can hear?" If repetition is done for reinforcement, then use non-verbal behaviours to show pupils/students that their responses have been heard and accepted.
3. Get students to interact with each other. Try to change the pattern where much of questioning behaviour consists of teacher and single pupils/student dialogues. Use such remarks like, "What do you think about ...?" addressed either to the whole class or to a specific pupil/student, or "what can you add to that?" or what might be a different interpretation for that?"
4. Encourage students to ask questions. If pupils/students are to become problem solvers and critical thinkers we should encourage them to ask questions.
5. Do not expect answers too soon; give students sometime to digest the question first.
6. Ask questions before mentioning the name of a pupil/student to respond. Instead of referring to pupils/students as, the one in the corner wearing the red dress, or the one in glasses, call pupils/students by their names.
7. Select pupils/students at random to answer questions instead of following patterns otherwise some pupils/students will not be listening until it is their turn.
8. Express yourself confidently and clearly. This is achieved through good pronunciation and a well-projected voice, which can be heard by all in the class. Questions should be clear, and straightforward.

When to ask questions

We usually ask questions prior to instruction, during instruction and after instruction.

Questions can also be classified as open or close. Closed questions are those for which there are a limited number of acceptable responses or right answers: For example:

1. What is the chemical formula for common salt?
2. What are enzymes made of?
3. If $a + 4 = 6$, find the value of 'a'?

These are questions that anticipate certain answers. It is expected that students are already exposed to the information required by closed questions from classroom interactions with teachers.

Open questions anticipate a wide range of acceptable answers rather than one or two 'right answers'. Such questions tend to draw on pupils/students past experience but they also cause pupils/students to give and justify their opinions/thinking, to identify implications and to make judgements based on their own values and standards. For example:

1. What should we do to keep food from going bad?
2. If $a + b = 6$, find the values of a and b .

Closed questions need to always be of the factual recall type in which pupils/students are expected to orally fill in the blanks or respond with one-or two-word answers. Therefore it is important to include questions that are designed to cause pupils/students to classify or pick out similarities and differences or to apply previously learned information to a new problem. Both levels of thinking are necessary for pupils/students but it is important that our questioning activities do not stay entirely within the closed question areas.

Testing

Testing is an important tool used by the teacher to assess the performance of pupils/students in the classroom teaching and learning situation. Any process which samples a person's behavior and can give some value or comparison can be called a test. They include the following: diagnostic, aptitude, intelligence, norm-referenced and criterion-referenced tests.

Why testing?

1. Test is used as feed back to both teachers and pupils/students. For example, the teacher could determine how well the pupils have mastered the objectives he has set to teach them.
2. Test is used to assess the effectiveness and appropriateness of teaching approaches and the use of teaching/learning materials.
3. Test is used to find out how the individual pupil/student is progressing.
4. Test is used to inform parents of the progress of their wards.
5. Test serves as a kind of motivation. Pupils/students tend to learn more seriously if they know they are going to be tested.
6. Test is used to predict future educational achievement and provide a means of selecting candidates for certain courses or occupation.
7. Test helps the teacher to compare the performance of one individual child to another member of the class.

Types of Test items

There are various types of classroom tests, which can be designed by the teacher. This teacher made tests fall into two broad categories.

1. Objective type test
2. Essay type tests

What make a test objective?

It is the method of scoring which makes a test objective. The objective test uses questions that demand answers that are either wrong or right. For each question there is

only one possible correct answer. Therefore the marks obtained do not depend on who is marking the test. All possibility of human error or prejudice by the marker/scorer is removed.

Advantages of objective tests

1. Sampling is usually very good. The test is constructed to cover a wide area of the syllabus and is able to test a much wider range of student's knowledge than would be the case in essays.
2. Marking is very objective. It is not influenced by such factors as the mood of the examiner, candidates' handwriting, use of language, style of writing etc.
3. Marking is faster and easier and can be done by anyone using the scoring key.
4. A student who is weak in a language is not at a disadvantage, since he is not required to write much.
5. It encourages students to pay much attention to what they are studying.

