

Research Papers



## Preparation of Computer Assisted Instructional Programme On Unit in Science for Standard IX and a Study of its Effectiveness

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### Abstract

*Science has a core place in a school's curriculum because of its multifarious value to the individual as well as to the society. The greatest challenge is to humanize science. One such felt need is the individualization of instruction. The main goal of individualization of instruction is that each child's learning is made self-initiated and self-directed. The technical innovations in education, especially in the teaching-learning process have immensely helped the teachers to cope up with the explosion of knowledge. Development of teaching and learning material using computer capabilities reflects wider societal and technological advances. CAI is one such technique used in individualized instruction at their own pace.*

It could be used for revision of difficult topics and for remedial teaching for slow learners. Computer has the capabilities to make learning experiences much more exciting, satisfying, challenging, interesting and rewarding. In order to make the teaching of science more interesting and challenging, an attempt has been made to prepare a Computer Assisted Instructional Programme to teach one unit of science for std IX and to test the efficacy of this programme.

#### Introduction:

Man has proved himself as the almighty's most beautiful and worthy creation. This he could do only by proper blending of science of mind and science of heart. He has enhanced his standard of living by proper use of science and technology. The gradual change in the way of living can be seen through the history of mankind since many centuries and the 21st century represents a continued shift from an essentially agrarian society to a technologically controlled society. He

has used technology for development in various fields like communication, textile, mining, agriculture, transport and medicine. Likewise, technology has also entered the field of education for the improvement of the education system. Computer technology is one such technology, which has touched all aspects of human life, including education. The present research is an attempt to explore the usefulness of computer technology in teaching-learning process with the intention of making learning more interesting, effective, and challenging. In this research, the researcher studies the need of changing times, condition of teaching-learning in the Indian classroom and how the advanced technology helps to solve at least some problems.

#### Need of Present Study

Biology teachers need the skill of drawing and this is often lacking in teachers. And also they are unable to show actual pictures of examples mentioned in the textbooks, for e.g.

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Muehlenbeckia, Bryophyllum, Pistia, etc. But computer technology helps us to overcome all these difficulties with the help of well-designed instructional packages. Teachers overcome to above problems as well as give extra knowledge to students within the given time. CAI can help a biology teacher to convert the lecture method into more of a demonstration or slide show, where the teacher can easily show motion clips of say, germination of seeds, circulation of blood, lifecycle of animals, etc. Often the teacher has to show specimens, which are preserved and have lost their true colours or shapes. CAI can be used to show full colour pictures and even movements by reducing or enlarging the actual size. Lastly, computer could be used for revision of difficult topics, remedial teaching for slow learners and finally to bridge the gap between the slow learners and bright learners.

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Objectives :

- To prepare a computer Assisted Instructional Programme on the unit 'Habitat' for std IX.
- To implement the programme on std. IX students.
- To study the effectiveness of CAI programme.

**Hypothesis :**

Students will score significantly higher marks (at 0.01 level of significance) in the posttest as compared to the pretest as a result of exposure to CAI

**Review of Related Literature**

1. SwapnaPhatak(1992) revealed in her study that CAI, when used as a method of instruction is more effective than traditional method.
2. JyotiJadhav(2001) in her study explored that CAI program was effective in bringing about the learning of science unit.
3. FahemidaPatel(2002) concluded that CAI program was not only effective in learning science unit interestingly but also helped in remembering the facts in a better way.
4. GayatrideviKunjeer(2002) revealed that students preferred learning through CAI than by conventional method. They found CAI to be more interesting.
5. Shailaja H. G.(1986) concluded that CAI proved to be more effective than real teaching with respect to improving knowledge.

6. MeurechZemira(1988) revealed that Computer Assisted Mathematics Instructions positively affects the cognitive and affective development of disadvantaged elementary school pupils.

Research Methodology :

The researcher has adopted the experimental method to study the effectiveness of CAI on student's achievement.

**Sample :**

The sampling technique was incidental cum purposive by nature. Data was collected from 50 students of one division of Std IX, 'AbhinavVidyalaya High School', Pune.

Tools for Data collection

1. Achievement test on the selected unit in science used both as pretest and posttest.
2. Rubric for recording the response of the students towards the power point presentation.

Statistical Tools:

't' test and qualitative method was used to analyse the data.

**Findings :**

- 1] The posttest scores on achievements test are significantly higher than pretest scores at 0.01 level of significance. Hence, the directional hypothesis is accepted.
- 2] CAI programme was effective in bringing about the learning of the unit.
- 3] Students suggested that other subjects like Mathematics, Geography and History should be taught in the same manner.

Conclusions :

- 1] The study concluded that Powerpoint Presentation led to effective learning.
- 2] Extra relevant information was included to supplement the information provided in the textbook and the students considered this useful.
- 3] The students found the presentation fascinating and more valuable as compared to normal teaching. According to them, the lesson was not only interesting but also helped them to remember the facts in a better way.

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