

**EFFECTIVENESS OF COMPUTER ASSISTED  
INSTRUCTION TO TEACH SANSKRIT GRAMMAR  
AT B.Ed LEVEL**

An

Abstract of Dissertation

Submitted to the Sardar Patel University,

Vallabh Vidyanagar

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**Master of Philosophy (M.phil)**

**Guide**

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## **1. Introduction**

This is testimonial to the fact that this classical language is not far removed from technology. Hence it was hardly surprising when German scientists declared that Sanskrit with its rich vocabulary of more than two thousand root words with trice as many multiple derivative words using suffixes and prefixes, could be the best language for computer.

So far as teachers training are concerned it seems no attempts are made. Some attention is given o language learning at the school level. The present study proposed to contribute some knowledge in Sanskrit grammar learning through Computer Assisted Instruction.

The main purpose of computer Assisted Instruction is to deliver the content of the course through computer and relative instruction Endeavour through the help of computer application. In this respect several software program with different specification might be used to deliver the Subject matter. It can deal the problem of quality in education more effectively. Possibly the greatest strength of the computer Assisted Instruction is that enables high degree of learner participation to be built in to the instructional process.

## **2. Title of the Study**

The statement of the problem is stated as

**“Effectiveness of Computer Assisted Instruction to teach Sanskrit Grammar at B.Ed Level”**

The Statement of the problem selected by the researcher indicates the clear concept of the study problem. This experimental study was designed to check effectiveness of learning through CAI programme in Sanskrit. Development of computer Assisted Instructional programme was also a pre-requisite part of the study.

Most of the commissions have stressed the urgent need of imparting the quality of education. In order to make teaching exciting, motivating and challenging, a well prepared suitable module is necessary taking all the steps seriously.

As in other languages, many of the problems before Sanskrit educator today is particularly with regard to the need for teaching method that stimulates interest in Sanskrit language and its scientific wisdom. This should answer a few other questions like:

How does a Sanskrit teacher teach the various subjects at present? What are the methods they use? Are they using definite method? Are their classes motivating the students? How can they attract the attention of the students? Is there any difference in the approach if teaching Sanskrit grammar? What are the steps to be followed in teaching grammar? How can the classes be integrated with better practices, tools and technology?

These and many such questions can be answered only through a scientific and systematic study. The researcher has selected this topic because she has studied Sanskrit till P G Level. She has come across many students who have faced various problems in learning Sanskrit Grammar. Students who are introvert cannot share their doubts with the teachers and this creates hindrance to understand the next concept. CAI is a technique in which students learn as per their understanding .CAI is beneficial for all students i.e. average learner, slow learner and for the gifted students also. So the investigator has selected the present problem in this background.

More over a few studies are carried out in the subject of Sanskrit grammar at B.Ed level. An incompetent teacher often leave student in such a drastic condition that they ever lived in dilemma. So to find out the effectiveness of teaching Sanskrit grammar with the help of computer this research work is under taken.

### **3. Operationalization of Terms**

Each word has meaning, but in study it is necessary to mention meaning of every word. Due to which meaning become clear and understanding become easier.

Thus the researcher decided to give classical and operational definition of the terms used in the title of the study.

CAI in Sanskrit: CAI in Sanskrit in the present study refers to the Computer Assisted Instructional Programme developed by the researcher using various softwares to teach Sanskrit grammar to student-teachers.

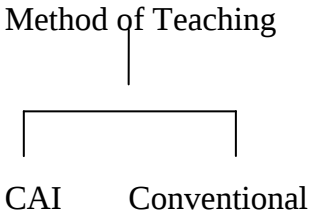
Effectiveness of CAI: Here, Effectiveness of CAI has been studied in terms of the significance of difference of mean achievement score of the student-teachers obtained on the post –test only and their reaction on the developed CAI.

#### **4. Objectives**

Objectives of the present study are considered as follows:

1. To test student-teachers' knowledge of Sanskrit grammar.
2. To develop CAI programme to teach selected topics of Sanskrit grammar.
3. To implement the programme on both control and experimental group
4. To Study the difference in mean scores of pre-test and post-test of control group.
5. To Study the difference in mean scores of pre-test and post-test of experimental group.
6. To study the effectiveness of the CAI teaching programme in terms of achievement of the student-teachers of experimental group.
7. To study the difference of mean scores of control and experimental group in post-test.
8. To study the reaction of Student-teachers towards learning through CAI Programme by reaction scale.

## 5. Variables

| Type of Variable     | Level of Variable                                                                                                                                                                          |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Independent variable | Method of Teaching<br> <pre>graph TD; A[Method of Teaching] --&gt; B[CAI]; A --&gt; C[Conventional]</pre> |
| Dependent            | -Achievement of Student-teachers<br><br>-Reaction of Student-teachers                                                                                                                      |

## 6. Hypotheses

A Hypothesis is shrewd guess of inference or superposition or tentative generalization as to the existence of some facts, condition or relationship relative to some phenomenon which serve to explain such facts as already are known to exist in a given area of study and to guide the search for new truth.

