



Computer Assisted Instruction in Teaching of English Grammar: A Pedagogical Innovation

INTRODUCTION

English has been one of the most used languages in the world and it has a significant importance in the field of education. It plays a vital role to have the better view of the world and to have better access of the latest sources of knowledge and information. In other words, it can be called as a living stream of knowledge that plays a vital role in producing changes and accepting new trends in the society. English language teaching is used as an important measure to judge the effectiveness of different pedagogies. The pedagogy used impacts students' achievement and attitude. In this modern era of Information and Communication Technology (ICT) English can be taught effectively with the help of computers and in that Computer Assisted Instruction (CAI) is very useful as it lessens the burden of the teacher and makes teaching and learning interesting. Many studies have proved that students learn things at their own pace and convenience through CAI. It can also satisfy the need of the students of different age groups and proved to be effective in teaching different subjects so the present study is undertaken to find out the effect of CAI by integrating ways of different presentation that is by using only CAI, with adequate repetition and followed by discussion. The study may be useful to find more pedagogical innovative use of CAI for teaching learning processes. Educators should have knowledge of content as well as pedagogy expertise because CAI should not be developed without consideration of content and pedagogy. This paper provides an overview of some important teaching and learning concepts that should be considered when developing CAI.

The purpose of present study is to examine the potential of the CAI in helping students in secondary schools to learn English as a second language. The study is intended using computer as a tool to integrate teaching materials through the use of CAI to motivate students to learn English grammar more effectively. Further it also focuses on how to learn English Grammar more easily and to use it correctly.

RATIONALE OF THE STUDY

English is taught as a compulsory subject at all the stages, starting from V to XII standards of school education. The apprehension of National Curriculum Framework (NCF-2005) is very true in the context that, "If in the next five years we are not able to achieve considerable success in the teaching of English, we will face the political demand for all schools to become English medium...".

NCERT (2006), also reports that the failure of a large number of children in class X examination on account of English is an issue of worry. Here, the failure of students is considered with respect to their poor achievement or performance in English subject. The existing syllabus of Std. IX has potential to build up a strong language proficiency in the students, which will help them a lot in pursuing their higher studies in future. But the poor performance of the learners at this level proves the significance of Std. IX English as a base for the upcoming standards in the ladder of education. Hence, the investigator has focused on developing CAI mainly in English grammar for Std. IX which will be further helpful to the learner's at large scale in developing language proficiency.

Grammar is the study of words and the ways words work together; an invisible force that guides us as we put words together into sentences. Any person who communicates using a particular

language, consciously or unconsciously becomes aware of the grammar of that language. This can be understood with the help of the following example given by Kohli (1984), "A writer has given a beautiful analogy to illustrate the use of knowledge of Grammar. Imagine two car drivers. The first driver knows only driving and nothing about the working of the engine. He feels helpless whenever there is some trouble with the machinery. The second driver knows driving and also understands the working of the machinery. The person who knows grammar is like this second driver. In case he is doubtful about the correctness of a particular thing, his knowledge of grammar comes to his rescue." Therefore, to speak in a clearer and more effective manner one has to study grammar. If the person who wishes to communicate in the artistic manner with well-defined structures, he must go for the greater depth of understanding and proficiency what the study of grammar offers. Now a day, the situation of English Grammar teaching needs to be strengthened through innovative approaches. Computer has been proved a useful tool under such approaches through various research studies. Computer as a medium, because of its suitable attributes can help in realizing the objectives of English grammar. Though Std. IX students are at formal operational level but learning English through grammar becomes little bit abstract in the absence of sound effects, visualization and colors. Hence, the investigator has decided to develop a CAI for teaching and Learning of English grammar at Std. IX level.

Advancement of technology has influenced each and every aspect of human life. The system of education is not an exception. The objectives of education have also become multidimensional. CAI has unique features because it can store, retrieve and transform the information. Many researchers like, Acharya (2005), Badiyani (2008), Das (1998), Patel (2009), Sakhiya (2006), Zyoud (1999), attempted to develop multi-media packages i.e. Programmed Learning Material, Computer Assisted programs to enhance learning in English language. The studies further suggested that more packages and programs need to be developed so as to enhance the learning of English language, especially focusing on grammar. It is observed that most of the studies were conducted at school levels in different subjects for studying effectiveness of Computer Assisted Instruction. No study was found focusing on the English language subject covering the major hard spots of learning in English grammar based on prescribed syllabus of Std. IX.