Disadvantages of objective test

1. A good objective test which is valid and reliable, takes a long time to prepare
2. It encourages guessing among pupils/students
3. It tends to test recognition and recall of factual information rather than creativity.
4. It encourages cheating and other examination malpractices to take place.
5. Pupils may become too familiar with the techniques involved in answering the objective questions. This may influence the way in which they learn; learning only facts and not developing deeper understanding.

Types of objective test

1. True /false.
2. Completion/ Supply/ Short answer type/ Fill in the blanks.
3. Matching test.
4. Multiple-choice test.

True /False objective test

A number of statements, some true and some false are presented to the student. A student is only required to judge whether a statement is true or false. For example:
Man is a mammal, true or false?

Scoring can be very objective. True or false items are used in measuring the ability of the student to identify the truth or falsity of statements of facts, definitions, terms, statement of principles etc. It can also be used to test more complex mental processes if used more carefully. Yes/No, Right/Wrong are other examples of this type of test. It has a very great inherent guessing element and the answers may be easily identifiable. There is also a 50/50 chance of students scoring.

To minimize the high probability for pupils/students identifying the correct answers easily, a third element is added to lower the guessing element. No pattern should be

developed in the answers. In writing true/false items, as much as possible, statements used should be positive.

Advantages of True/False objective test

1. Marking is very objective.
2. The test is easy and quick to mark.
3. It enables the teacher to have a scan of pupils' knowledge.
4. Construction is relatively easy compared with multiple-choice test.
5. It is usually short.
6. There can be extensive sampling to cover a greater part of the syllabus.

Disadvantages of True/False objective test

1. It is susceptible to guessing as there are only two options to choose from. Guessing element is very high.
2. It encourages students to memorize facts without understanding
3. Test cannot be very valid.

Guidelines for preparing true/false test

1. Statements used must be definitely right or wrong. It should not be 80% right and 20% wrong or vice versa.
2. If a test is false that statement must be false by itself not because of certain minor phrases, which make it wrong. Items of controversy should be avoided. Each statement should be absolutely true or false.
3. Sentences used should be simple and grammatically correct.
4. Avoid lifting statements from textbooks.
5. Do not use terms that will provide clues about the right answers. e.g. Usually, never, generally, may etc.
6. Do not follow a fixed pattern in the sequence of true/false items.
7. Have approximately equal numbers of true/false items. This calls for a conscious effort to write balanced items.

Completion type/Supplying type/Short answer type/Fill in the blanks objective test

This is the type of test, which requires the student to complete a statement by supplying missing words or phrases, numbers or symbols. No possible answers are listed as part of the item. Also a diagram or map or an illustration is presented and the candidate is required to label the parts indicated. This test is used to measure knowledge of factual information. In writing a completion test item, it is best to use one blank space per item. Many blank spaces in a single item easily lead to confusion and guessing. The blank space should as much as possible be put at the end or near the end of the items. Items should be worded such that only one answer would be correct. Words, which serve as clues to the answers, should be avoided e.g. "a", "an", "the". The blanks for answers must be equal in length. Instructions must be clear, stating how the student should respond to the item and how to record the answer. For example:

1. An example of an insect which undergoes complete metamorphosis is
2. An example of a vegetable is
3. $2 + 4 = \square$
4. $3 + 4 \dots 7$ (Use "<", ">", or "=" to make the statement true)

Advantages of completion type objective test

1. It is a reliable method of testing and covers a greater part of the syllabus.
2. It is relatively easy to construct.
3. There is limited guessing element.
4. It can be used for a comprehensive assessment.
5. It has a valuable application in test situations presented in the form of maps, charts and diagrams in which the student is required to supply in spaces provided the names of parts keyed by numbers or letters.

Disadvantages of completion type objective test

1. The items often measure only factual knowledge of the student.
2. It is sometimes difficult to weigh the answers to eliminate only one correct answer.
3. It is less objective because it is sometimes difficult to depend on only one answer. The teacher has to decide whether an answer is close enough or "means the same"
4. Teacher often uses too many blanks resulting in a vague and ambiguous puzzle to be solved by the pupils.