In this experimental type of study, the researcher has formulated following null hypotheses.

H<sub>01</sub>: There will be no significant difference between mean achievement scores of control group and experimental group in Pre –test.

H<sub>02</sub>: There will be no significant difference between mean achievement scores of control group and experimental group in post –test.

H<sub>03</sub>: There will be no significant difference between mean achievement scores of pre –test and post –test of control group.

H<sub>04</sub>: There will be no significant difference between mean achievement scores of pre –test and post –test of experimental group.

H<sub>05</sub>: There will be no significant difference between the observed frequencies and expected frequencies in the reaction scale.

## **7. Review of Related Literature**

Review of related literature is one of the significant aspects of research. It enables the researcher to get acquainted with the work done in the concerned area. It also helps to explore the needs of research in unknown and unexplored areas. It develops insights into the methodological aspects of the research.

Moreover, the researcher comes to know about the delimitations of the previous studies. In other words, review of related literatures work as a lighthouse for the researchers. Hence, the researcher has made a humble attempt to present the review of related literature in two parts.

(1) Review of related studies conducted in India.

(2) Review of related studies conducted Abroad.

All studies which are reviewed are related to experimental research in different Subjects. So selection of tools depends upon variables. In these entire studies sample was divided into two equal groups. Some researcher considered previous year result of students as criteria for equal groups. In some studies pre-test, post-test and ANCOVA were used for analysis. But in present study t-test and correlation were used for same. In the abroad studies variables are few but in present study four independent variables and one dependent variable were taken to check its effects. Also main and interaction effects of these variables were tested. In present the study graphical analysis also considered as part of analysis.

In this study the CAI programme is developed in such a way that it can be implemented in normal classroom. CAI contained topics from one branches of Sanskrit Grammar. CAI included Concepts & examples of different topics of

Sanskrit Grammar of B.Ed. The review of the related literature helped investigator to select variable and a research method pertaining to the problem in hand.

## 8. Research Type

The present research is experimental in nature .It follows two group pre-test, post –test experimental design. The research is mainly quantitative in nature but the researcher also took reaction scale the Student-teachers which were also quantitatively analyzed. The researcher used t-test to calculate the difference of means of the group in pre-test and post-test and chi square test to check the reaction of student-teachers towards programme.

## 9. Design of the Study

The experimental study was conducted utilizing two group pre-test and post-test design.

### Two group Pre-Test Post Test design

| Group              | Pre-Test        | Treatment           | Post-Test       |
|--------------------|-----------------|---------------------|-----------------|
| Control Group      | T <sub>1C</sub> | Conventional Method | T <sub>2C</sub> |
| Experimental Group | T <sub>1E</sub> | CAI Programme       | T <sub>2E</sub> |

It can be seen that the experimental group received instruction through CAI Programme and the control group received instruction through traditional class room teaching. The data were collected by administering post-test (T2) on both the groups. After the treatment phase the scores of the students obtained on the post-test were analysed by employing t-test as statistical technique. Effectiveness of the CAI Programme was worked out by testing the null hypotheses

## 10. Population

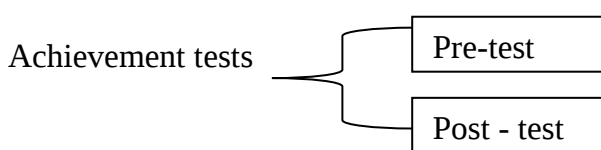
The population of the study comprised of the Gujarati-Sanskrit method student - teachers of B.Ed level of Anand district of the academic year 2014-15.

## 11. Sample and Sampling Technique

The sample is the working unit of the research. It is a group of subjects that the researcher works and interacts with. The sample of the present study comprised 30 Student-teachers of Gujarati-Sanskrit method of Shri I. J. Patel B.Ed College, Mogari and 30 Student-teachers of Gujarati-Sanskrit method of Shri P.K.Inamdar College. The sampling technique was convenient sampling as the researcher selected the B.Ed colleges in which she got permission to conduct her experiment. The data was collected from the Student-teachers of B.Ed by using the following tools.

## 12. Data Collection Tools

Tools help the researcher to interact with the subject and get their responses in the present study; the researcher used two major tools. An achievement tests for collecting the data (pre-test and post-test) A reaction scale to find the reactions of the Student-teachers about the CAI to teach Sanskrit grammar.



Achievement test was developed by the researcher served as pre test, post test.

(2) Reaction scale.

## 13. Procedure for Construction of Tools

The Procedure followed for preparing each tools is mentioned below.

