

Teacher centered Approach

- (i) Lecture Method
- (ii) Demonstration
- (iii) Direct Assignment (with Questions & Answers)

Methods of teaching applied under each approach

Qn 01

a) Discuss five possible challenges facing the teaching of Science & Mathematics at Secondary Schools in Tanzania

- (i) Limited Resources & Infrastructure
- (ii) Language barriers
- (iii) Unqualified teachers
- (iv) Lack of motivation to learners
- (v) Outdated curriculum
- (vi) Lack of student motivation & engagement.

vii Large class size

viii Wrong notion / Negative perceptions to students

ix Cultural beliefs & misconceptions

x Social and cultural context to be covered.

Teaching Methods

- # Lecture 2 Ans

How To Improve Lecture Method of Teaching

- i Demonstrate
 - ii Use transitional words
 - iii Ask qns

③ Discussion Method

- free flow of conversation
 - Gives students opportunity to express their opinions
 - Ideas and hear those ideas from peers & teacher
 - A teacher is not a leader but may participate as a member of the group.

* When to use Discussion Method.

- When to use Discussion Method.
 - + You want to check what has been learnt e.g. from a field study or educational trip.
 - You want to explore the opinions, knowledge & experience.
 - You want to conclude a laboratory experiment.
 - You intend to give learners the chance to practise how to formulate, express & evaluate opinions.

* How to use Discussion Method.

- > formulate, express & evaluate opinions
 - > How to use Discussion Method.
 - > The topic should be interesting & relevant to the level of learners.
 - > Structure the discussion by means of series of questions instead of qns.
 - > Clarify the terms which may help learners understand the topic.
 - > One learner speak at a time.
 - > follow up interesting points and write down main points.
 - > keep focus on objectives for discussion and time.

(A) Demonstration Method

- A teacher performs an instructional activity or a process while learners are observing

* When to use Demonstration Method

- Materials are insufficient
- Time is not adequate
- The activity may be dangerous to the learners
- Introducing a new skill or concept
- Class is too large, demonstrate in small groups.
- Actions being demonstrated match with the voice.
- Go through each step one at a time
- Check all resources are available & working properly.

Teaching Techniques

Refers to specific acts or behaviours used by teachers to enhance learning

- Includes teacher's personal style of carrying out specific actions in teaching process.

Problems Facing Science & Maths Teaching

↓ Learning

i) Inadequate number of teachers

ii) Pressure to meet the set goals

iii) Lectures with no hands-on learning

Teachers Should have Proper Qualifications on these Knowledge

- i Content Knowledge (CK)
- ii Pedagogical Knowledge (PK)
- iii Pedagogized Content Knowledge (PCK)
- iv Technological Pedagogical Content Knowledge (TPCK)

- i Teachers own understanding of subject matter
- ii Teachers knowledge or practices on the subject
- iii Make subject matter accessible to students
(Shulman, 1986)
- iv What teachers need to know to effectively integrate technology into their teaching process

TAKE-HOME ASSIGNMENT

- What do you think should be the solution to these challenges? Suggest atleast one soln for each challenge.
- Read about the following Teaching Methods:
 - * Inquiry-based Learning
 - * Problem-based teaching method
 - * Case study
 - * Experimental

Scheme of Work

Is a teacher made document that interprets the syllabus and methodically arranges the content to be covered for a certain period of time.

Integration

- Refers to the horizontal relationship of curriculum experiences
- Linkages among subject matters to form a unified view

Sequence

Refers to the vertical repetition of curriculum elements which keeps increasing in term of complexity, breadth & depth.

Continuity

- Refers to the logical and consistency of a curriculum across different grade levels.
- It ensures that earlier learnt concepts are helpful and used in learning new concepts

Organisation of Syllabus should consider 3 aspects:

- Continuity

- Sequence

- Integration

Syllabus organization

Refers to patterns & arrangement of the syllabus components

- It describes two basic dimensions which are
 - Vertical organisation - what is learnt in one lesson prepares students for the next lesson
 - Successively arrangement of curriculum components by placing additional skills and knowledge.
- Horizontal organisation - side by side arrangement of curriculum components e.g. what is studied in one particular subject is in line with other subject.

The Syllabus

Is a document which contain a summary of what will be covered in a course of study.