It seems that simply developing CAI for English grammar may not serve the purpose of quality improvement in English. It necessitates identification of the major hard spots of learning especially in English grammar basically to serve as the basis for the development of CAI. Hence, the investigator will identify the major hard spots of English grammar on the basis of the opinion of some experienced English teachers.

A logical analysis of the reviewed studies revealed that most of the CAI developed in English language under the studies were in the form of Microsoft PowerPoint presentations. They were lacking the innovative approaches based on integration of applications like animation, visualization, colour – sound and imaginary effects, etc. So, the investigator has decided to integrate all such applications in the development of CAI under the present study.

OBJECTIVES OF THE STUDY

- i) To develop Computer Assisted Instruction (CAI) in English grammar for Std. IX students.
- ii) To implement the Computer Assisted Instruction (CAI) as a pedagogical innovation.
- iii) To study the effectiveness of a CAI in terms of achievement of the students.

HYPOTHESES

- i) There will be no significant difference in the mean scores of experimental and control group.

EXPLANATION OF THE TERM

- **Computer Assisted Instruction (CAI) in English:**

CAI in English grammar refers to the Computer Assisted Instructional Package developed by the investigator using various software to teach English grammar to the students of Std. IX. The CAI was based on selected grammar points, which would be identified on the basis of opinion of some experienced English teachers. The CAI was included explanation of various topics with examples, exercise, self-practice and self-evaluation in different forms.

OPERATIONALIZATION OF THE TERMS

- **Achievement:**

Achievement means the marks obtained by the students of Std. IX in the achievement test based on English grammar.

- **Effectiveness of CAI:**

Effectiveness of CAI was judged on the basis of the significance of difference in mean achievement scores of the experimental and control groups in pre-test and post-test.

DELIMITATION OF THE STUDY

The present study delimited to the students of Gujarati medium grant-in-aid secondary schools of Vadodara, following the prescribed syllabus of Gujarat Secondary and Higher Secondary Education Board (GSHSEB).

METHODOLOGY

POPULATION

There are total four clusters of schools in Vadodara city known as 'Shala Vikas Sankul' (SVS) and under these four SVS there are total 106 Gujarati medium grant in aid secondary schools. So, total 9976 students of Std. IX grant-in-aid secondary schools of Vadodara city of Gujarat state under GSHSEB constituted the population for the study.

SAMPLE



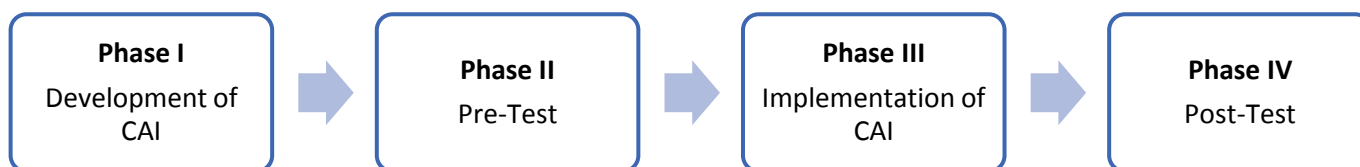
The list of grant-in-aid Gujarati medium secondary schools Vadodara city was collected from the District Education Office (DEO) office, Vadodara. Then, two schools (Jeevan Bharti School and Narayan School) were selected purposively for the selection of the students. An intact class of Std. IX from each school considered as the sample for the present study. Then, students from Jeevan Bharti School was treated as the experimental group whereas the Narayan School's students were treated as the control group.

DESIGN OF THE STUDY

The proposed study was a developmental cum experimental in nature wherein Quasi-Experimental Design was used. The pretest – posttest Nonequivalent Group Design was followed under the study.

PLAN AND PROCEDURE

The study was conducted in four different phases. The phase wise detail is described as under.



Phase I – Development of CAI

Prior to develop the CAI, content of the English text book (Std. IX) was analysed and overall grammar points were identified. Then by conducting the interview of the selected experienced English teachers, difficult teaching points of English grammar was identified.

Phase II – Administration of Pre-test

Under this phase, a pretest (an achievement test in English grammar) was administered to the students of experimental and control groups with a view to measure their achievement level in English grammar.

Phase III – Implementation of pedagogical innovation

The developed CAI was implemented only in Experimental Group. For each grammar point under pedagogical innovation researcher had prepared a CAI, three periods (under the regular time table) were allotted during a week. The CAI was implemented under the three allotted periods within a week.

