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**Effect of digital classroom learning environment on
academic achievement of university students**

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Abstract

The present study is an experimental one and conducted in Bathinda district of Punjab. The investigator has taken 60 university students from central university of Punjab by using simple random sampling technique. For conducting experiment the investigator has used two group randomized pre-test and post-test design. For collection of data the investigator has used an achievement constructed and standardized by the investigator and t-test has also used for analysis and interpretation data. The result of the study reveals that digitalization of education and fully digital classroom learning environment is better to teach the university students rather than traditional classroom learning environment. It also improves the academic achievement level of the university students.

Keywords: Digital classroom learning environment, academic achievement

1. Introduction

Digital education means digital learning. It is a type of learning that is supported by digital technology or by instructional practice that makes effective use of digital technology. Digital learning occurs across all learning areas and domains. Digital education gives win-win opportunities for all, at one side School, colleges and other institution finds the rapid rise in enrolments and added revenue because of digital education and on other side students views this as a flexible and alternate option allowing them to study as per their convenient time and pace. Teachers and professors too find it convenient to prepare their teaching plans aided by digital technology. Teaching and learning becomes a smoother experience as it includes animations and audio-visual effects. Over the last few years digital education in India. The traditional education system was based on the concept of 'knowledge transfer'-the age old guru shishya parampara-which established a clear teacher taught relationship. However, the digital media and the internet has ushered in a democracy of knowledge where education has become a collaborative, self-driven enterprise. Today there are tools available to transform learning from an academic exercise to an engaging experience in imaginative and experiential learning.

1.1 Literature Review

Jinal Jani and Girish Tere (2015) ^[2]. Digital India programme introduced by government of India is important for the development of digital education in the country. Digital India drive is a project initiated by Government of India for creation of digital empowered society across the country. It will help in mobilizing the capability of information technology across government departments and helps in delivering the different governments programs and services. Digital India will help in creating job, providing high speed internet and digital locker system and so forth. Digital India has three important components namely digital infrastructures creation, digital delivering services and resources and digital education. Himakshi Goswami (2016) ^[3]. The study highlighted the different opportunities and

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challenges of digital India programme in India. Digital India programme introduced by government of India will help in transforming country into a digitally empowered economy. This will help government of India to integrate the Government Departments with the people of India. The main purpose of this programme is to reduce the paper work and help in providing different Government services electronically to citizens. It describes the different opportunities of the programme for the people of the country. India is having different languages, culture, and customs, food habits, laws and traditions. The purpose of digital India programme is to integrate whole country digitally but languages would be the main challenges in the implementation of such programme.

1.2 Objectives of study

- To study the difference in the effect of digital class room learning environment with high academic achievement university students.
- To study the difference in the effect of digital class room learning environment with low academic achievement university students.

1.3 Hypotheses

- There exists a significant difference between the academic achievement of high achievers who got and who did not get instructions in smart class room learning environment according to their pre-test and post-test.
- There exists a significant difference between the academic achievement of low achievers who got and who did not get instructions in smart class room learning environment according to their pre-test and post-test.

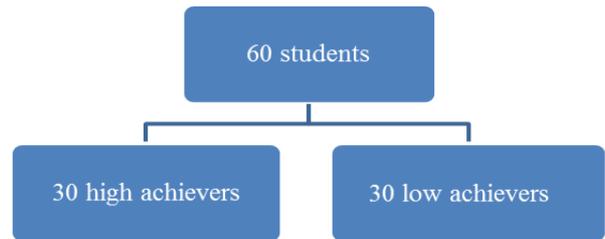
2. Method and Design of the Study

The present study was experimental in nature. After studying the review of related literature and considering the objectives of the study, two groups randomized matched pre-test and post-test was to determine the effect of digital classroom learning environment on academic achievement of university students.

2.1 Sampling

All items in the field of inquiry constitute a universe or population. The selected respondents from the population which is technically called a sample and the selection process is called sampling. The investigator has taken 60

university students as a sample. The classifications of the students as sample are given below:



2.2 Tools used

For collect data the investigator has used an achievement test constructed by himself.

