EFFECTIVENESS OF COMPUTER ASSISTED INSTRUCTION ON ACHIEVEMENT IN ENGLISH OF SECONDARY SCHOOL STUDENTS

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Abstract

The purpose of the study is to find out the effectiveness of Computer Assisted Instruction programme on achievement in English. Hence, the researcher has decided to develop Computer Assisted Instruction Programme on English. The present study is an experimental study with criterion variable like achievement in English. The study involves pre-test and post-test design with treatment between Traditional method of teaching English and Computer Assisted Instruction Programme. Research evidenced indicates that the CAIP method is effective method for achievement of English. CAIP is an innovative approach to the teaching learning process. Thus, the study assumes its significance and relevance in the present context.

Introduction

Keeping in view the importance of English, a deserving place should be assigned to this language in our school curriculum. The language should be taught in parallel with each other. The ideas should be allowed to flow and language should be made compulsory to put the ideas in the link. This practice at early stage not only makes the language better, but also makes the effective thinking and creativity possible. Understanding and writing independently should be strictly taught, so that in the longer run development along with the language takes place. And the languages should be made compulsory in every professional and non- professional course. Prose, poetry, grammar, composition & conversation are the various aspects of teaching English. These aspects should be imparted for better achievement in English subject. Pupil should improve the skills like listening, speaking, reading and writing.

In the schools the students speak the language which is medium of instruction fluently. Overall, in today's school education the language is suffering just because of lack of teaching process in prose, poetry, grammar, composition and conversation.

Now, computer is no more a matter of luxury. It is widely accepted as means of communication process. Class room transaction is also one of the communication processes. Thus, education society is enjoying the advantage of IT, which is based on communication technology and computer technology. Getting computer hardware is not a problem but software: teaching – learning process is facing somewhat trouble. No doubt ready to use software are available in market but they don't satisfy the needs of teaching environment and system of our school education, particularly where medium of instruction is regional language. So our school education is not benefiting much from IT at present. Development of educational software is a prime need, which takes care of our learners' nature and level of learning abilities keeping in views the course content of the subjects. So teachers' should prepare the teaching learning material through CAIP. Some attention is given on language learning at the secondary school level. The present study proposed to contribute effectiveness of CAIP on achievement in English.

Rational of the study

The Research is significant because its findings and conclusions may encourage the teachers to adopt computer-assisted instruction as an appropriate approach for instruction in regular classrooms; to induce the educational administrators and supervisors to promote computer-assisted instruction; and to provide a base for those interested in the educational development to plan and conduct further researches.

The research is significance because of in English method this type of research would not be done. In Science, Mathematics, History and Geography it was covered. But effectiveness of student's achievement in English was not covered. Therefore this research has significance. Again researches on Communicative approach, effectiveness between Traditional method and Direct method were covered. But effectiveness of student's achievement in English was not covered. Therefore this research has significance.

The researcher found the gaps of study after reviewing related studies in the area of present problem. The hypotheses of the study were framed looking at the scenario of classroom conditions in schools. Hence the researcher has undertaken this study and

developed the Computer Assisted Instruction programme for IX standard students of Marathi Medium.

The present study is an experimental study with the criterion variables like effectiveness of Computer Assisted Instruction Programme and Achievement of English. The study involves pre-test and post-test design. Research evidenced indicates that the CAIP can improve students' performance; therefore the focus of study is on development of CAIP for teaching English. CAI is an innovative approach to the teaching learning process.

Review of Related Literature

There are many studies conducted on CAI. **The studies conducted by Locatis and Atkinson(1984)** describe Computer assisted instruction as a mode of instruction that involves students interaction with the computer. Typically, students acess program presented in segments, with each segment including information and questions or problems for student's response. The correctness of each response is indicated immediately and remedial or new information is presented. Sometimes students also have the option to requesting help or skipping ahead. This tutorial form of CAI is most typical, there are other forms such as drill and practice exercise, simulations and games. The studies of Dange J.K.(2006), Yakub Mohammed (2001), Vidyanathan and Rangrajan (2001) concluded that Computer Assisted Instruction is effective than traditional method of teaching in different subjects.