Phase IV- Administration of Post test

Under this phase, the post test was administered to both the experimental and control groups with a view to study the effectiveness of the implemented CAI.

TOOLS FOR DATA COLLECTION

Achievement Test: The achievement test was constructed on the basis of the identified hard spots of learning. The similar achievement tests were used as pretest and posttest with a view to know the achievement level of the students in English grammar. Students' achievement in English grammar was judged on the basis of marks obtained in the test based on various types of grammar test items.

DATA COLLECTION

To study the effectiveness of CAI, investigator collected the data in terms of students' achievement in English grammar regarding the implemented CAI. The students' achievement was studied by collecting data in terms of their achievement scores with the help of pretest and posttest. Thus, quantitative data was collected to study the effectiveness of CAI.

DATA ANALYSIS

The collected data were analyzed by using Nonparametric statistics. Statistical findings of pre-test and post-test data in terms of achievement scores were calculated and compared the effectiveness of an intervention through Wilcoxon Test between experimental and control group and Chi-square technique respectively.

FINDINGS OF THE STUDY

From the data analysis, it can be derived that teaching students of class IX English grammar by traditional method is not as effective as with the use of CAI. Teaching students by CAI with simultaneous discussion is more effective and presence of teacher is essential so that students can clear their doubts arising while learning.

As data was collected using purposive sampling, non-parametric statistics will be used for analysis of data. Wilcoxon test is used to measure whether there is a significant difference in the scores of pre-test and post-test of Students' Achievement.

Table - 1 Wilcoxon Test between Experimental and Control Group

	N	Mean	Std. Deviation	Z	Asymp. (2-tailed)
Control Group_Pre	58	29.03	8.50	-0.19	0.84
Control Group Post	58	28.83	8.03		
Experimental Group_1	66	26.67	6.40	-7.06	0.01
Experimental Group_	66	37.23	8.44		

Table-1 explains Wilcoxon test of responses from Narayan School and Jeevan Bharti School. Wilcoxon test was conducted to evaluate whether there is a significant effect of Computer Assisted Instruction (CAI) intervention on students who belongs to experimental group. It can be derived that there was a significant difference in experimental group, $z = -7.06$, $p < .01$ due to the implementation of CAI program and It can also be derived from the mean scores of pre-test of experimental group ($M = 26.67$) and post-test of experimental group ($M = 37.23$) that achievement of students increased, which can be interpreted that teaching through Computer Assisted Instruction(CAI) program makes significant effect on students.

The table also explain that there is not significant difference in control group, $z = 0.19$, $p > 0.01$. It can also be derived from the mean scores of pre-test of control group ($M = 29.03$) and post-test of control group ($M = 28.83$) that achievement of students decreased.

Table - 2 Rank Table

	N	Mean Rank	Sum of Ranks
Control Group	Negative Ranks	25 ^a	33.24
	Positive Ranks	33 ^b	26.67
	Ties	0 ^c	
	Total	58	
Experimental Group	Negative Ranks	0 ^d	0.00
	Positive Ranks	66 ^e	33.50
	Ties	0 ^f	
	Total	66	

Table-2 describes the comparison of responses of pre-test and post-test among both experimental and control group. In control group, 33 participants have higher achievement scores

before the intervention (Computer Assisted Instruction (CAI)), 25 students have higher achievement scores after the intervention and no students showed no change in their achievement scores. Experimental group, whom CAI program have been implemented, no students have high scores before the intervention, 66 students showed higher achievement scores after the intervention and no student showed no change in their achievement scores.

CONCLUSION

The results of this study indicate that class IX students learned English grammar equally well with the use of CAI. Computers have the potential to be useful tools to improve learning; however, it is the responsibility of the teachers to choose software that meets the needs of the students, to use it effectively, and to require its use. Educators can tap into this interest by using technology to deliver instruction and assess learning. Computer learning systems provide educators the opportunity to create lessons in a variety of alternative formats to the traditional lecture in order to address the different learning styles and preferences of students. And this supplement is also useful to the students whenever they are absent to the class during the content is taught. They can refer repeatedly until they understand thoroughly this facility is absent in the traditional method. Ultimately quality is essential in any mode of instruction. There are also limitations in preparing CAI person should know not only the content but also methods to prepare CAI.

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