

Methods of Teaching SCIENCE, BASIC TECHNOLOGY AND COMPUTER STUDIES

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CHAPTER 2

LESSON PLAN PREPARATION

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Objectives

At the end of this chapter, you should be able to:

- enumerate the basic components of a lesson plan
- explain how instructional objectives should be stated
- state the relationship between entry behaviour and previous knowledge
- explain when evaluation should be done in teaching
- prepare a lesson plan in teaching a topic in chemistry

Introduction

A lesson plan is the teacher's guide for teaching a particular lesson, and it includes the goal (what the students are supposed to learn), how the goal will be reached (the instructional method, procedure) and a way of measuring how well the goal has been reached (O'Bannon, 2008). Effective lesson plans communicate while ineffective ones do not. Teachers create lesson plans to communicate their instructional activities regarding specific subject matter (Kizlik, 2016). A lesson plan is structured such that it contains student learning objectives, the instructional materials, instructional procedures, and a description of how the students will be evaluated as well as the summary and the references. For an effective instruction, it is the responsibility of the teacher to appropriately plan ahead. Hence, the preparation of a good lesson plan is a task that requires a serious attention of the teacher. This is because a well organized lesson plan will most likely project a good delivery of instruction.

Teachers play a major role in planning for instruction. This planning is a stage in which learning experiences are selected and organized for the purpose of instruction. Instructional planning can be divided into two stages: the unit plan and, the lesson plan (Abimbola, 2007). The unit plan is a long range instructional planning. The lesson plan is prepared over a short range usually per topic. A lesson plan is regarded as the instructors' road map of the students need. It is the teachers' blueprint of what he tends to achieve and the means by which he will attain such instructional objectives. It is basically prepared by the teacher to guide the lesson delivery. The contents of a lesson plan may vary depending on the subject being covered, the needs of the learner and the preference of the instructor (teacher). Considering practically related topics like detection of ions in chemistry, a lesson plan for such topics will require more time for students' activities during such lesson. This is contrary to a non practically oriented topic such as; concepts of atoms, molecules and ions, where the time allocation is proportional for teacher and students activities.

Lesson plans could be in three forms; the short, intermediate and long forms (Abimbola, 2007). The short form of lesson plan is not to be encouraged for the

beginning teachers. This is because it contains less details of what the teacher is going to do in the classroom. It can be used by very experienced teachers who are conversant with the use of intermediate and long lesson plans.

The intermediate form of lesson plan can be used among the moderately experienced teachers. This contains more information than the short form. This form of lesson plan should therefore not be used by beginning teachers because it is not detailed enough.

The long form of lesson plan gives a clear description and detailed information of what the teacher intends to do during instruction. This form of lesson plan can be adopted by beginning teachers as it vividly describes what they are supposed to do during instruction and provides them with adequate information on what challenges they may face and proffer solutions ahead of instruction.

Lesson plans can usually be presented in two formats, namely: the prose format and the tabular format. Both formats of lesson plans should each contain information about the teacher and the learner. Also, it should indicate what will be done during the period of instruction and the time distribution should be indicated. Beginning teachers should be familiar with these two formats. According to Abimbola (2007) the prose format is probably British in origin while the tabular format is American. He noted that it is these probable origins that account for why educators refer to one as a note and the other as a plan. It is in the writers' opinion that the beginning teachers should be more familiar with the presentation of lesson plans in tabular format as it will help them to indicate the activities of the learners at every stage of instruction so that instruction will not be teacher centered but rather a teacher and learner centered instruction.

COMPONENTS OF A TYPICAL LESSON PLAN

A good lesson plan should contain the following: the preliminary/clerical section, the instructional materials, the behavioural objectives, the entry behaviour/previous knowledge, introduction, presentation of the lesson, recapitulation, evaluation, assignment, summary, conclusion and references.

The Preliminary/ Clerical section: This section contains information about the teacher and the learner. For student teachers, it contains information such as; name, matriculation number, department, level, school, class, average age of students, subject, lesson topic, date, lesson duration and period of lesson. For practicing teachers, the matriculation number and level are not necessary.