Review of Related Research

Educational technology brings super power in the field of Education. It is very precious of research used by various universities of India. Here the researcher is going to give the history of past research works conducted in India.

Makvana , N. Vimal (2010)

Development of Computer Assisted Language Learning Package for Instruction of 'Parts of Speech' of English Language. Ph.D. (Edn.) Saurashtra University, Rajkot.

Objectives:

1. To develop a computer assisted language learning package to teach parts of speech of English language.

2. To test the effectiveness of the computer assisted language learning package in terms of achievement scores obtained by the students on the teacher made achievement test.

3. To know the opinions of students towards learning through computer assisted language learning package.

Methodology

The present research was experimental in nature. It was designs as 'Two equal groups only post test design'. The experimental group received instruction through traditional classroom teaching. Pre-test was not the part of the study. The data were collected by administering the post test on both groups on same days.

The researcher designed and developed CALL package on units of parts of speech. Teacher made unit tests on units of parts of speech were constructed and adapted an opinionnaire for measuring the variables under study. The population of the present study comprised of students studying English at P.T.C. colleges situated in Gujarat state. This was an experimental study wherein the students of the sample were to be taught for a specific period of time in the actual classroom situation. The independent variable was method of instruction. The CALL package developed for examining their effectiveness needed a college having computer laboratory and LCD projector with screen respectively. Shri Adhyapan Mandir, Rajpipla was selected for conducting the experiments. Students studying in second year P.T.C. were the subjects of the study. In the experiment stage two equivalent groups of students were formed. The groups were made equivalent by utilizing their previous achievements of English. Previous achievement was collected from student's first year P.T.C. examination of English from the school records.Groups so formed were confirmed by teachers rating of students in each group. The two groups were subjected to the treatment phase randomly. One of this group was treated as Experimental group and other was treated as control group.

Independent t-test was selected as statistical technique because two groups means were to be compared for its significance. Prior to the treatment phase these two groups were equalized on the basis of their past achievement. Allotment of treatment was randomized. Opinions towards learning through CALL package were collected as frequencies on nominal scale. So non-parametric chi-square technique was used. Analysis was done through SPSS package. Data sheets were prepared by data editor.

Findings:

At the end of experimentation following findings emerged out:

1. CALL package was found effective raising student's achievement in unit 'Parts of Speech' of English grammar.

It is true that no technology can replace a good teacher. So far as teaching English grammar is concerned, there is a shortage of good teacher especially in remote areas. The CALL package can meet the need and the demand of a good teacher.

2. The CALL package was effective in evoking positive reactions towards the use of them in learning English grammar especially 'Parts of Speech'.

They liked to learn subjects by this method. According to them this method was easy to understand, easy to remember, more interesting, and stress less. Concentration increases, discipline is maintained and self-learning is possible through this method.

Chiniwar, Prabha S. (Edutracks, September-2013, Vol.13 No.1, pg. no.37-41)

Effectiveness of CAI among the VIII standard students in relation to the attitude towards English Grammar and their achievement in English grammar.

Objectives:

1. To compare the effectiveness of CAI and conventional method of teaching grammar in terms of changing the attitude of students towards English grammar.

2. To compare the effectiveness of CAI and conventional method of teaching grammar in terms of enhancing achievement of students in English grammar.

Methodology:

The researcher constructed tools like Attitude towards English grammar and Achievement (Pre-test & post-test) in English Grammar. The sample consisted of 100 students from two different schools (50 each) studying in VIII standard. One school was identified as Experimental group and the other school as control group.

The Experimental treatment involved the teaching of a selected content of English Grammar, 'Parts of Speech' and 'Punctuations' involving definitions, illustrations and enough exercises comprehensively covering the whole selected content for students of VIII standard.