Matching type objective test

A matching type of objective test consists of a stem and a list of responses to match the stem. The stem and the responses can be in two columns (A and B or 1 and 2). Each column contains a word, number, symbol, sentence or phrase. The student is asked to match or associate an item, word etc. in one column with a choice in the other.

Matching test is not well adapted to measure of understanding. It is however, useful in checking precise information based on simple associations. It emphasises the ability to identify the relationship between two things such as events and dates, countries and their capital towns and their definitions, rules, tools, equipment facilities and their use, explanation of terms etc.

Match the words in column A with the statements in column B to make the sentences complete.

Example 1

Column A	Column B
1. Glycogen	- A compound made of carbon, hydrogen and oxygen
2. Carbohydrate	- A process whereby metabolic wastes are removed from the body.
3. Skin	- An example of an excretory organ.
4. Protein	- Glucose is stored in the liver as

- 5. Excretion - An example of an excretory organ.
- 6. Amino acids.

Example 2

Column A

a. 3 + 4...7

b. 6 + 5...10

Column B

- >

- =

Advantages of matching type objective test

1. Scoring is objective and easy.
2. Guessing is very much reduced.

Disadvantages of matching type objective test

1. Its use is limited to tests for relationships or associations.
2. Its construction is not all that easy. It requires some degree of skills to construct useful stems.
3. It is sometimes difficult to obtain homogeneity.
4. It turns to ask for trivial information.
5. When the test is almost completed, the pupils/students can complete the final link by a process of elimination.

Guidelines for constructing matching tests

1. Use homogeneous options and items i.e. statements and "answer" must be dealing with the same thing.
2. The number of options must be greater than the test items (statements). This decreases the chance of pupils to guessing correctly.
3. The arrangement should be such that the short items should be the responses while the longer words or sentences should be the stem.
4. The items in each set should be limited to about 5 or 6 and the responses should not be more than 10.
5. Both the stem or premises and the responses should be on the same page.
6. Instructions to students should be clear and definite and should specify the basis for matching.
7. What each column represents should be stated clearly.

Multiple choice test

This is the commonest type of objective test. In this test, a question is given with three or more responses and a student is required to select an answer from the given list of alternative answers. It is also possible to have several correct options and only one incorrect option, which is to be chosen from the list of alternatives. The first part, which poses the question, is referred to as the stem and the list of alternative answers is referred to as the options.

Example 1: (Multiple choice test)

The end product of protein digestion is?

- A. Glycogen
- B. Amino acids
- C. Glucose
- D. Fatty acids and glycerol

Example 2: (Multiple choice test)

$2x + 4 = 12$, what is x ?

- A. 4
- B. 5
- C. 6
- D. 8

In the options we have the true answer and the incorrect ones called distractions. The distractions should be plausible (seeming to be true or reasonable) as the true answer but they should not be true.

This type of objective test is the most difficult to design, it involves making three things.

1. A good question
2. A good correct answer
3. And three or four plausible but incorrect answer.

Advantages of multiple choice test

1. It can be used to test a wider area of knowledge and also to test different types of complex skills than true/false, supply or matching test types.
2. Marking is very objective.
3. The test is easy and quick to mark.
4. It is easy to score by anyone using the scoring key.

Disadvantages of multiple choice test

1. It is very difficult to construct, for instance, finding alternative plausible responses.
2. It takes a longer time to construct the test items.
3. Test occupies much space.
4. Answers are open to a degree of guessing.
5. It cannot be used to measure certain problem-solving skills.

Guidelines for constructing multiple choice test items

1. The statement of the item must be carefully worded in order to avoid vagueness and different interpretations.

2. Design distractions that are plausible but not obvious
3. Problems should be expressed clearly and accurately so that pupils know what to do.
4. A fixed pattern in the positioning or placement of the correct option should not be used.
5. There should be no clue for the correct option e.g. the use 'a', "an", "the" etc.
6. Options should be vertically arranged instead of horizontal (A, B, C), since it facilitates easy reading and clarity of words. For example:
A
B
C
7. As much as possible items should be stated in positive terms rather than in negative terms. Negative terms such as "no" "not" etc. are usually overlooked by students. However, if statements with negative words are used, those words should be marked boldly, capitalized or underlined to make them conspicuous.
8. The stem should be written at the appropriate language level for the pupils answering the items.