2.3 Construction of achievement test

Following steps were followed to make achievement test:

- Planning of the test:** The construction of tests were carried out by consideration of limitation under which the tests were developed. The expert opinions were taken for the construction of the tests. The items of both tests were prepared in English language and covered the topic “periodic classification of the elements”. 50 questions were planned to conduct the test. Students were asked to complete this in 50 minutes.
- Validity of the test:** To final out what the test measures, it was decided to determine its face validity. For this, the expert’s opinion had been considered.

2.4 Statistical technique used

The collected data were analyzed to find out the initial difference if any, between the pre-test scores of the groups using t-test. After that, to determine the effect of teaching through both methods and to find out the extent of use of both methods by teachers, the scores were again subjected to t-test analysis.

3. Result Analysis and Main Findings

3.1 Results pertaining to the difference in the effect of digital classroom learning environment on academic achievement of university high achievers

To find out the difference in the effect of digital classroom learning environment on academic achievement of university high achievers, t-value was calculated and result is presented in Table 1.

Table 1: Comparison of high achievers students on pre-test and post-test.

Group	Method of Instruction	N	Mean	SD	df	SEd	T-test
Experimental Group	Digital Classroom Learning Environment	30	30.10	5.12	58	1.25	3.28
Control Group	Traditional Classroom learning Environment	30	43.2	4.77			

Level of significance 0.05=1.67, Level of significance 0.01=2.39

The Table no. 1 depicts that the calculated t-ratio of high achievers who got and who did not get instructions in digital class room learning environment according to their pre-test and post- test is 3.28 which is found to be significant at both levels. Therefore, it can be interpreted that there exists a significant difference in the effect of teaching through digital class on academic achievement of high achievers. Thus, the proposed hypotheses were accepted.

3.2 Results pertaining to the difference in effect of digital classroom learning environment on academic achievement of low achievers

In order to find out the difference in the effect of digital classroom learning environment on academic achievement of university low achievers, t-ratio was calculated and result is presented Table 2.

Table 2 depicts that the calculated t-ratio of low achievers who got and who did not get instructions in digital class

room learning environment according to their pre-test and post-test is 4.69 which is found to be significant at both levels.

Therefore, it can be interpreted that there exists a significant difference in the effect of teaching through digital class on academic achievement of low achievers. Thus, the proposed hypotheses were accepted.

Table 2: Comparison of low achievers students on pre-test and post-test.

Group	Method of Instruction	N	Mean	SD	df	SEd	T-test
Experimental Group	Digital Classroom Learning Environment	30	30.10	5.12	58	0.93	4.69
Control Group	Traditional Classroom learning Environment	30	43.2	4.77			

Level of significance 0.05=1.67, Level of significance 0.01=2.39

4. Main Finding and Conclusion

On the basis of analysis and interpretation of data, the following conclusion can be drawn.

There exists a significant difference in the effect of digital class room learning environment on academic achievement of high achievers of university students. The results shows that the students taught through digital class have scored better academic achievement than students taught through traditional method. The reasons of performing well by students taught through digital class may be:

- Digital class learning helped to develop cognitive dimension.
- Reinforcement given to all students on every improvement.
- Organization of the corrective activities
- Formative tests conducted to find out the progress.
- Supplementary material provided to students.

There exists a significant difference in the difference of effect of digital classroom learning environment on academic achievement of low achievers of university students. The results shows that the students who are low achievers have also scored better academic achievement taught through digital class than taught through traditional method. The reasons of performing well by high achievers may be:

- Motivation and Reinforcement given to all students on every improvement. Because smart class created much interest than traditional method
- Organization of the corrective activities.
- Formative tests conducted to find out the progress.
- Creation of enjoyable environment in class.

5. Suggestions

The researcher by virtue of his experience in conducting this study, would like to put forward the following suggestions:

- Sample size can enlarged to more concrete results.
- A sample study can be carried on primary level, senior secondary level, college level and university level students.
- Similar study can be analyzed by different statistical techniques for verifying the results.
- Comparison can be made between boys and girls.
- The effectiveness of the methods can be seen by giving a longer duration of teaching.

6. Recommendations

Based on the finding and conclusions of the study the following recommendations are put forward.

- Digital class room learning help to increase the learning abilities.

- Digital class may use as a supplementary learning tool to teaching low IQ level students and high IQ level students.
- This strategy helps the learner to move at his own pace as it helps the learners to provide individual instruction.

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