

# Effect of Classroom Environment on the Academic Achievement of Secondary School Students in the Subject of Pakistan Studies at Secondary Level in Rawalpindi District, Pakistan

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## Abstract

The study was carried out to investigate the effect of classroom environment on the academic achievement of students in the subject of Pakistan studies in Rawalpindi district, Pakistan. All the secondary school students were constituted the population of the study. The study was experimental that is why pre-test and posttest design was used. The study was delimited to 10<sup>th</sup> Grade students and sample students were divided into two groups i.e., control group and experimental group. To examine the academic achievement of students, achievement test was developed. Data was collected through pretest and posttest techniques. Raw data was organized, tabulated, analyzed and interpreted applying descriptive statistics i.e., mean, standard deviation and inferential statistics i.e., independent sample t-test through Statistical Packages for Social Sciences (SPSS). The findings revealed that a well-managed and vibrant classroom environment has a positive effect on the academic achievement of students in the subject of Pakistan studies at secondary level. Based on findings, it was recommended that an effective, well-managed, vibrant and favourable classroom environment should be ensued for effective instructional process.

## 1. Introduction

Classroom management is regarded a core component of powerful and fruitful instructional process. Effective and inspiring classroom management starts with efficient and effective lesson planning and assists an educator to instruct and learners to learn. Learners achieve excellently in an encouraged and stimulated classroom environment and feel protected and contented. With students perspective, powerful and fruitful classroom management gives students chances to mingle while picking up interesting and stimulating content. From an educator perspective, compelling classroom management includes precautionary, discipline and intriguing education (Lang & Hebert, 1995). To make sure a positive classroom condition, it ought to be well-equipped with facilities. Classroom physical course of action gives students powerful learning and advances effective instructional process. Provision of physical facilities may be ensured because these are useful in enhancing the general school's performance (Suleman & Hussain, 2014).

Effective teaching and effective students learning have been a central focus of classroom environment in current educational situation. Since classroom environment of today is very not the same as the classroom from 10 years prior. The students and the issues are different yet numerous classrooms are still administered by the strategies utilized numerous years back. Classroom needs supportive learning environment that contributes to student's achievement and in the classroom disruptive behavior can be prevented. Classroom needs proper facilities that contribute to teaching and learning. According to Directorate of Staff Development DSD (2007) 41% classes from primary to higher secondary schools level are running without classrooms and 28% have complete boundary wall at same level. In addition to that, 49% students are without furniture and 36% teachers have no furniture in schools. In this situation, students sit on the ground under the sky or under the shady trees and teachers are unable to maintain the learning environment. So, the achievement of the students remains low and disruptive behavior maximize (Waseer, 2008).

Physical environment alludes to the room's physical qualities and characteristics. Physical environment of the classroom is a mixture of various items i.e., temperature, lighting, size of the room, ventilation, walls, floor, seats, mats, whiteboards, PCs and so on. Teachers and learners are viewed as the primary components of the classroom condition. Stimulating physical environment possess a critical constructive outcome on the productivity of any association and goes about as catalyst to give a clear approach to accomplish the organizational prearranged targets. But regrettably, in our classroom, physical condition is not helpful for better instructional process causing students' exhaustion and disappointment (Suleman & Hussain, 2014). The physical environment is planned to discourages the learning procedure in spite of the fact that researchers have explored a close relationship between the physical condition and the work an individual perform. It makes sense that a leaner desk in a horrendously warm and unventilated room attending a session on cryogenics will not pick up so much as he will learn in a cool, agreeable space. Shockingly, institutional infrastructures are intended to pull in individuals from outside yet they neglected to give a sheltered and agreeable internal environment for learners (Halstead, 1974).

Researches about classroom condition have uncovered that physical arrangement assumes a crucial part in instructional process. It may influence the achievement of instructors and learners (Savage, 1999; Stewart & Evans, 1997). The learning situation includes diverse items i.e., learners, educators and the physical condition (Lippman, 2010). Physical condition is basically characterized as the room's physical qualities. It alludes to the distinctive items i.e., lighting, room size, level of temperature, state of floor whether it is carpeted or only concreted and so forth ([www.enotes.com](http://www.enotes.com)). According to Fisher (2008), classroom physical environment alludes to the physical room where students and educator are the fundamental components comprising spatial components i.e., windows, walls, floor and other classroom types of elements i.e., desks, seats, carpets, counters, blackboards, easels, tack boards and PC hardware yet not restricted to these gadgets. Physical environment may influence learners' well-being and their capacity to pick up to certain degree. Learners who feel secured and contented are probably going to obtain more information when contrasted with the individuals who are unhappy and uncomfortable. Furthermore, the physical air can likewise influence the learners' morale. Negative classroom condition can debilitate the students causing them to be less ready to learn ([www.enotes.com](http://www.enotes.com)).