The Instructional materials/ Teaching aids: Real objects should be made available to the students and, in cases where they are not available, teachers should endeavor to substitute for these objects using simulations, pictures, audiovisuals, and so on. As an example in the teaching of electrolysis in chemistry, the teacher should come to the classroom with a demokit for electrolysis. Where this is not available, simulations or charts showing a simple electrolytic setup can be used. The relevance of teaching aids cannot be underestimated in the teaching and learning process.

Behavioural Objectives: An objective is what one intends to achieve over a specific period of time. According to Mager(1975) a classroom objective is a description of a performance you want learners to be able to exhibit before you consider them competent. A classroom objective therefore describes an intended result of

instruction, rather than the process of instruction itself. Abimbola (2007) is of the opinion that an objective gives a teacher a specific direction and guidance in what to teach, how to teach it, what to evaluate and how to evaluate it. Objectives are short time in duration. Objectives in instruction may also be referred to as behavioural objectives, instructional objectives, performance objectives or simply, objectives. A behavioral objective is thus what the students should be able to do at the end of a learning period that they could not do beforehand.

Behavioural objectives should be stated in a specific way such that it properly describes the intended learning outcome. It is expected that objectives should be stated in a measurable form. The statements should be simple, clear and unambiguous. Objectives are usually stated in relation to students' behaviour. Recently, objectives are no longer stated in behavioural terms but basically should take cognizance of the three domains of learning; the cognitive domain, affective domain and the psychomotor domain. In a good lesson plan, objectives should be stated such that these domains of learning are captured. Hence, an instructional objective should state what the students should be able to know and able to do after instruction.

Consider the following behavioural objectives of teaching electrolysis in a chemistry class.

At the end of the lesson, students should be able to:

- identify the ions that will be present in a given electrolyte.
- explain the factors affecting the preferential discharge of ions.
- locate the position of some ions in the electrochemical series.
- draw a simple electrolytic cell.
- give details of the practical application of electrolysis citing examples.

Entry Behaviour/ Previous knowledge: The entry behaviour is the pre-requisite knowledge, attitude or skills that the students possess, which are relevant to the subject matter. The instructor may require learners to demonstrate such attitudes before introducing a new idea (Campbell, 2003). The entry behaviour encompasses all the experiences and previous education students bring along to the classroom before been exposed to a new topic.

Previous knowledge is the pre-requisite knowledge students already had before they receive the new instruction. It is a kind of background knowledge related to the new topic. It narrows towards a conceptual change of knowledge (Angelo & Cross, 1993). The previous knowledge can help or hinder learning. When previous knowledge is activated, sufficient, appropriate and accurate, it tends to support learning. When it is inactive, insufficient, inappropriate or inaccurate, it tends to hinder learning. It is the responsibility of the teacher to activate the appropriate previous knowledge in students. When considering the previous knowledge of students, it is important for the instructor to ask questions of what he thinks the students already know and correct some possible common misconceptions. It is therefore important that the previous knowledge should contain what the students have learnt in previous lessons, what they have seen or what they are familiar with in their environment before coming to class.

Developing an Introduction

This stage of lesson plan goes along with the presentation of the lesson. It is the first stage of lesson presentation. It is expected to provide information that will capture the attention and interest of the learner. It is the stage that motivates the learner and gives assurance that they will benefit from the lesson. The introduction can be presented by asking questions that will keep the students thinking about the topic or showing the learners real objects or pictures that relates to the new topic ("Linguistics", n.d.). It is the duty of the teacher to explain these objects in ways that they are relevant to the topic. It is at the introduction stage that the students are informed about the expected learning outcomes.

Presentation

This is the stage where the teacher presents the new information. It is guided by the teacher and there may be response from the students such that a well integrated lesson is accomplished. In cases where students are not responding, the teacher should ask questions to ensure that they are carried along during the lesson. The lesson presentation is an activity that should be done in steps and sequentially. There is no specific number of steps a lesson plan is supposed to have, but it depends on the topic being taught and the teacher presenting the lesson. Lessons should be presented from simple to complex, known to unknown and concrete to abstract. Therefore, suitable instructional strategy should be employed by the teacher in teaching a particular topic. Teachers should not limit themselves to a particular instructional strategy but should familiarize themselves with various strategies. This is because different topics will require different strategies while some topics will require combining experiences from different strategies.