Guidelines for constructing stems for objective tests

1. Decide on the proper type of test for the purpose to be served. If the purpose is to measure ability to recall facts rather than just to recognize them, then completion items rather than true/false or multiple choices should be used.
2. A small portion of the items should be very easy and few very difficult but most items should be around 50% difficult level.
3. Stems should be clear and unambiguous (not to be understood in more than one way or of unclear meaning)
4. Stems should be as brief as possible but most of the material should be contained in the stem, usually the stem should be longer than the response.
5. Generally, it is better to have positive stem and not negative ones. Negative stems can lead to misinterpretation unless carefully constructed.

Essay type test

An essay type test is the one, which requires the student to compose in one or more sentences the answer to a question. It is one of the major tools for measuring students in our schools. It gives the student the chance to measure his thoughts. The test is generally used to test learning outcomes such as the ability to recall, organize and integrate ideas into a logical and meaningful manner, and also the ability to express oneself in writing. It is also used to measure complex learning outcomes, which cannot be satisfactorily measured by objective tests. It allows for maximum of response and encourages self-expression. It develops a variety of skills by calling upon students to use these skills. Skills like selection and use of relevant materials and organizing, materials into coherent discussions and arriving at a conclusion.

Advantages of essay type test

1. It is relatively easy to construct.
2. It allows free expression and practice in organizing and arranging facts and arguments in an effective manner.
3. The ability of the candidate to express him/her self in good language can be tested through the essay.
4. It is more effective in testing achievements in certain types of skills e.g. the ability to organize and relate information and the ability to select information that is related to particular information. (This merit does not apply automatically to all essay items)
5. Guessing is reduced if not completely eliminated.
6. It motivates students to learn.

Disadvantages of essay type test

1. Unless the marking of the test has been standardized it turns to be unreliable and hollow effects set in.
2. It suffers from limited sampling. Sampling covers a limited area of the syllabus. One such research evidence shows that the essay called for less than half the knowledge the average student actually possessed on the subject.
3. Students who have nothing to say can rely on the power of vocabulary to attempt to outwit the scorer.
4. The mood of the examiner at the time of marking may affect the student's grades. Factors like physical and mental condition of the examiner may tend to influence the marks awarded to the candidate.
5. A student who has vocabulary handicap might be penalized.
6. It gives students the chance to bluff or show off, writing irrelevant material to show that they know.
7. It is time consuming both for the teacher and the student. For the teacher, the reading, marking and grading require a lot of time if it is to be done well.
8. There is variation in the difficulty level of questions answered by different students so that the marks have no one basis for comparison.

Guidelines for improving on the construction of essay type test

1. The sampling of materials taught should be as wide as possible. This can be done by increasing the number of questions asked and reducing the amount of discussion required on each. The type of response required must always be clearly indicated.
2. Do not ask a question such as 'Describe the Digestive system'. The specific aspects of the digestive system to be described should be stated. For example: Describe what happens to a piece of meat eaten until it becomes part of the body.
3. Each item should contain only one question. If there is more than one question in an item, they should be clearly indicated. So instead of 'What contributions do heredity and environment make to the child's growth and his performance in the classroom?' This could be better framed as 'What contribution do heredity and environment make on the following:
 - a. A child's growth and development.

- b. A child's performance in the classroom.
4. Indicate the time limit for taking the test.

Guidelines for constructing essay tests

1. Prepare in advance a marking scheme. This is a list of answers, which are considered adequate for the objectives of the test.
2. Assign a specific value to each essential part of the answer.
3. Mark one question through all the papers before going to another question. This makes the scores attend to only one set of criteria at a time in marking the script.
4. Avoid generalizing performance on one question to another, predicting the student's performance on a subsequent question or item from performance on an item marked earlier.
5. Conceal the student's identity before marking to avoid a possible "halo" effect.