Physical environment assumes a fundamental part in routine activities making it favorable, fruitful and attainable. As indicated by Oni (1992) and Hallak (1990), physical facilities comprise a key variable in working of an association as they decide the incredible execution of any social association or system including education. Physical facilities are considered empowering elements that assume a key part in enhancing scholastic accomplishment in the educational system i.e., classrooms, school infrastructure, furniture, housing, libraries, research centers, entertaining types of tools, apparatuses etc. Moreover, their accessibility, pertinence and adequacy influence scholarly accomplishment distinctly. Conversely, poor school infrastructures and congested classrooms influence scholastic accomplishment adversely.

Jones & Jones (1995) reported that the learning environment is a critical determinant of whether learning can happen in any classroom. Successful interpersonal abilities are the establishment for good classroom administration. Minding interpersonal collaborations are basic in meeting such critical individual needs as wellbeing and security, belongingness, and self-regard. Smith (2003) explains that positive classroom learning situations are ones that boost learning for all learning and cultivate their improvement as all-encompassing creatures by considering scholarly, enthusiastic, social and physical development. A positive learning environment is thoughtful and responsive. It is created and balanced after some time with reason, with concentrate on the wanted result of guaranteeing that all learners have entry to world-class instruction. It is a place in which we comprehend and execute educational modules utilizing instructional procedures that address the issues of our learners and reflection on results illuminate future practices. This environment is reflected in well-managed classroom and it is expected to comprehend the classroom administration.

There are a few variables of classroom physical condition i.e. acoustic element, visual component, spatial element, thermal variable and time factor. Acoustic element is an essential element as we for the most part rely on oral communication in classroom. Noise level mostly relies on school design, classroom organization and teaching approaches employed in a lesson (Basit, 2005). Ineffective classroom acoustics may unfavorably influence educating condition for some learners. Constant noise may harm intellectual execution and working (Higgins et al., 2004). Visual component alludes to the nature of illumination in various classroom components. It is dictated by the level of characteristic and simulated light accessible in the classroom. It additionally alludes to the route through which the classroom condition is orchestrated i.e. visually intriguing, making a positive environment and any undesirable interruptions e.g. windows overlooking playgrounds etc. Thermal component alludes to the classroom's warming and ventilation and are for the most part out of the instructors' control as they are atmosphere factors. It assumes a principal part in making classroom climate positive and agreeable and consequently influences the behavior and execution. Spatial variable identifies with the space management and greatly affects behavior especially on communication. Time factor alludes to the measure of time a learner is involving in learning process i.e., the quantity of minutes the learner is effectively involving in educator directed lessons and exercises (Basit, 2005). In this manner, it is presumed that physical condition of classroom includes seating arrangement, furniture, classroom size and structure, instructional advancements, room warmer, roof fans, window ornaments, pantry, tools, ventilation, lighting and so on.

Proper planning of classroom environment plays a noteworthy part in creating a stimulating environment for instructional process and builds up an environment ideal and urging to learning. Physical setting of classroom altogether influences scholastic accomplishment of the learners. Physical facilities in classrooms ensures powerful and fruitful instructional process. Without these facilities, viable and productive instructional process is impractical. Learners get more knowledge from their instructors in well managed and encouraged classrooms and thusly they show excellent execution. Conversely, if learners feel painful in classroom then they will neglect to achieve much knowledge from their instructors (Suleman and Hussain, 2014). Lyons (2001) expressed that insufficient school facilities unfavorably affect educators' efficiency and performance. As a result, it adversely influences learners' accomplishment. MacAulay (1990) and Walker et al. (1995) expressed that a well-organized classroom may improve learners' scholastic and behavioral results. Haertel *et al.* (1981) noted that learners'

perception of classroom condition as a critical component that demonstrate a few parts of learners' results i.e., accomplishment, inspiration and fulfillment. Additionally, they noted that accomplishment in cognitive and affective learning outcomes were over and over related with classrooms condition, which were seen as possessing more prominent cohesiveness, fulfillment, goal oriented, organisation and less friction.