### **13.1. Preparation and Validation of Achievement Test**

The researcher constructed achievement test on the basis of the content undertaken. The researcher also took care of mental level of the Student-teachers. The researcher took the help of experts and subject teachers in constructing the tool. The pre-test was administrated before the completion of teaching and post-test was administrated after the completion of teaching on both the group.

- **Preparation and validation of pre-test and post test**

The researcher prepared the test and got it modified and corrected by the guide. The researcher incorporated the changes and got it checked by the experts in the field of Sanskrit language. She modified the test according to their suggestions.

### **13.2. Preparation and Validation of Reaction Scale**

In order to triangulate the data the researcher prepared the reaction scale. The researcher prepared the reaction scale to get the Student-teachers reaction about the programme. The researcher wanted to check the effectiveness of the programme and how did the programme help the student-teachers to develop their Sanskrit grammar competencies. Researcher has taken 32 statements and asked the Student-teachers to answer in 5 point scale (Likerts Scale).The researcher took help of experts and guide and then modified according to their suggestions. The purpose of the reaction scale was to know whether the Student-teachers found teaching through CAI interesting and motivation.

## **14. Data Collection**

The present study is based on development and implementation of CAI Programme on teaching Sanskrit grammar at B.Ed level. this required preparation of CAI Programme by the researcher. After preparing the CAI Programme it was implemented and then its effectiveness was measured. In the third stage reaction of the students was taken.

For data collection, the researcher took the permission from two B.Ed Colleges titled P.K.Inamdar College of education and Shri I. J. Pated B.Ed College. One college was taken as control group and one as an Experimental group.

## **15. Techniques of Data Analysis**

Analysis of data means studying the organized material in order to discover inherent facts. The data are studied from as many angles as possible to explore the new facts. The present data was analyzed quantitatively as the researcher used statistical techniques like mean, S.D. and t-test to analyze it. The Reaction Scale of the students was analyzed through chi- square.

## **16. Findings**

### **16.1. Findings on the Bases of Achievement Test**

- Experimental group academically achieved more than the control group. They were able to perform better than the control group Student-teachers.
- Value of 't' calculated on the basis of the mean and S.D. of both achievement tests indicated that the teaching through CAI Programme was successful in enhancing Sanskrit grammar. Analysis of reaction scale also proved that Student-teachers liked the programme.

### **16.2. Findings on the Basis of Reaction Scale**

- The CAI Programme presented through the computer provided knowledge. Most of the Student-teachers considered that the content presentation was interesting. They believed that simulation took them to the depth of the topic and provided real like experience.
- The Student-teachers believed that the pictures, charts, language used in the CAI Programme, text presented for each topic were appropriate. The question at the end of topics did not break the continuity of the topic.
- Majority of the Student-teachers suggested that they would like to learn other topics of the Sanskrit also with this kind of CAI. This type of

learning program should be used in other subjects also. Presentation through such technique reduces the burden of content.

- The students believed that content was presented at proper pace, explanation given for every topic is proper. They believed that the learning through Computer is really a captivating experience.
- Majority of the students found that learning through CAI Programme motivated them to know more about the subject. This type of Programme helped them to develop their interest in learning Sanskrit Grammar.

## **17. Educational Implications**

From the findings of the present study following educational implications could be drawn.

1. To bring novelty and to provide visual experiences, CAI Programme can be effective and useful in class-room teaching.
2. CAI Programme is found useful to increase the students' concentration and interest. To satisfy the need of different types of learners especially slow learners, the teacher should use this method.
3. The government can arrange training programmes for the teachers to develop such programmes.
4. The teacher should be inspired to develop and to use Computer Assisted Instruction Programmes.
5. The CAI Programme is very useful for self-learning, drilling, revision and diagnostic and remedial teaching in class-room.

## **18. Suggestions for Future Research**

The following suggestions may be useful for the future researchers in their research.

1. There is a chance to develop the CAI in different topics in Sanskrit.

2. There should be a chance to develop CAI programme for teaching other subjects.
3. One can develop programme to see effectiveness of it on mental health and adjustment.
4. One can do a comparative study of CAI programme and CAL programme.
5. One can develop programme to see effectiveness of it on interest of students.
6. There should be a chance to develop CAI by different multimedia programme.

These and many other area of CAI could be studied in order to make education progressive and make students excellent, qualitative and productive. Thus there can be further studies on the following topics.

1. CAI programme to teach Sanskrit poetry.
2. CAI programme to teach Sanskrit prose.
3. CAI programme to teach Sanskrit Writing.
4. CAI programme to teach Sanskrit Reading.
5. CAI programme to teach Sanskrit Drama.
6. CAI programme to teach other components of Grammar.

## **19. Conclusion**

This research can contribute a wider and novel field in the methodology of school subject. Investigator's aim was to construct CAI and study an effectiveness of it in Sanskrit subject. The researcher hopes that this study will be very useful to develop CAI material in different subjects and which direct effect on their study, achievement and educational objectives.

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