A total of 9 concepts of English grammar were taught by using Computer-Assisted Instruction Design to the Experimental group students. And the same 9 concepts of English Grammar were taught by using Conventional Method to the controlled group students.

In pursuance of the objectives of the present study Mean, standard deviation and 't' test were used as statistical techniques to analyze and interpret the data collected.

Findings:

1. There is no significant difference between conventional and Experimental groups with regard to attitude towards English grammar- before treatment.

2. There is significant difference between conventional and Experimental groups with regard to attitude towards English grammar- after treatment.

3. There is significant difference between conventional and Experimental groups with regard to attitude towards English grammar- gain scores.

4. There is no significant difference between Conventional and Experimental groups with respect to improvement in Achievement in English grammar- before treatment.

5. There is a significant difference between Conventional and Experimental groups with respect to improvement in achievement in English grammar- after treatment.

6. There is significant difference between conventional and Experimental groups with respect to improvement in Achievement in English grammar- gain scores.

The following conclusions are drawn:

1. Teaching English grammar through CAI is more effective in changing the attitude of students towards English Grammar.

2. Teaching English grammar through CAI is more effective in terms of enhancing achievement of students in English Grammar.

All the above studies clearly reveal the importance of Computer Assisted Instruction programme.

Objectives of present study

The major objectives of the study are:

1. To develop the Computer Assisted Instruction Programme for standard IX in English .

2. To Prepare the Achievement test of IX Standard in English.

3. To study the effectiveness of Computer Assisted Instruction Programme for standard IX teaching of English.

4. To study the achievement of IX standard students in English through Traditional method of teaching.

5. To study the achievement of IX standard students in English through Computer Assisted Instruction Programme.

6. To compare the achievement of students in English through Traditional method of teaching and Computer Assisted Instruction Programme.

7. To study the difference between Male group and Female group school students achievement in English through Computer Assisted Instruction Programme.

8. To study the difference between Rural and Urban school students achievement in English through Computer Assisted Instruction Programme.

Hypotheses

To achieve the objectives of the study following null hypotheses will be test:

1. There is no significant difference between the mean score of achievement of school student in English through Computer Assisted Instruction Programme and Traditional method of teaching.

2. There is no significant difference between mean scores of Pre-test and Post-test of school students achievement in English through Traditional method of teaching.

3. There is no significant difference between mean scores of Pre-test and Post-test of school students achievement in English through Computer Assisted Instruction Programme.

4. There is no significant difference between the mean scores of Post-test of Teaching through Computer Assisted Instruction Programme on male group and female group of secondary school students achievement in English.

5. There is no significant difference between the mean scores of Post-test of Teaching through Computer Assisted Instruction Programme on Rural and Urban secondary school students' achievement in English.

Variables

The researcher considered two major types of variables.

A) Independent Variable :   1. Computer Assisted Instruction Programme

                                        2. Traditional Method of Teaching

B) Dependent variables: 1. Achievement in English

Sampling

The sample consisted of 200 students from four different schools (50 each) studying in IX standard. The researcher has collected the data from Rural and Urban areas of Bhusawal Taluka. Following four school selected for data collection.

1.Biyani Public School, Bhusawal- Marathi Medium-Urban Area – Teaching through CAI Programme.

2.Pundlik Ganpat Barhate Madhyamik Vidyalaya, Bhusawal-Marathi medium- Urban Area – Traditional Method of Teaching.

3. Rajaram Dhondu Maharaj Madhyamik Vidyalaya, Kurha Panache- Marathi Medium-Rural Area – Teaching through CAI Programme.

4. Sarvodaya Highschool, Kinhi- Marathi Medium-Rural Area – Traditional Method of Teaching**.**

Table-1 : Details of the sample based on Rural & Urban Area

Groups	N	Rural	Urban
Control	100	50	50
Experimental	100	50	50
Total	200	100	100

Table-2 : Details of the sample based on Gender

Groups	N	Male	Female
Control	100	50	50
Experimental	100	50	50
Total	200	100	100

Construction of Tools

Due to non-availability of appropriate Computer Assisted Instruction Programme and Achievement test researcher developed the CAI programme and prepared achievement test. Researcher approved the CAI programme and achievement test from subject experts.