Multigrade Teaching

Multigrade teaching technique poses a challenge to many teachers in the classrooms and therefore they require some skills to effectively handle it. 'Multi' means 'many' while the word 'grade' means level or positions of ability or rank. Multigrade teaching therefore is teaching many grades (classes) in one classroom. Pupils in a multigrade class are at different levels of ability. A multigrade classroom by design contains pupils who are in two or even three different grades. Due to lack of teachers and classroom accommodation in many of our schools, some classes are combined and handled by one teacher. Each class is a grade e.g. primary 2 is primary grade 2. Thus if grades 2&3 are combined we call that a multigrade class. By the fact that they are two different grades indicates that they are unequal. Hence the learning situation demands a variation in content, methodology and materials to meet the needs of each grade.

Strategies for teaching the multigrade class

1. Classroom activities should be modified according to learners' needs.
2. Vary daily learning experiences according to ability /achievement levels. e.g. provide many exercises for the lower grade and fewer but challenging exercises for the upper grade.
3. Merging Content. Picking on common topics for lessons. Breaking topics into subtasks or by differentiating instruction so that lower grades do more work on the earlier task while the higher grade work up to end sub-task.
4. Instructional materials should vary according to the ability of pupils.
5. Materials, models, devices should meet the needs and interest of the pupils.
6. Small Group Instruction: Grouping is inevitable in multigrade classes. There is the need to do grade level grouping and sub-grouping within a grade level. This enables the teacher to pay closer attention to individual grades/learners, thus reducing the chances of serious learning problems.
7. Evaluation should be made appropriate to the course or grades concerned.

Combining classes for multigrade teaching

Considering the inherent challenges posed by multigrade teaching due to the different ability levels, it is important to combine classes whose levels are not wide apart but rather close grades. As much as possible combining grade one (class one) with another class (commonly class 2) must be avoided. The following combinations may be considered.

- 1) Classes 2 & 3
- 2) Classes 3 & 4
- 3) Classes 4 & 5

Some challenges of multigrade teaching

1. There is the tendency of higher-grade pupils dominating the lessons.
2. Demands on teachers to provide effective supervision of the activities of different grades and different sub-groups within grades.
3. Constant rearrangement of the classroom to suit specific activities.
4. Class control may be very difficult.
5. Lesson planning for the different grades is difficult, so teachers are tempted to use lesson plans designed for a particular grade to teach a multigrade class.
6. Keeping records on the performances of pupils of the different grades

4. Lesson Presentation

LESSON PRESENTATION

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Lesson introduction

A lesson introduction serves to arrest the attention of the pupils/students at the beginning of the lesson. The introduction should be brief, attractive as well as arousing to sustain the interest of the pupils/students. The content of the introduction must be relevant to the subject matter of the lesson. Also the pupils'/students' RPK must be tested at the introduction part of the lesson. The following broad ideas might be used as introduction to lessons.

1. Ask questions about previous lessons that are related to the present one. A few examples of such questions must be included in the lesson plan.
2. Discuss a familiar situation about the lesson with the pupils.
3. Display an interesting learning aid related to the lesson and discuss with the pupils.

Lesson development

The development of the lesson is written under teacher/learner activities in steps in the lesson plan, the number of which depends on the nature of the topic. The subject matter will have to be presented in an orderly and logical sequence in the form of activities. The activities can be in the form of verbal interactions e.g. discussions, asking and answering of questions, or performance of physical activities like demonstrations, experiments, constructions etc.

It is important to start with what is known to the pupils before the new information is introduced to them. The teacher must present the information from a simple level and move on gradually to the more difficult.

In each step the teacher must be clear about what he or she intends to do and what the pupils must do. At no point should the pupils be wasting time in a lesson, not knowing what to do next.

The activities must be planned taking into consideration the objectives of the lesson.

Also activities can be organised in groups, in pairs or as a whole class.

Some examples of teacher activities are: discussing, explaining, demonstrating, providing the necessary materials, and giving instructions and asking questions.

Some examples of pupils activities are: listening, answering questions, discussing, experimenting, looking for information from diagrams or maps, drawing, modeling and answering written or oral questions.

During the lesson, the teacher should prepare some kind of activity so that the pupils can apply their new knowledge or the skills that they have learned during the lesson. The emphasis here is on 'learning by doing'.