OR

- A plan of an entire course of study which includes the goals and rationale, topics, resources, activities and evaluation strategies.
- It guides both teachers & students on what and how to learn.
- Prepared by TIE

COMPONENTS OF SCHEME OF WORK

- Objectives
 - It is copied from the syllabus.
- Refers to the scope of content to be covered by the end of the topic.
- Eg: By the end of the topic, the student should be able to - - -

Teaching Activities

Instinct student to:

- Read about the concept of
- Search areas where

Direct students to

- To prepare qns which will be

- Assign a task to students

Learning Activities

- Read from different sources about - - -

- Search places where - is applied

- Read / visit

- In groups to rehearsal on the

• Remarks

- Is an expression of opinion or judgement
- Teachers' opinions are presented at this part
- States the progress of the process
- Simplifies communication between teachers
- It includes dates and some of the developed competencies

E.g.; The topic was taught effectively & completed on 27th Nov, 2022, students developed ability to explain the meaning of Chem & - - - - -

• Assessment

It's the process of gathering data for a better understanding of a given phenomenon

Two styles can be used for presenting an assessment plan.

- Identifying the assessment tool & the phenomenon to be assessed
- Using Q & A to check if a student read the work

• Competence

E.g. By the end of the topic, the student should have ability to use - - - - -

• Objective

E.g. At the end of the topic, student's should be able to

Factors to Consider When Preparing Scheme of Work

- Number of periods per subject per week.
- Interruptions (Public holidays)
- Previous experience
- Methods fit for the level and learner abilities
- Available resources

The Preliminary Information may include:

- The name of the school
- Teacher's name
- Subject
- Class level
- Year

IMPORTANCE OF SCHEME OF WORK

- It monitors the teaching pace
- Enables systematic teaching
- Allows planning teaching methods/activities
- Reduces duplication/repetition of content
- Enables preparation of resources
- Remind teachers ~~of~~ of the covered contents
- Allows provision of reading resources in advance
- It helps the teacher to prepare lesson plans
- It simplifies communication among teachers

Lesson Plan (L.P)

It is a teacher made document that writes in details the instructions to be taken in periods

Factors to consider when preparing L.P

- i) Nature of topic/concept
- ii) Time allocated for teaching the concept & topics
- iii) Ability of the learners
- iv) Teaching & learning resources available
- v) Teaching & learning activities
- vi) Previous experience
- vii) Ability of the teacher in employing various teaching methods

Parts of a Lesson Plan

- i) Preliminary information
- ii) Lesson drpt
- iii) Evaluation phase

Preliminary information

①

Subject, Date, Class, Duration (Periods & Time), Number of students, main topic, sub-topics, main competence, specific competence, teaching aids, references,

Specific Competences

- Statements of intention of what the teacher plans to achieve with learners by the end of the lesson

Components (They are four)

- A ~~A~~ B C D
- Audience - refer who will achieve the competence.
- Behavior - Describe the observable & measurable task or behaviour using action verbs.
e.g. state, list, explain, choose, measure etc.
- Condition - Situation under which behaviour is to be performed : e.g. By the end of ----
- Degree of Performance - Criterion (how well must the learned behaviour be done).
e.g. Student should be able to define the terms competently

Example of Specific competence
By the end of 40 min, using the given bunsen burner. Student should have ability to explain the functions of atleast 3 parts of it.

X-tics of Learning Competences

They are represented by SMART

- Specific - should be well defined and clear,
- Measurable - should provide a target so that it can be assessed.
- Achievable - should be feasible in given time
- Relevant - address overall Program goal
- Time bound

LESSON DVP

Stages in the phase of lesson dvt:

- Introduction:
- New knowledge
- Reinforcement - use qns (Application of new knowledge)
- Reflection - give views
- Consolidation - summary of the lesson

Introduction

• Beginning of the lesson.

Involves activities such as

- Stating the purpose of the lesson,

- Reviewing previous lesson (If necessary)

- Find out on what students already know

- The new knowledge is introduced.

New Knowledge

• New content/activities are presented

Students have to follow activities.

• Students contribute to the knowledge

Learners Evaluation

- Students said that, ---

Teachers evaluation

10/12 students showed ability to explain

Remarks

The next lessons coverage will repeat the lesson

- In the next lesson we will repeat the process.