EFFECT OF COMPUTER BASED INSTRUCTION IN TEACHING UNDER GRADUATE STUDENTS

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ABSTRACT

In the twenty-first century, academics face numerous challenges. Today's teachers are under tremendous pressure to develop their pupils' intellectual capacities through innovative teaching strategies. The purpose of the study was to ascertain whether computer-based instruction was beneficial to undergraduate students. Creating lesson plans using Computer Based Instruction packages and assessing how computer-based instruction affects students' conceptual knowledge are the goals of the project. The experimental approach was used in the investigation. Fifty sample students participated in the study. It was decided to test the difference between the pre-test and post-test results. The experimental and control groups, where education was provided with and without computer-based instruction, showed a substantial difference in conceptual understanding ratings, according to the study.

***Keywords**: - Computer based Instruction, Experimental approach, Conventional Method of Teaching, Investigation.*

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CONCEPTUAL FRAMEWORK:

Education is the most effective weapon when it comes to a nation's social and economic advancement. Second, it is accurate to say that education is essential to an individual's growth and advancement. To promote student learning, the instructor uses a variety of instructional strategies. In the classroom, the teacher deals with a diverse group of students who have differing abilities to understand the subject matter. For any teacher, working with students who are so different from one another can be a daunting challenge. Around the world, schools employ a range of innovative pedagogical

strategies to meet the requirements of students with special needs. Many innovative teaching techniques have been tried in different settings to teach a variety of courses within this framework. This branch of educational technology, sometimes known as "Instructional Technology," is concerned with innovative teaching strategies.

COMPUTER IN EDUCATION

In today's fast-paced world, we use computers extensively in every part of our lives. Whether you're booking plane tickets or getting information about college applications, all of the information is easily accessible with a few finger touches. Information has been transformed by the computer and is now available to everyone. The primary advantages of computers in the classroom are as follows:

- Information storage
- Quick data processing
- Better information display
- Classroom use of audio-visual aids
- Internet access

A major component of the modern educational system is computer-based instruction. Students find that using the Internet is more convenient than looking up information in thick books. Learning has evolved beyond merely using textbooks as a guide. The internet is a far bigger and more accessible information repository. Computers make it easier to store information that has been obtained than handwritten notes do.

COMPUTER-BASED INSTRUCTION

As modern India develops, lifestyle changes are also altering how people obtain knowledge. Students choose to browse the internet, watch YouTube videos, or attend lectures instead of going to libraries or book fairs to find the texts they want. This shifting tendency is making it clear that classrooms need to adopt a more contemporary and cutting-edge approach to computer-based instruction. In addition to making learning engaging and enjoyable, **Computer Based Instruction**also makes learning quick, concentrated, and durable. As a result, educational institutions are setting up the necessary infrastructure to give pupils computer-based learning more successfully, although this is mostly available to the wealthy and well-connected. Modern mobile

technology have also revolutionized teaching and learning approaches, making it nearly hard to hold students' interest using conventional techniques. Our educational system's fundamental lack of contemporary technology has led to a knowledge gap both within and outside of the classroom. Students nowadays have easy access to knowledge through the internet and other media, yet it cannot be reliable or understandable. As a result, our young students constantly require an effective mentor or teacher. The learning process would be more joyful, enjoyable, and steady if a teacher used these teaching aids to communicate knowledge or information about a subject.

The term "computer-based instruction" (CBI) refers to the use of computers in teaching methods and learning exercises. CBI allows students to reflect on their learning experience and grow through self-evaluation; it allows children to learn more efficiently by providing them with timely feedback and reinforcement; and it creates an engaging, game-like environment. Relevant research in the field indicates that when CBI is more successful in lowering below-average student performance, students' accomplishments increase.

Adeyami (2012) defined CBI as an instructional technique in which the instructional Content is presented to the learners with the help of a computer which also controls the Learning path of learners. In other words, it is a technique best suited for self learning in Which there is an interaction between the students and the CBI material

Laleye,(2019). Define CBI or CBI in the teaching and learning process has shifted learning from teacher-centered (where the teacher is seen as a key source of information and transmitter of knowledge) to learner-centered (where the teacher is seen as a facilitator rather than a dispenser of knowledge.

Computer based instructional material helps teachers and students to develop information and problem solving skills, to be active in the teaching and learning process and to find alternative solutions of the problems, which further give rise to positive changes in the lives of people. As a result of the advancement in computer technology, it is essential to use computer technology to find the solution of educational problems.