Examples of written activities:

1. Teacher guides pupils on how to fold a filter paper.
2. Teacher guides pupils to fold a rectangular paper along the diagonal to form two separate triangles.

Conclusion/Closure of lesson

The conclusion is the rounding off of the lesson satisfactorily; the way to conclude a lesson will depend on the nature of the lesson. A conclusion may involve:

1. Going over the main points of the lesson through oral or written questions;
2. Correcting some common mistakes made by the pupils while working
3. Emphasizing again the main message of the lesson, e.g. that of a new concept

Collecting books and tidying up at the end of the lesson are obvious duties and are not to be regarded as activities to round off the lesson, especially, in practical lessons.

Application

In application, students/pupils must be made to see the relevance of science and mathematics in their everyday lives. This is when the knowledge gained by the pupils/students in the lesson can be put into use or applied in everyday life.

For example after a lesson on purification of water, pupils/students should be able to apply the knowledge acquired to either filter/boil or add alum, etc. to water which is not pure before using it. The appropriate unit of measure to use when measuring distances. Science and mathematics must be viewed as fields that are open to them as careers, and also as means to understand the world around them.

5. Lesson Notes Preparation

LESSON NOTES PREPARATION

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The secret of all good teaching is proper planning. If you want your teaching to be effective, then you have to think carefully during the planning stage. You can make your thoughts useful if you translate them into notes. A well planned lesson helps the teacher with confidence. Before you can prepare your lesson notes you will need some basic materials. They are the main reference books (the syllabus, teacher's handbooks, pupil text books or any other source of reference or books or materials). The syllabus contains the list of the topics to be studied and the level to which a teacher must teach each topic.

The lesson plan approved for use by basic school teachers in Ghana and Kenya has the following components:

Subject: The particular subject for which the lesson is about.e.g Mathematics, Science, etc.

Week ending: This is the last day of the working week for which the lesson plan meant. The working week usually starts on Monday and ends Friday.

Day/Date/ Duration: These refer to the particular day and date of the week for which for which a particular lesson is meant. E.g. Thursday, 5th May, 2003. The duration is the specification of the length of time allocated to the lesson. e.g 30mins or 60mins.

Topic/sub-Topic: The topic is usually taken from the syllabus and sub topic from the scheme work. The topic is the small area of learning or subject matter which is to be covered in a particular lesson within a particular lesson within a particular time/ period. But sometimes when the topic is too broad, it can be subdivided into subtopics. For example:

Science

Topic: Water

Sub-topic: Sources of water

Mathematics

Topic:

Sub-Topic: Addition of fractions with different denominations.

Reference Books: These are the list of books, textbooks, or any other source of information that could be referred to for information that may be required for the lesson to be taught. Where information is obtained from the pupils' books and teacher's guide, the pages must be indicated. E.g. Pupil's Mathematics Text book4, Page 12.

Relevant previous Knowledge (RPK) this is the knowledge, skills, or ideas which the pupils already know and which relate to the new topic that is to be learnt. This knowledge is very helpful to the teacher to make him construct his teaching and it can also be used as a starting

point or foundation, upon which the new lesson could be built. If there is no interaction between the RPK and the new text, understanding of the new text becomes more difficult. It must be noted that RPK does not necessarily come from a previous lesson. There must be an obvious link between the RPK and the new text. The RPK could be the general knowledge acquired experience or real life.

Objective(s): The objective states the value of the lesson to the learner; it is a statement indicating why the teaching is being done and describes the target set for attainment or achievement at the end of the lesson.

- The objective should be stated in behavioural terms to describe observable behaviour.
- The objective tells what changes we intend to bring about in student/pupils. It spells out the knowledge, abilities, and attitudes that we expect our pupils to gain as a result of our teaching.
- The objectives specify what the pupils should be able to do at the end of the lesson, including, mental, affective and psychomotor skills.
- The objective in the lesson plan should not be confused with the more general and broad objectives of a particular subject. The objective must be stated using performance/ active verbs based on at least two of the profile dimensions stated in the syllabus. I.e. Knowledge and process skills and attitude (science).

In stating lesson objectives (instructional objectives) the following points must be remembered.

