

METHODS OF TEACHING SCIENCE, BASIC TECHNOLOGY AND COMPUTER STUDIES



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CHAPTER 7

METHODS OF TEACHING COMPUTER SCIENCE EDUCATION

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Introduction

Method of teaching includes but not limited to formal instructional methods which include methods of instruction that involve verbal exposition by the teacher. The teacher presents explanations of principles and procedures and through questioning. Teachers should see themselves as problem solvers who need some tools. Some of the types of tools needed by teachers are discerned in this section. Examples of such methods include: the Lecture, the Discussion, the Recitation, the Tutorial, the Socratic, the Project, the Discovery, the Problem Solving, the Laboratory, the Demonstration, the Field Trip, the Play-way, the Role Playing and the Story Telling methods of instruction (Abimbola, & Abolade, 2004). However not every method will be dealt with in this section, we shall deal with the following methods depicting teacher-centered, learner centered and both teacher and learner-centered:

a. The Lecture method:

This is a teaching strategy in which the teacher makes a verbal presentation of ideals to the students. The students receive these ideas meaningfully or by rote. The bulk of the knowledge gained in school by the students involves basic information about the content areas. The lecture method is still the best method for teaching students' new concepts and principles because the weakness is not due to the method but due to the abuse of the method (Abimbola, 2004) in (Abimbola, & Abolade, 2004).

Merits:

- i. It is economical because it saves time and effort.
- ii. It is a good strategy for teaching large classes especially these days of large student enrolment in schools.
- iii. It is indispensable because it is applicable for teaching a range of school subjects.

Demerits:

- i. It may not be suitable for developing skills and attitudes in students.
- ii. It does not take care of individual differences.

The following are the guidelines for use of the lecture method:

- i. Students should be involved very well, to ask and answer questions.
- ii. Teacher should use as many strategies as possible in a lesson so as to allow the lecture to be the only strategy in the lesson.
- iii. The teacher should try not to do too much in a lesson to avoid confusing the students.
- iv. Lecturers should include repetitions and summaries within the lesson to bring out the points of the lesson.
- v. Lecture lesson can be organized into the following: the introduction, the body, summaries within the lecture and conclusion.

b. The Discussion Method:

This is a teaching method in which teachers and students share ideas, compare and contrast views on a given problem, a question or a situation. The method assumes that students have some background information on the topic of the discussion. The discussion can be teacher led or student led with teacher guidance. This method can be used to promote inquiry and develop problem solving skills (Abimbola, 2004) in (Abimbola, & Abolade, 2004).

Merits:

- i. Discussion help students become independent thinkers.
- ii. It provides students with opportunity of optimum interaction.
- iii. It provides good practice for problem solving.
- iv. It provides the teacher an opportunity for better understanding of the students.

Demerits:

- i. It is time consuming.
- ii. It does not allow for easy coverage of the syllabus and therefore it cannot be used too often.
- iii. Wrong information may be shared if some contributors are unsure of their points.
- iv. The method may be boring to some students who do not know much about the topic.

Guidelines for Use of the Discussion Method:

- i. The students taking part in a discussion should be seated in a circle or semi-circle for maximum interaction and eye contact.
- ii. The discussion leader should keep the discussion moving at a reasonable pace.
- iii. The discussion should be kept pertinent to the topic under consideration. Discussion can easily veer off the right course if care is not taken.
- iv. The teacher should encourage all students in the discussion to participate. Do not allow a few students to monopolize the discussion.
- v. Acknowledge all the contributions that the students make.
- vi. Reject irrelevant contributions with tact.

c. The Play-Way Method:

The approach involves engaging students in activities that bring pleasure or enjoyment to them. Such activities include: game playing, acting a play and playing music. This method can be adopted to suit the ages and levels of education of the learners. In view of this, it can be used to teach some concepts in subjects like literature, social studies, science and mathematics at both the primary and secondary school levels (Salman, 2004) in (Abimbola, & Abolade, 2004).

Merits:

- i. It stimulates students' interest in learning.
- ii. It makes the lesson more interesting and meaningful.
- iii. It encourages active participation or involvement of students in activities scheduled in a lesson.

- iv. It encourages creativity in learners. The learners come up with new ideas, knowledge and skill which are improvement over the already existing ones.
- v. It takes care of individual differences, because the approach encourages learners to work at their own pace.

Demerits:

- i. It consumes a lot of time that is because the teacher needs some time to choose and prepare educative plays that enhance teaching and learning.
- ii. It is expensive where materials are needed for dramatization or demonstration.
- iii. It could lead to boredom, if the duration of the play is too long.
- iv. Knowledge acquired by learners through this process may be difficult to evaluate, hence there is no standard way of assessing student participation in plays presented in form of classroom activities.
- v. It could be difficult on the part of the teacher to create or think of a play that suits a particular instance of lesson for easy comprehension of knowledge.

Guidelines for the Use of Play-Way Method:

- i. A chosen play should be enjoyable and interesting to those taking part and other members of the class.
- ii. The play should be able to sustain the interest of the students and not resulting in boredom.
- iii. The play for a particular lesson should conform to the age and ability level of the students.
- iv. The language of instruction should be clear and simple.
- v. The play should give learners ample freedom to express themselves in order to share with one another.

Questions

- 1. What are the guiding principles for selection of textbooks in appropriate subjects?
- 2. List the problems and prospects of teaching selected subjects?
- 3. Why is the lecture method of teaching usually regarded as a poor method by some teachers? Do you agree or disagree with their position? Justify your answer.
- 4. Select a topic suitable for teaching in a given class of a secondary school. Describe how you would use play-way method to teach the topic.

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