REVIEW OF RELATED LITERATURE:

The review of related literature is one of the important steps in the research. It is very necessary for making the research effective. A few studies on the efficacy of Computer Based Instruction are given below:

Kadhiravan and Suresh (2003) investigated the effect of various instructional strategies, including the lecture method, computer-based instruction as an individualized instructional strategy, and Computer Based Instructionwith peer interaction on student achievement in physics. The sample of the study consisted of 105 eleventh standard students from three different schools of Coimbatore. The latter one was found to be most effective instructional strategy in enhancing the achievement as well as retention of learners in physics.

Dr.Nilgün Tosun, Nurşen Suçsuz, Birol Yiğit (2006) Investigate the effects of the computer-assisted and computer-based instructional methods on students achievement at computer classes and on their attitudes towards using computers. According to the study results, the students receiving **Computer Based Instruction**during their computer classes showed higher success on the practice test than the students taking classes with computer-based instructional methods. Additionally, a considerable difference has not been seen in the attitude of the students towards using computers from the other standpoints of the study.

Mutya and Ramas (2022) investigated the effectiveness of Computer-Based Instruction (CBI) in teaching Biology to 7th graders of a secondary night school in Cebu City, Philippines. Two groups of students were subjected to a quasi-experimental design with a pre-test, post-test, and control group, of which one was exposed to CBI and the other to the conventional lecture method (CLM). An Instructional Materials Motivation Survey (IMMS) was used to assess its motivational characteristics. Data gathered were analyzed using descriptive statistics, frequency count and percentage, mean and standard deviation, t-test. Findings revealed that both groups had fairly satisfactory performance in the pre-test, which implies that the students had low knowledge on the topic. The study also found that both groups had significantly increased their performances from the pre-tests to the post-tests, implying the essence of CLM and CBI use.

A number of studies showed that the computer based instructional program had positive relation with information and communication technology. It was also found that there is significant difference in the use of information and communication technology. It was also discovered that computer based instructional program have significant impact on the teaching skills.

OBJECTIVES OF THE STUDY:

The researcher formulated the following objectives:

- To study the effect of Computer based Instruction on under graduate students.
- To study the effect of Computer based Instruction and Conventional Method of Teaching under graduate students' immediate performance in learning.

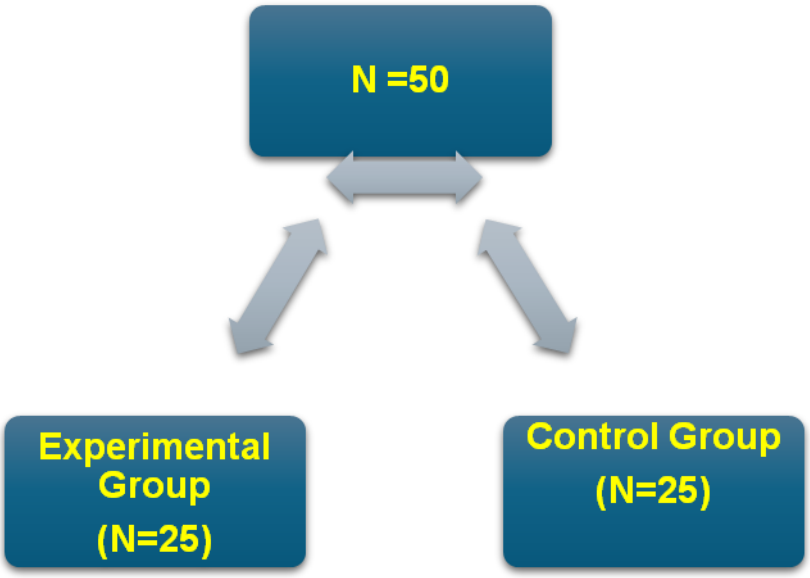
HYPOTHESES OF THE STUDY:

The following hypotheses were formulated by the researcher keeping in view the nature of the objectives of the study:

- There will be no significant difference in the Pre-Test achievement score between the students following the Computer based Instruction and the Conventional Method of Teaching
- There will be no significant difference in the Post-Test immediate achievement score between the students following the Computer based Instruction and the Conventional Method of Teaching

RESEARCH DESIGN:

The research is true-experimental in nature because the random assignment of subjects to experimental and control treatments provides the equivalence of the control and experimental groups. The experimental groups were instructed with Computer based Instruction, and the control group was instructed with the conventional method of teaching (CTM). The design is illustrated graphically below:



Sample and Sampling Technique:

The colleges for the experiment were selected based on feasibility and willingness to cooperate on the part of the authorities. Thus, purposive sampling was employed to choose the students from colleges for experimental and control groups. The control and experimental groups comprised 25 students from two colleges of SBS Nagar and Hoshiarpur.