1. A lesson can have more than one objective. Do not however aim at too many. The objective(s) must be stated in a way that shows what the desired change in the Pupil's behaviour will be.
2. The objective(s) must be achievable within one lesson, unless specified for a double lesson.
3. The objective(s) must relate to what the pupils will learn rather than what the Teacher will teach. This means objectives should be child centred.
4. The change in the children's behaviour should be observable and measurable.

A few of good instructional objectives are as follows:

By the end of the 30- minute lesson, pupils will be able to:

1. Measure the size of the leaf using squares.
2. Calculate the density of a regular object.
3. Interpret a graph showing annual rainfall.
4. Mention at least three differences between a plant cell and an animal cell.
5. Draw a complete flower and label it correctly.
6. List at least five sources of water.

Examples of objectives for the various profile dimensions are as follows:

1. Knowledge and understanding: - List five sources of water.
2. Application of Knowledge:-Interpret a graph showing annual rainfall.

3. Process skills and attitude: - Draw a complete flower and label it correctly.

The objective(s) stated for each lesson should be specific, measurable, Achievable, Realistic and Time bound. (SMART)

Teaching/Learning Materials: Any materials that are used to make learning more effective should be listed here. The materials listed here must be relevant and very suitable for lesson. Learning aids can be real objects, models, charts, pictures, etc. It is very important to remember the following points when using learning aids.

1. They must be adequate for the number of pupils in the class.
2. Real objects are the best learning materials unless otherwise.
3. Models, pictures, photographs and charts are used when real objects cannot be obtained. These must be simple, clear, and brief.

Teacher/Learner activities: These activities indicate how the teaching must be done, according to the stated objectives. Teacher writes down step by step the way the Learning situation will be explored. The steps must indicate:

1. Teacher Activities: Strategies the teacher will use to promote and facilitate pupil's Learning.
2. Pupil's activities: What the pupils should perform or go through in order to learn.

The activities must be pupil- centered instead of teacher centered. This implies that the teacher should have the pupils/students as focus for the lesson. The method of organizing work which include discovery, remedial work, and the use of text books, work cards, etc. Are to be clearly shown. For example:

1. Pupils use match boxes, draw or color squares to represent the various number of Pupils born on each day of the week.
2. Pupils draw bar graph/ block graph to represent numbers of objects and pupils.

The lesson must begin with an introduction, which must be designed to:

1. Connect the new topic with the previous knowledge or experience of pupils.
2. Motivate and capture pupil's interest from the beginning through to the end of the lesson.
3. Bring pupils to a workable condition in the classroom.

Core points: These are the main ideas and concepts, skills, that the lesson is aimed to achieve. In developing the lesson, the teacher skillfully collects these facts, ideas, values, and concepts from the pupils through questioning and listing them systematically on the chalkboard summarized. For example:

Science

Types of soil: Sandy, Clayey, and Loamy soils are some of the type of soil.

Mathematics

Block graphs: Block graph involve the pilling of objects on each other.

Evaluation/Exercise: This suggests exercise to be carried out by pupils after going through the teaching/learning process. They are the processes for measuring the effectiveness of the teaching/ learning activities and the purpose of evaluation exercise is to find out if the objective set for the lesson have been achieved or not. Evaluation exercise may include home work, class work, quizzes,(oral and written and assignments etc. Pupils could do the evaluation exercise individually, in pairs or in groups. These can form the basis for the teacher's continuous assessment marks which in turn provide the basis for the teachers' remarks. The evaluation exercises are not meant for pupils only; they can be used to access the performance of pupils as well as the teaching /learning process (methodology) also the effective use of the teaching / learning materials. The performance of the pupils in the evaluation exercises may be used to review the methodology and the teaching/learning materials in assisting pupils individually to improve upon their performance.

Remarks: This is the statement made at the end of the lesson to indicate if the lesson was successful or not and why. The remarks should also state the specific strengths, problems, or weaknesses observed during the lesson in the performance of both of the teacher and the pupil for further action. For example, after the lesson on the topic.

Symbols of Elements: Students were confused about the symbols of those elements which do not have English names, such as Potassium-K, and Sodium-Na. The lesson was therefore not successful and should be taught again using different approach.