Procedure used in the Experiment

A. **Pre-Measurement:** Pre-test (Achievement test) applied before the treatment.

B. **Treatment:** The Experimental treatment involved the teaching of selected content of English subject like prose, poetry, grammar, composition and conversation for the students of IX standard. The same content taught to students by using CAIP and TMT to Experimental group and Control group.

C. **Post-Measurement:** Immediately after the completion of treatment, the Experimental group and control group were Post-tested. The post-test items were from the selected content of English subject incorporated in IX standard textbook.

Statistical Technique

In pursuance of the objectives of the present study, the following statistical techniques were used to analyze and interpreted the data collected.

1. Mean 2. Standard Deviation and   3. 't' test

Analysis and Interpretation

To test the hypothesis - Mean, S.D. and t values were calculated and results are presented in the table.

1. *There is no significance difference between the mean scores of achievement of school student in English through Computer Assisted Instruction Programme and Traditional Method of Teaching.*

Group	N	Mean	SD	df	't' sta.	't' critical	Significance level
Control (TMT)	100	30.91	8.494912	198	2.7171	2.576	Significance At 0.01 level
Experimental (CAIP)	100	40.47	8.747242			1.96	Significance At 0.05 level

Calculated't' value 2.7171 which is exceed than the table't' value of both the level of significance. So null hypothesis mayrejected that there is no significant difference between mean scores of achievement of school student in English through Computer Assisted Instruction Programme and Traditional Method of Teaching.

2.*There is no significance difference between mean scores of pre-test and post-test of school students achievement in English through Traditional Method of Teaching*

Group	N	Mean	SD	df	't' sta.	't' critical	Significance level
Pre-Test (TMT)	100	18.54	6.45172	198	4.59	2.576	Significance At 0.01 level
Post-test (TMT)	100	30.91	8.494912			1.96	Significance At 0.05 level

Calculated't' value 4.59 which is exceed than the table't' value of both the level of significance. So null hypothesis may rejected that there is no significant difference between mean scores of pre-test and post-test of school students achievement in English through Traditional Method of Teaching.

3.*There is no significance difference between mean scores of pre-test and post-test of school students achievement in English through Computer Assisted Instruction Programme.*

Group	N	Mean	SD	df	't' sta.	't' critical	Significance level
Pre-Test (CAIP)	100	20.17	6.504163			2.576	Not Significance at 0.01 level
				198	2.1401		
Post-test CAIP)	100	40.47	8.747242			1.96	Not Significance at 0.05 level

Calculated 't' value 2.1401 which is less than the table 't' value of both the level of significance. So null hypothesis is accepted that there is no significant difference between mean scores of pre-test and post-test of school students achievement in English through Computer Assisted Instruction Programme.

4.There is no significant difference between the mean scores of Post-test of Teaching through Computer Assisted Instruction Programme on male group and female group of secondary school students achievement in English.

Group	N	Mean	SD	df	't' sta.	't' critical	Significance level
Post-Test (Male) CAIP	50	38.14286	10.22864			2.617	Not significance at 0.01 level
				98	0.002352		
Post-test (Female) CAIP	50	43.28571	5.299371			1.98	Not significance at 0.05 level

Calculated 't' value 0.002352 which is less than the table 't' value of both the level of significance. So null hypothesis is accepted that there is no significant difference between the mean scores of Post-test of Teaching through Computer Assisted Instruction Programme on male group and female group of secondary school students achievement in English.

5.There is no significant difference between the mean scores of Post-test of Teaching through Computer Assisted Instruction Programme on Rural and Urban secondary school students achievement in English.

