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A STUDY OF EFFECTIVENESS OF COMPUTER ASSISTED INSTRUCTION (CAI) AND TRADITIONAL METHOD OF TEACHING LANGUAGE (ENGLISH) TO HEARING IMPAIRED CHILDREN



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ABSTRACT

The purpose of the present study was to compare the effectiveness of computer assisted instruction (CAI) and traditional method of teaching English language (Noun) to hearing impaired children. As it was an experimental study, the two groups were formed on the basis of different treatments – Group A was taught by traditional method and Group B was taught by CAI package. A sample of 32 deaf and dumb students of Government Deaf / Dumb school, Bareilly were selected on the basis of General Mental Ability test as pre test which consisted of 16 Girls and 16 Boys from classes 6th, 7th and 8th. The tools used were General Mental Ability Test (as pre test), CAI package and achievement test on 'Noun' (as post test) prepared by researchers themselves. The results revealed that there is significant difference between mean gain scores of experimental and control groups.

KEYWORDS: computer assisted instruction (CAI) and traditional method, control groups.

INTRODUCTION

Five fingers of the hand are not uniform and equal and similarly all the people of this world are not identical and equal physically and mentally. So in every society, to find out the existence of handicapped children were consented as a result of curse and divine vengeance. But 'change' is law of nature.

Census of India 2001 has revealed that over 21 million people in India are suffering from one or the other kind of disability. This is equivalent to 2.1% of the population. Among the total disabled in countries 12.6 millions males and 9.3 millions are females.

About 15 percent of the world's population some 785 million people has significant physical or mental disability, according to a new report prepared jointly by the World Health Organization and the World Bank. (9th June 2011)

One of the most significant changes in our society during the past half century has been our response to the functional needs of severely and profoundly handicapped children. In different surveys it was found that 10% people of world population are mentally or physically handicapped. India itself there are nearly 6 crores of handicapped people, i.e., nearly 1/8th of total handicaps of the world. Handicappedness never means that a person is totally unable to perform some specific task or tasks.

Handicappedness is of three types:

1-Physical 2-Mental 3-Multiple

Physical handicappedness includes locomotion, lames, blindness, dumbness and deafness or any such deficiency. These types of children need separate specific teaching strategies in order to teach them effectively. To teach the hearing impaired children, many traditional teaching methods such as finger spelling, sign language, oral method and total communication methods and many other aids are used. During last 20-30 years, we have witnessed a remarkable change in science and technology. These changes have been found very effective in the field of the education such as T.V. , Video , Tape Recorder, computers etc . Among this Computer Assisted Instruction is being stressed all over the world in the field of education. A lot of researches conducted all over the world have proved CAI very effective for teaching and learning. For handicapped children CAI has got immense potential as it can facilitate learning to these children in many ways.

To get better educational achievements , computers have proved to be more useful along with the traditional method of teaching because normally what we hear we retain 3.5% of that and what we see we retain 7.5 % thus the hearing impairment is not a big problem but the old traditional method is not sufficient to teach them. Having reviewed the researches undertaken in the field of CAI and Traditional Method it was observed that a lot of researches have taken place in foreign countries and the country very few studies have been done in India. Bigge June L. (1976); Kulik , Kulik and Cohen (1980) ; Hasselbring (1982); Ragosta (1983); Anand (1985) ; Underwood (1988) ; and Pandey (1991) have concluded positive results of using CAI package than the traditional method, to teach different subjects .

In India very few studies have been made about hearing impaired and we have not yet given a serious thought to these problems. It is now time to begin with and to find effectiveness of CAI for meeting the educational needs of providing a medium to help learners structure and test their knowledge therefore the researchers have made an attempt to study the comparative effectiveness of CAI and traditional method of teaching English to hearing impaired children .

DELIMITATIONS OF THE STUDY:

- 1.The researchers have selected English language only for the study.
- 2.Teaching of English Grammar has been chosen. Further, the topic , 'Noun' being basic to English Grammar , has been selected for the study.
- 3.Hearing impaired children are usually scattered in very large areas. However, students of a single

institution only 'Government deaf/ dumb school' at Bareilly has been selected for the study

4.The present study is confined to the class 6th, 7th and 8th only.

5.Due to the limited number of students in classes, the sample of students is 32 in numbers.

OBJECTIVES:

The objectives of the present study are taken as follows:-

- 1.to compare the effectiveness of CAI and Traditional Method of teaching English Language to hearing Impaired children.
- 2.To compare the effectiveness of CAI and Traditional Method of teaching English Language to male hearing Impaired children.
- 3.To compare the effectiveness of CAI and Traditional Method of teaching English Language to female hearing Impaired children.

HYPOTHESES:

In order to realize the objectives of the study, the following hypotheses are formulated for testing.