Tools Used:

- Lesson Plans prepared by the researcher on CBI were used.
- The Achievement Test developed by the researcher was employed for collecting data for both Pre-tests, Post-Tests.

Experiment Description: The researcher followed these procedures for the experimental study:

Step 1: In the first stage of the investigation, the Achievement Test was used to obtain Pre-Test Scores from both groups. These ratings showed participants' knowledge and attitudes .

Step 2: Implementing Lesson Plan: The Experimental Group received ten nos. of CBI-based lesson plans one by one. The Conventional Method of Teaching was delivered in the Control Group.

- **Step 3**: Post-Test Score: After lesson plans were presented, the Achievement Test was given to the Experimental and Control Groups to determine the Post-Test Score.

Results and Discussion:

The samples were compared by testing the significance of the difference between the mean pre-test scores of experimental and control groups using t-tests. The results are presented in the following tables:

Analysis of Hypothesis-1

There will be no significant difference in the Pre-Test achievement score between the students following the Computer based Instruction and the Conventional Method of Teaching

Table 2: Showing t-value of mean pre-test scores of CMT and CBI groups

Groups	N	Mean	SD	t-value	Level of significance
CBI Group	25	20.4	6.0	0.36	Not significant at 0.05 level of significance
CMT Group	25	19.8	5.2		

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Table 2 reveals that the mean pre-test scores of the CMT and CBI groups are 19.8and 20.4, and their SDs are 5.2 and 6.0, respectively. When the t-test was applied to compare the mean pre-test scores of both groups, the t-value was found to be 0.36, which is non-significant at a 0.05 level of significance. This shows no significant difference exists between the mean pre-test scores of the control and experimental groups. Hence, the null hypothesis, **H_o1,** is accepted.

Analysis of Hypothesis-2

There will be no significant difference in the Post-Test immediate achievement score between the students following the Computer Based Instruction(CBI) and the Conventional Method of Teaching (CMT)

Table 3: Showing the t-value of mean post-test scores of CMT and CBI groups

Groups	N	Mean	SD	t-value	Level of significance
CBI Group	25	37.2	6.9	4.66	Significant at 0.05 level of significance
CMT Group	25	29.6	4.0		

Table- 3 reveals that the mean post-test scores of the CMT and CBI groups are 29.6 and 37.2, and their respective SDs are 4.0 and 6.9. When the t-test was applied to compare the mean post-test scores of both groups, the t-value was found to be 4.66, which is significant at the .05 level of significance, favouring the Computer Based Instruction (CBI). It can, thus, be inferred that the experimental group is more encouraged and enthusiastic in learning, applying and correlating the concepts simultaneously, resulting in their better achievement who were taught with Computer Based Instruction (CBI). Hence, the null hypothesis, **H_o2,** is rejected and may be reframed as there is a significant difference in achievement in the mean post-test scores of CBI and CMT groups of under graduate students.

FINDINGS OF THE STUDY:

- No significant difference is found in achievement in the mean pre-test scores of under graduate students taught with Computer Based Instruction(CBI) and the Conventional Method of Teaching (CMT)
- A significant difference is found in achievement in the mean post-test scores of under graduate students taught with Computer Based Instruction(CBI) and the conventional Method of Teaching (CMT). The under graduate students taught with Computer Based Instruction(CBI) outperformed those taught to under graduate students with the Conventional Method of Teaching .

Thus the mean pre-test scores of undergraduate students taught using computer-based instruction (CBI) and the conventional method of teaching (CMT) do not significantly differ in terms of achievement.

The mean post-test scores of undergraduate students taught using computer-based instruction (CBI) and the traditional method of teaching (CMT) show a substantial difference in achievement. Undergraduate students who received instruction using

Computer Based Instruction (CBI) outperformed those who received instruction using the Conventional Method of Teaching (CMT).

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