Group	N	Mean	SD	df	't' sta.	't' critical	Significance level at 0.01
Post-Test (Rural) CAIP	50	39.62	7.230576			2.617	Not significance at 0.01 level
				98	0.333712		
Post-test (Urban) CAIP	50	41.32	10.04163			1.98	Not significance at 0.05 level

Calculated 't' value 0.333712which is less than the table 't' value of both the level of significance. So null hypothesis is accepted that there is no significant difference between the mean scores of Post-test of Teaching through Computer Assisted Instruction Programme on Rural and Urban secondary school students achievement in English.

Major Findings

1.There is significance difference between achievement of school student in English through Computer Assisted Instruction Programme and Traditional Method of Teaching after the treatment.

2. There is significant difference between mean scores of pre-test and post-test of school student achievement in English through Traditional Method of Teaching

3. There is no significant difference between mean scores of pre-test and post-test of school student achievement in English through Computer Assisted Instruction Programme.

4.There is no significant difference between the Teaching through Computer Assisted Instruction Programme on male group and female group of secondary school students achievement in English after the treatment.

5. There is no significant difference between the Teaching through Computer Assisted Instruction Programme on Rural and Urban secondary school students achievement in English after the treatment.

Conclusions

1.Use of Computer Assisted Instructional program was found to be effectivein bringing about learning.

2. Computer Assisted Instructional programme was found to be more effective for learning of subject English as compared to Traditional Method of teaching.

3. Students were eager to learn and participate actively while learning through CAI than the Traditional method of teaching.

4.Students active participation in learning results in better achievement.

5. Computer Assisted Instruction proved to be better mode of instruction than Traditional Method of teaching to teach the content of English grammar.

6.CAI is a powerful, useful and interesting mode of instruction.

Educational Implications

The findings of present study revealed that teaching English through Computer Assisted Instruction programme is more effective than traditional method of teaching. Keeping these things in view the following implications are suggested for students, teachers, schools, Government of Maharashtra and Educationists & scholars.

For students

1. Student should take interest in acquiring the basic computer skills.

2. Student should learn skills like computer Assisted Instruction programme and computer based learning and get the pleasure as it is important for enhancing the understanding level and self-confidence.

3. Student should not only learn English subject but also enhance their school performance.

4. Student should take interest in in e-learning and enrich the subject content beyond the textbook syllabus.

For Teachers

1.English tearchers should equip themselves with computer skills, particularly internet, webtool, powerpoint presentation to enrich the subject knowledge.

2. English teachers should attend workshops, group discussions, conferences, orientation courses related to development.

3. English teacher should himself / herself try to prepare Computer Assisted Instruction Programme to enhance their teaching performance.

4. English teachers should not only depend upon lecture method and other traditional ways of teaching but should use CAI programme for teaching.

5. English teachers should motivate student for learning English and other subjects through CAIP, PowerPoint presentation available in schools and also those which can be freely downloaded from internet.

For Schools

1.The school should prepare the setting of LCD projector and Educational Technology Labs.

2. The schools should trained the teachers & students about the technological use in English.

3. Schools should send the teachers in seminars, workshops and conferences for enrichment of the knowledge.

4. With the help of teachers schools should be prepare CAI programme for teaching learning process.

For Government of Maharashtra

1.State government can make sincere efforts in organizing a series of workshops to develop CAIP in all the school subjects for teaching through computers. For this purpose, it can also have a memorandum of understanding with software developing companies to produce their materials in large scale.

2. School textbook must be revised keeping in view the norms of the Computer Assisted Instruction Programme. The entire content in textbook must be revised to suit the modern technology based on the principles of programmed learning.

For Educationists & Scholars

1.Studies could be undertaken by the educationists and scholars to examine the effectiveness of teaching Mathematics, Scienceand Social Sciences subjects through CAI as the present study revealed the positive results in teaching English through CAIP.

2. As the present study revealed positive results in bringing achievement of students in English through CAIP, the same type of efforts may be made in teaching Marathi, Hindi and Urdu subjects.

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