During presentation of lessons, teachers should be conscious of the time allocated to different stages so as to meet up with the objectives of the instruction. Teachers should also ensure the participation of the learners during instruction by giving them simple tasks that will consume less time or ask questions as this gives the teacher an assurance that the students are not lost during the lesson. This will also make the lesson an interactive one and a teacher- and learner-centered instruction rather than a teacher-centered instruction. It is in the view of the author that a lesson plan that will contain activities of the teacher and the learner should be encouraged among the student teachers- tabular format. It is important to note that during the presentation of lessons, repetitions and unambiguous statements should be avoided by the teacher. Teachers should use simple vocabulary and speak distinctively without exaggerating. Presentations should be assisted using pictures, real objects and other materials that will make meanings clear.

Recapitulation

This involves going over the major points of the lesson. According to Abimbola (2007) recapitulation is an act of repeating the main points of something that has just been said. It is a form of re-teaching. At this stage, all the digression that may arrive during the lesson is opted out and the main objectives of the lesson are emphasized.

Evaluation

The term evaluation refers mainly to the value judgment. It is a measure the worth of a particular thing. It tends to find out how much students had learnt, it reveals the knowledge gaps, alternate conceptions and misconceptions that students acquired and how much of what is learnt can be used by the students. Evaluation is the systematic process of collecting and analyzing data in order to make a decision, identify the strengths and weaknesses of a program project or determine whether and to what degree objectives have been or are being achieved (Boulmetis & Dutwin, 2005). Evaluation should not be limited to the end of the lesson but it should be involved while the lesson is going on and end of the lesson. Periodic evaluation during lesson helps the teacher to correct misconceptions among the students so that they are not lost during the lesson. It provides evidence that students understand the lesson as it is going on and assists students to participate effectively during lessons.

The evaluation stage helps teachers to know whether the objectives of the lesson have been achieved. It also helps the teacher in preparing for the next lesson as to whether she needs to re-teach or move on to the next lesson.

Summary

A summary is a short note that contains the major ideas/ points of the lesson. It should be concise and brief. Summary should not be stated in an ambiguous manner and it should include the information that needs to be studied by the students. It can be written on the board for students to put down.

Assignments

This is a set of tasks assigned to students by their teachers. It could be on the topic just concluded or for further reading and probably allowing the students to embark on a project. Assignments help students on how to study. It points out clearly what students are supposed to do and how it is supposed to be done. It connects the new lesson with the one just concluded so that students can gain a whole and balanced view of the topic. Also, assignments give adequate provision for individual differences as assignments are done at the pace of the students to meet the stipulated deadline. It anticipates special difficulty in the advanced lessons and suggest ways to overcome them. Teachers should ensure that their learners understand the purpose and importance of their assignments in order to stimulate their interest.

References

They are materials consulted while preparing the lesson plan. They should be properly and clearly stated with page numbers indicated.

Sample of a Typical Lesson Plan for Student Teachers- Tabular Format

Name Matriculation Number

Department.....Level.....

School.....Class..... Subject.....

Topic.....Date.....Duration.....

Period.....

Instructional Materials

Instructional Objectives.....

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Entry Behavior/ Previous Knowledge.....

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Stages	Teacher's Activities	Students' Activities	Duration	Comments

Summary.....

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References.....

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Sample of a Typical Lesson Plan for Student Teachers- Prose Format

Name Matriculation Number
Department..... Level.....
School..... Class..... Subject.....
Topic..... Date..... DurationPeriod.....
Instructional Materials
Instructional Objectives.....
.....
Entry Behavior/ Previous Knowledge.....
.....
Introduction (time):
.....
Presentation (time):
.....
Recapitulation (time)
.....
Evaluation.....
Assignment
Summary.....
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Revision Questions

1. Describe the basic features of a typical lesson plan
2. Explain the different forms of writing a lesson plan. Choose a format and write a lesson plan for a selected topic in chemistry.
3. Explain the relationship between the previous knowledge and the entry behaviour in a lesson plan.
4. When should evaluation be done in teaching? Give reason(s) for your answer.
5. What are instructional objectives? How should they be stated?