

CHAPTER - I

INTRODUCTION

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1.1 GENERAL BACKGROUND OF THE PROBLEM :-

It was envisaged in the sixth plan itself that modern technology should be used extensively to extend education to all sections of the society as well as to improve the quality of education. Scientific discoveries and technological advancements have changed the pattern of the life of nearly all human beings. Educational Technology refers to the study of use of different media such as Video/Audio visual aids, equipments like slide projectors, computers, televisions etc. with the study of principles, theories, formulae to solve the problems in the learning, teaching and training process.

The term Educational Technology although relatively new, is one that is already widely misinterpreted. It has distinct overtones of a mechanical approach to teaching and learning and as a result is thought of by many to refer solely to the use of mechanical or electronic aids in an educational context. That is, in fact a very small part of it.

Resources and materials are only one important aspect of this approach to Education. Technology has been described as the application of science to the needs of man and society taken in this context.

Educational Technology may be said to deal with the application of many fields of science to the educational needs of the individual and of the society as a whole.

Educational Technology is the application of the modern skills and techniques to the requirements of education and training. Including the facilitation of learning by the manipulation of media and methods and by the control of the environment where this reflects the learning.

The future schools, colleges, and universities are bound to change rapidly due to the impact of advanced technologies, even in the field of education and there is, therefore, the need to gear education and teacher - educators to meet the future requirements of the emerging society characterized by the following notable characteristics:

- 1) It may be subjected to great international exposure.
- 2) It will accelerate the process of change.
- 3) It will provide greater opportunities resulting in specialization and merit.

It is Educational Technology that will gear the teacher-educator to the needs of the changing society. Educational Technology may be taken to mean application of technological knowledge and development of electromechanical devices to the field of education towards the attainment of practical goals i.e. (improving efficiency of teaching and learning). Educational 'Technology in Education' and 'Technology of Education'.



Technology in Education

Technology in Education refers to the study of the use of different media such as Video/Audio aids and equipments like slide-projectors, computers, television etc. to make teaching-learning more effective.

Technology of Education

Technology of Education refers to the study and use of principles, theories, formulae of various disciplines to solve the problems in the teaching-learning, training process.

What does Educational Technology involve ?

- 1) It helps to modify traditional and conservative methods of instruction and adopt the scientific and technological methods of instruction.
- 2) It affords better adjustment to the everchanging technological world.
- 3) It promotes the development of proper technical, technological skills and scientific thinking and attitudes in learning.
- 4) It involves adoption of technological innovations and inventions of educational situations.

- 5) It enables teacher to use multisensory teaching-learning aids (Audio/Video, films, graphics, slides and transparencies).
- 6) It enables to lessen expenditure in education at all levels by a systematic understanding the problem.
- 7) It helps to bring about effective changes in the minimum time by using different media.
- 8) According to Educational Technology & not only uses the above principles but also those of psychology, sociology and statistics.

According to Instructional Technology the teaching and learning is effective only when the students are taught in a meaningful way. We should utilize the different media for the teaching. It is necessary for the teacher of today to make full use of available resources and to impart knowledge easily and accurately to the pupils.

The following tasks may be allocated to the Educational Technology teacher:

- 1) Designing and redesigning the Instructional System in terms of need and feedback.

- 2) Diagnosing, learning difficulties.
- 3) Using media effectively.
- 4) Tryout and implementing instructional innovation.
- 5) Identifying, generating and collection resources.
- 6) Evaluation cost-benefit analysis of learning material.
- 7) Communicating with different subsystems in the school system.
- 8) Motivating the members of the learning system.
- 9) Maintaining the material resources.
- 10) Teachers are today an agent of change.

(Yeole C.M. 1991)

The National Policy of Education (1986) lays a lot of emphasis on sciences and science education at the secondary school level. At the secondary school level students with special talent or aptitude should be provided with opportunities to proceed faster by making good quality of education available to them.

Maharashtra State Board of Secondary and Higher Secondary Education has revised syllabi for Std. VIII, IX and X in all subjects. Now Biology is learnt as a discipline of science. Biology has its own method of enquiry. The content matter and experimental work is framed to suit the age-group of Std. VIII, IX and X students.

Among the various methods of studying biology, observation plays an important role. Students activities are listed at the end of each chapter of the text-book. These are only suggestive. Resourceful teachers should supplement these during the teaching-learning process.

It is expected that the teacher will develop liking for the experimental work, habit of observation, experimentation, collection of plants, and animals, etc.