- 1.There is no significant difference in the effectiveness of CAI package and Traditional Method of teaching English Language to hearing Impaired children.
- 2.No significant difference exists in the effectiveness of CAI and Traditional Method of teaching English Language to male hearing impaired children.
- 3.There is no significant difference in the effectiveness of CAI package and Traditional Method of teaching English Language to female hearing Impaired children.

METHODOLOGY:

Experimental research is done to conduct this study. Two groups were formed-experimental group and control group of hearing impaired children.

SAMPLE:

The study was conducted on the population of hearing impaired children girls and boys . for this purpose the institution ' Government Deaf / Dumb School' at Bareilly was chosen . The total strength of the school was 148 out of which 108 were boys and 40 were girls. The researchers decided to restrict the sample to only 6th, 7th and 8th classes. Thus 32 students (Girls / Boys) were taken as sample.

RESEARCH TOOL:

In the study all the research tools were prepared by the researchers themselves for the collections of the data which are as follows:

- 1.General Mental Ability Test on English Language.
- 2.Computer Assisted Instruction package.
- 3.Achievement Test.

PROCEDURE OF THE STUDY:

Firstly, from the two groups – experimental and control groups of hearing impaired children the general mental ability test of children prepared by the researchers was administered on the students of classes 6th, 7th and 8th. After scoring the answer sheets, the students for study sample were selected by paired matching and then as from the pairs, one student was selected for

experimental group and other for control group. Thus the two groups were formed.

After the groups formation, the control group (A) was taught English Language (Noun) through the traditional method (with the help of black board, chalk and sign language) and Experimental group (B) was taught through CAI package to know the effectiveness of two methods. The researchers explained the content to group (A) using question answer and other usual practices of traditional method of teaching thereby making the efforts to cover the same content as in the CAI package page wise. In cases of difficulty offered by the students, the content was repeated and achievement test was taken.

In the similar manner group (B) was selected for providing the learning material through CAI strategy. For this purpose were installed in computer lab. The experiment started with a preliminary phase in which students were made familiar with the computer procedures of including the inputs in it and getting the outputs.

The programme ‘Noun’ was loaded by the researchers in all eight computers and students were asked to go through the whole programme individually and at their own pace. The programme was started with the definition of noun and examples with graphics and pictures , the exercise questions were given with three alternatives , the students had to click with mouse at any one of those alternatives if the answer is wrong , the feedback displayed on the screen until the students give the appropriate response of the question, after giving the right responses the student had to come out of the interaction so there were ca number of question to which the student had to respond than the next eight students had gone through the same process .

Thus all the students of group (B) got individualized instruction through CAI strategy, for the concept of noun the achievement test (as post test) was administered and score was recorded by adding the right responses of achievement test. Thus the experiment was completed.

RESULTS AND INTERPRETATION:

Table 1: Table showing the Mean, Standard Deviation and t-value of gain scores in Achievement Test in English Language of experimental and control group.

Subject	Mean	S.D.	t- Value
Experimental Group	61.5	13.63	4.59**
Control Group	43.5	7.38	

* -significant at 0.05 level

** - significant at 0.01 level

Table 1 shows that the Mean gain score of experimental group is superior than that of control group in case of effectiveness of CAI package and traditional method of teaching. The obtained t- Value for the difference in Achievement is (4.59) which is significant at 0.01 level of significance.

This indicates that there is significant difference between mean gain scores of experimental and control groups. So the Null hypothesis (1) is rejected.

Therefore there is significant difference in the effectiveness of CAI package and traditional method of teaching English Language .CAI package seems to be more effective.

Kulik, Kulik and Cohen (1980) also concluded that CAI package is more effective than traditional method of teaching.

TABLE -2 Table showing the Mean , Standard Deviations and t- Value of gain scores of Boys of experimental and control group in Achievement Test in English Language.

Subject	Mean	S.D.	t- Value
Experimental Group (Boys)	67.5	11.74	4.08*
Control Group (Boys)	45	8.66	

* -significant at 0.05 level

** - significant at 0.01 level

The t-Value (4.08) obtained for the difference. This clearly reveals that boys of the experimental group have achieved more as compared to those of the control group. Thus teaching with CAI package is more effective to teach male hearing impaired students.

The Null hypothesis (2) is thus rejected.

TABLE -3 Table showing the Mean , Standard Deviations and t- Value of gain scores of Girls of experimental and control group in Achievement Test in English Language.

Subject	Mean	S.D.	t- Value
Experimental Group (Girls)	55.5	12.32	2.76*
Control Group (Girls)	41.5	5.27	

* -significant at 0.05 level

** - significant at 0.01 level

It is observed from above table that the t-Value (2.76) for this difference between female students.CAI and traditional method is significant at 0.05 level of significance for 14 degree of freedom. It shows that there is significant difference in the effectiveness of CAI and traditional method for teaching English Language to female hearing impaired children. Hence the Null hypothesis (3) is rejected.

Thus we can conclude that female hearing impaired children gain more when taught through CAI packages as compared to traditional method of teaching English Language.

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