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**SECTION - A****INTRODUCTION :**

We are crossing the threshold of a new information age. The age in which we now live is quite different from that of our parents; or any other generation. It is mainly characterized by rapid change in technology, life styles and values. In fact, some people claim we are moving from an industrial age into a postindustrial 'Information age.'

Until now research in Computer Based Education is confined to College level mostly. In this research it was proposed to study the effect of Computer Aided Instruction at the school level in the subject of Mathematics.

**The Study : Statement of the Problem**

THE USE OF TEXT BASED SOFTWARE IN TEACHING LEARNING OF ALGEBRA FOR EIGHT STANDARD ADOLSCENTS - A STUDY

This study intends to investigate the results of the introduction of computer and its use with a text based software in the teaching and learning of Algebra to eighth standard adolescents of Kolhapur City.

**DEFINITIONS OF TERMS :****SOFTWARE :**

A set of programme that can run in a computer is called software. The programme is a set of logically sequenced instructions to the computer.

Software prepared an instructional material based on the eighth and ninth chapters of text book of Algebra of VIII standard.

**TEACH :**

Teach mean to organise experiences together, which help students in getting experience.

Eighth Standard : Adolescents of age group 12+

**SIGNIFICANCE OF THE PROBLEM**

1. As far as the knowledge of the investigator goes no study of this kind especially on teaching of VIII standard Algebra by using computer has being done earlier.
2. As VIII standard Algebra forms the basis for Ninth and Tenth standard Algebra it is necessary to teach it effectively at their own speed through the computer. Hence the necessity for this study to see the effectiveness of CAI.
3. A computer programme is prepared by investigator for the subject Algebra of Eighth standard.

**Objectives of the Study**

1. To analyse the course content of Algebra of VIII standard.
2. To prepare text based software for Algebra of VIII standard.
3. To study the effectiveness of text based software.

4. To determine the sex differences on the ability to learn through computer.

### **HYPOTHESES**

1. There is no significant difference in case of girls in performance of Algebra by two methods.
2. There is no significant difference in case of boys in performance of Algebra by two methods.
3. There is no significant difference in paired groups by two methods.
4. There is no significant sex difference in the ability to learn through computer.

### **LIMITATIONS :**

1. The sample was composed of only English medium eighth standard students.
2. Only 60 students were taken at random. In these 30 were for experimentation.
3. The study was limited to eighth and ninth chapters of eighth standard Algebra book of Maharashtra Secondary School Board, Pune which pertains to Algebra.

## **SECTION-B**

### **DESIGN OF STUDY**

#### **Research Design**

Experimental method of research was found to be appropriate

for the present study.

### **SAMPLE**

A random sample of 60 students studying in Eighth standard of Irwin Christian High School, Kolhapur constituted the sample of study. Out of these sixty students thirty were considered for experimental group and thirty were considered for controlled group. Equal number of boys and girls were selected in experimental group and controlled group.

### **DATA GATHERING TOOLS**

For both the groups the same pre-test and post-test in the form of paper pencil test was administrated.

### **COLLECTION OF DATA :**

To collect essential data required for the study pre-test and post-test were checked and list of marks were prepared.

### **TECHNIQUES USED FOR ANALYSING OF DATA :**

The data obtained from pre-test and post-test of the regular classroom method and computer aided instruction was analysed by using suitable statistical techniques. The average (means) of scores, standard deviation of stores, t test, f test were applied for comparison of two groups and two methods.

## **SECTION - C**

### **FINDINGS OF THE STUDY**

1. The t test of experimental group and controlled group scores revealed that there is significant difference of scores between the CAI method and traditional method.

2. From the means of both the groups it is observed that CAI method is more effective than traditional method.
3. There is no significant difference regarding the effectiveness of CAI method between boys and girls of experimental group.
4. There is no significant difference regarding the effectiveness of traditional method between boys and girls of controlled group.
5. A computer programme can be prepared on text of mathematics.
6. Computer can be used as a tool of teaching and learning mathematics.