Science teachers have to face many problems in teaching science subjects especially. They find it very difficult to explain concepts in Botany for Std. IX and X.

Some of main causes are:

- 1) The teachers are not specialized in all the subjects (Botany, Zoology, Chemistry) at graduate degree level.

- 2) The teachers at the graduate degree or masters degree level have learnt only one special subject of science.
- 3) The teachers at the B.Ed. level have science teaching method.
- 4) The school-laboratories are not well-equipped with the apparatus, which are essential for conducting experiments.
- 5) The Audio/Video aids are not available in the market and they are not in accordance with the particular topics.

These are the problems before the science teachers.
We can help the teachers, by -

- 1) Giving them in-service training.
- 2) Conducting refreshers courses.
- 3) Arranging workshops in technology for handling the apparatus and preparing software.
- 4) Developing multimedia packages.

What is a Multi-Media Package ?

Multimedia package usually contain a variety of systematically related materials, which may include slide sets or

filmstrips; cassette tapes; large print or posters; specimen and models; apparatus; guide sheets for students etc.

They provide multisensory learning experience in specific area of study or unit. The package provides necessary ready-made materials for teachers for conveying information suitable to each learner.

The use of instructional material included in the package is carefully planned to promote the desired learning outcomes and to realise the objectives. The materials are evaluated and validated for their effectiveness in their specific use in the class-room.

(Sampath K. 1981)

Teachers should know the characteristics of media relevant to the learning experience -

Media can be classified according to various characteristics- into (A) Audio (B) Visual print (C) Visual non-projected (D) Visual-three dimensional (E) Audio-Visual (F) Real or Simulated (G) Small group of persons (H) Multimedia packages.

(Kulkarni S.S. 1989)

1.2 STATEMENT OF THE PROBLEM -

The statement of the problem for research on hand is therefore as follows :

**"DEVELOPMENT OF MULTIMEDIA INSTRUCTIONAL
PACKAGE IN BOTANY
FOR STD IX"**

1.3 DEFINITIONS OF THE TERMS -

The various terms used in the statement of the problem are defined for the sake of clarity and also limiting scope of the study.

They are as follows :-

DEVELOPMENT - The term development includes planning, designing, constructing and testing the package.

Multimedia Package :-

Multimedia package contains variety of materials systematically and directly related to content of Std. IX Botany which may include charts, slides, real specimens, flash-cards, guide-sheets and testing material for the teachers. These materials are evaluated, validated for their effectiveness in the specific use of class-room.

1.4 OBJECTIVES OF THE STUDY -

The study is undertaken with the following objectives-

- 1) To analyse the content of Botany and to determine the media required for the content.
- 2) To develop multimedia package on the content of Std. IX Botany as per requirement.
- 3) To validate the multimedia package in terms of its effectiveness.

1.5 HYPOTHESES OF THE STUDY -

The following hypotheses of the study were formulated:

- 1) A multimedia Instructional package in Botany for Std. IX can be designed and constructed.
- 2) The traditional instructional method and instruction by using multimedia instructional package differ in their effectiveness in overall performance of the students in Botany of Std. IX (Main effect).
- 3) The Boys and Girls perform differently in overall performance in Botany irrespective of the instructional method used for them.

1.6 ASSUMPTIONS OF THE STUDY -

Following were some assumptions of the study under investigation:

- 1) The secondary schools are not well-equipped in instructional media in Botany for Std. IX. ✓
- 2) The present instructional material available in schools today for Std. IX Botany is not relevant to the content. ✓

1.7 SCOPE AND LIMITATIONS OF THE STUDY -

- 1) The present study is mainly confined to two units i.e. (1) Classification of plants and (2) Tissues in plants of Botany for Std. IX.
- 2) The study is limited to the marathi medium students only.
- 3) The sample will be drawn only from two high schools in Jaysingpur city.
- 4) The multimedia package will be developed using charts, slides, real things, specimens, flash cards only.

1.8 ORGANISATION OF THE STUDY -

The multimedia Instructional package so developed and experimented with inferences and conclusions based on experimentation, have been systematically presented in the following VI chapters as indicated below :-

- CHAPTER I : INTRODUCTION
- CHAPTER II : REVIEW OF THE RELATED RESEARCH STUDIES.
- CHAPTER III : PLAN AND PROCEDURE
- CHAPTER IV : DEVELOPMENT OF MULTIMEDIA INSTRUCTIONAL PACKAGE
- CHAPTER V : ANALYSIS AND INTERPRETATION OF DATA
- CHAPTER VI : SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.