



## Construction and Effectiveness of Computer Aided Instruction (CAI) Programme for the Units of Science and Technology of Standard VIII

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### Abstract:

*Use of computer in education is referred by many names such as:*

- *Computer Assisted Instruction (CAI)*
- *Computer Aided Instruction (CAI)*
- *Computer Assisted Learning (CAL)*
- *Computer Based Education (CBE)*
- *Computer Based Instruction (CBI)*
- *Computer Enriched Instruction (CEI)*
- *Computer Managed Instruction (CMI)*

### **New Terminology**

- *Web Based Training*
- *Web Based Learning*
- *Web Based Instruction*

*Computer-based education (CBE) and computer-based instruction (CBI) are the broadest terms and can refer to virtually any kind of computer use in educational settings. Computer-assisted instruction (CAI) Computer Aided Instruction (CAI) is a narrower term and most often refers to drill-and-practice, tutorial, or simulation activities. Computer-managed instruction (CMI) Computer-managed instruction is an instructional strategy whereby the computer is used to provide learning objectives, learning resources, record keeping, progress tracking, and assessment of learner performance. Computer based tools and applications are used to assist the teacher or school administrator in the management of the learner and instructional process.*

### **Computer Assisted Instruction (CAI)**

*A self-learning technique, usually offline/online, involving interaction of the student with programmed instructional materials.*

*Computer-assisted instruction (CAI) is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place.*

*CAI uses a combination of text, graphics, sound and video in enhancing the learning process. The computer has many purposes in the classroom, and it can be utilized to help a student in all areas of the curriculum.*

*CAI refers to the use of the computer as a tool to facilitate and improve instruction. CAI programs use tutorials, drill and practice, simulation, and problem solving approaches to present topics, and they test the student's understanding. Via this study the researcher found out that CAI and the use of technology and e-learning in education is an excellent way of teaching.*

**Keywords:** *Computer Aided Instruction, Effectiveness, Science, Technology*

## 1. Introduction

Present and future depend on Science and technology. Science and technology have got its importance place in every field. No work is possible without use of technology. If advance technology is used in industries highest production can be obtained in minimum time. Similarly, if technology is used in the process of education, students can be taught easily, in interestingly and meaningfully.

In the present time, various types of audio-visual aids have been developed by the technology in the race of advancement. Teaching through Computer Aided Instruction (CAI) Programme is such a technique that learning materials of computer can be easily made and it is through CAI Programme that teaching in classroom can be best imported.

Hence, keeping the above point of view in mind, the researcher has attempted the research study concerning Construction Effectiveness of Computer Aided Instruction (CAI) Programme so that teachers of secondary schools can understand the concept of Construction of Computer Aided Instruction programme and to use them in the classroom.

## 2. Objectives of the Study

1. To construct Computer Aided Instruction (CAI) Programme for the units 'Carbon' and 'Some Common Diseases' of Science and Technology subject of Standard 8<sup>th</sup>
2. To construct Academic Achievement test for the units 'Carbon' and 'Some Common Diseases' of Science and Technology subject of Standard 8<sup>th</sup>
3. To Study the effect of CAI Programme and Lecture method on Academic Achievement through post-test.

## 3. Hypothesis

**H<sub>01</sub>:** There is no significant difference between mean Scores of Students of Experimental group and Control group in post-test

**H<sub>02</sub>:** There is no significant difference between mean Scores of Girls of Experimental group and Control group in post-test

**H<sub>03</sub>:** There is no significant difference between mean Scores of Boys of Experimental group and Control group in post-test.

## 4. Methodology

### 4.1 Sample

To keep in mind the population of the Present research study, schools were selected through purposive sampling method by the researcher. Shree M. C. Patel Gayatri Vidhyalaya was selected from the schools of Gujarati medium of Mehsana city as a purposive sample and the students of Standard 8<sup>th</sup> of this school were selected by cluster Sampling. Two Similar groups were formed on the basis of t-value of Science and Technology subject of Standard 7<sup>th</sup> of annual exam of selected students. From this, randomly one group was considered as an Experimental Group and the other as a Control Group in which 120 students were selected from which 60

students were accepted as an Experimental Group and 60 students as a Control Group which is shown in table 2

**Table 2 Sample of the Study**

Name of the School	Types of Group	No of Students		Total
		Boys	Girls	
Shree M. C. Patel Gayarti Vidhyalaya	Experimental Group	31	29	60
	Control Group	31	29	60
	<b>Total</b>			120

#### 4.2 Tools Used

The Researcher had prepared Computer Aided Instruction Programme of the unites Carbon and Some Common Diseases of Science and Technology subject of Standard 8th in the present study. Achievement test was also constructed by the investigator

#### 4.3 Process of an Experiment

Based on the Science and Technology subject of std-7<sup>th</sup> of annual exam Scores experimental group and a control group were constituted. The experimental group was exposed to Computer Aided Instruction Programme strategy whereas the control group was exposed to Lecturer method of teaching.

After experimental treatment, post-test was administered to assess the effectiveness of the strategy on achievement. The data were collected to analyse the effect of the strategy on achievement and also to study the level of gain scores of experimental group

#### 5. Data Analysis

The collected data were subjected to various statistical analyses (mean, Standard Deviation, standard error, C.R., kurtosis, skewness, Q, p10, p 90) and the results obtained were interpreted.

#### 6. Verification of the Hypotheses

The following null hypotheses were formulated for testing in the present study. Calculations were done for these hypotheses. Hypotheses were tested through kurtosis which is shown in the following table.

**Table 5 Verification of the Hypotheses**

Sr. No.	Hypothesis	C.R.	Level of Significant	Interpretation
H <sub>01</sub>	There is no significant difference between mean Scores of Students of Experimental group and Control group in post-test	3.30	0.01	not accepted

Sr. No.	Hypothesis	C.R.	Level of Significant	Interpretation
H <sub>02</sub>	There is no significant difference between mean Scores of Girls of Experimental group and Control group in post-test	2.16	0.05	not accepted
H <sub>03</sub>	There is no significant difference between mean Scores of Boys of Experimental group and Control group in post-test	2.50	0.05	not accepted

### 7. Findings of the Study

In the present study, from the data and statistical analysis the following findings were made mentioned as below.

1. There is significant difference between mean scores of Control Group and Experimental Group Students in Post test which is in favour of Experimental group. So, it is concluded that CAI method is more effective than Lecture method.
2. There is significant difference between mean scores of Girls of Control Group and Experimental Group, Boys of Control Group and Experimental Group in Post test. So, it Can be said that academic achievement of boys and girls who were taught through CAI method was higher than that of academic achievement of boys and girls who were taught through Lecture Method

### 8. Summary

To Increase concentration of students in tough subjects like science, to make enlightened atmosphere in classroom, to clear the subject matter, computer based learning is a very useful for teacher. To improve the quality of science education the present study is useful.

### References

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