## **SECTION-D**

### **DISCUSSION AND INTERPRETATION OF RESULTS**

The study revealed that there is significant difference in respect of test scores for learning the text in between the experimental group students who got experiences by computer and controlled group students who got experiences through regular class room method by their own teacher and tested by paper pencil method.

But, in the case of experimental group the human interaction between the teacher and the taught is neglected while in the case of controlled group there is human interaction between the teacher and the taught. But a computer can be used for slow learner who can get experiences according to his/her own speed.

It may be pointed out here that, the findings of the study should be verified on a large sample. As this study was confined only to English medium students of Kolhapur, the sample happened to be small in number. A study with a large sample consisting of Marathi medium

students could not be undertaken due to restriction of time and resources.

It may be further pointed out that, in this study. Students attitude towards computer and opinion about the use of this medium (computer) has not been studied. This calls for further investigation. Since, opinion and attitude effects attention, concentration etc. While learning through electronic medium; the computer.

## **SECTION-E**

### **EDUCATIONAL IMPLICATIONS**

Every one does not need to learn programming, yet everybody in education must learn about computers.

Computer in Education is no more equated with learning by programming language. The developments in the field enable every one to use computer and enhance one to use computer and enhance their efficiency and effectiveness. (Deadhar PS. 1992)

In the field of Education, computers can be used for

- [A]
- (1) Revision of difficult topics.
  - (2) For slow learners.
  - (3) For remedial teaching and narrowing gap between slow and bright learners.
  - (4) For model of real life examples and experiments can be done with computer.
  - (5) For repetition of experiments such as these that can be performed only once in real life.
- [B] Computer are used in a wide variety of modern system which

require different levels of training and specialisations therefore educational qualifications for each level must be specified.

[C] In new syllabi of Maharashtra Secondary School Board, Pune in IX and X standard Syllabi computer is introduced. Therefore student should know various parts of computer and use of computer in various fields.

[D] All children must be given computer education and teachers must be given incentives to train themselves in this field. They are by being given increments and at least six months training with salary.

(Kulendar Swamy, Vice chancellor of Indira Gandhi Open University.)

[E] Computer education should be introduced from 5th standard. Conceptual framework From 1st to 8th standard 80% time should be devoted to learning with computers and 20% about computers. Before 8th standard instruction should be non - verbal. In the 9th and 10th standards 50% time for learning about computers. Between 10th and 12th standard it should be offered as an effective subject.

(Vittal N. 1992, Secretary, Department of Electronics.)

[F] There should be training courses for teachers who are not proficient in computers.

[G] Computer education should be offered in rural sector. Computer is one of the major instrument for monitoring information. Computer education has a tremendous effect on the development of thinking algorithm. Indian development can not be isolated from development of rural children.

(Mukhopadhyay in 1990 Educational technology, Aug. 1990.)



## SECTION-F

### SUGGESTIONS FOR FURTHER RESEARCH

Following are some of the suggestions for further research -

- (1) The study be repeated involving large number of sample in the form of a research project.
- (2) The study be repeated taking comparison with regional Marathi language students.
- (3) A study of student's & teacher's attitude towards computer, emotions while learning with computer should be undertaken.
- (4) A study of rural and urban students should be undertaken in respect of computer education.
- (5) A study of computer education and availability of resources in the concerned area should be undertaken.
- (6) The study be repeated by taking a floppy in C language. It will be better to use 'C' language instead of BASIC language.

"Without extending the use of computer in the rural sector Indian development can not be ensured."

(Sen, 1990 in Education technology.)

If it is found that in each and every subject, learning through computer is more effective than learning through traditional method, by using a computer and floppies of corresponding subjects, student can learn in home, instead of going to school. By this method students can learn with their own pace and time. The concept of 'Deschooling' can be implemented by wide use of C. A. I. method.