Classroom internal temperature and ventilation are vital elements influencing classroom learning condition. Classroom excessively cold or excessively hot adversely influences learners' achievement and attentiveness as they feel painful. As per Halstead (1974), it is by and large acknowledged that high temperature and moistness makes physiological and mental issues which assist weakness, apply much endeavors and causes to commit more errors and blunders. The classroom atmosphere may be mindfully overseen to give physical comfort as well as to support as a constructive component in the learning by invigorating mindfulness and attentiveness. To keep up such an atmosphere, the environment must be dealt with the same time cleanliness, controlled temperature, and humidity. Earthman (2004) expressed that warming and air quality are the principal components regarding instructive achievement of learners. Phillips (1992) noticed that illumination is a standout amongst the most vital classroom quality. He additionally expressed that visual condition can influence the capacity of learners to see visual stimuli and furthermore influence their psychological demeanor. Thusly their scholastic execution is influenced adversely. Culp (2006) noted that achievement may be guaranteed by utilizing visual presentations in classroom. As indicated by Winter Bottom & Wilkins (2009), there are various parts of lighting to be remembered while considering this environmental characteristic for classroom. Classroom illumination comprises of imperceptible light, enlightenment at a learner's desk, lighting from projection screens and windows. Unfitting illumination adversely influences scholarly accomplishment and develops discomfort and deterrent for learners in the classroom.

Effective furniture's arrangement plays a fundamental and significant role in classroom functionalities. Furniture is placed orderly with the expectation that learners may satisfy and they might be changed in accordance with the principal sources or diverse wellsprings of information e.g., the educator, instructional materials, although in the meantime possessing openness to different sources or the exercises e.g., work areas, PCs without making unsettling influence in the classroom (Nitsaisook & Anderson, 1989). Desk arrangement can influence learners' accomplishment and consideration (Higgins et al., 2005). A learner is fittingly placed in the classroom if he possess an unmistakable perspective of the teacher, is given appropriate writing work surface and a place for book stockpiling, is sensibly agreeable and is situated to the point that learners moving to and from neighboring seats will not bother him (Halstead, 1974). Patton et al. (2001) found that larger part (94%) of the K-3 instructors utilize a semicircle or cluster to arrange the work areas in their classrooms. The educators reacted that arrangement of work areas in cluster has a few focal points i.e., empowering cooperative learning, creating a feeling of class community and best utilization of the space. Effective desk arrangement provides chances to students to be actively involved in learning process and makes the chance to work supportively with their partners.

Instructional technology assumes an indispensable part in instructional process making it more effective, intriguing and productive. Accordingly, it is important to organize classroom instructional technology to ensure successful and favorable conditions for instructional process (Suleman & Hussain, 2014). Iqbal (2005) expressed that the course of action of classroom instructive facilities and spaces may be chosen for adapting rather educating. Besides, it should promise to encourage educator to ensure an environment for effective learning. Audio visual aids i.e., diagrams, maps, globes, charts, radio, mock up, interactive media, PCs, overhead projectors and web are the piece of classroom condition. In any case, these innovations are not being practiced in instructional programmes as were expected (Weiss, 2007) since the classroom infrastructure does not boost to integrate technology (Oliver & Lippman, 2007; Suleman et al., 2011; Weiss, 2007). In majority of the developing nations like in Pakistan, educational technologies are not used successfully for instructional process. There are a few reasons which are in charge of the inadmissible use of instructional materials. Inferior quality and less quantity of instructive technology given to schools is one reason. Besides, educators are not prepared appropriately for the successful usage of instructional technologies for instructional process (Suleman et al., 2011). Subsequently it is important to design the infrastructure of classrooms in such a way that technologies may be utilized successfully. Classrooms ought to be outfitted with present day technologies to promise great and helpful environment for instructional process. Instructor may be trained for the successful utilization of technologies as it is an essential part of classroom physical setting (Suleman & Hussain, 2014).

## **2. Significance of the Study**

The present paper is exceptionally significant to study the impacts of classroom environment on the academic achievement of secondary school students in the subject of Pakistan Studies. The discoveries of the study will get a precious disturbance in classroom setting to guarantee powerful instructional process. Besides, the findings of the study will be helpful for educators, planners, and policy makers since it will consider the effectiveness of classroom environment on the academic achievement in the subject of Pakistan Studies at secondary school level.

### **3. Objectives of the Study**

1. To examine the effect of classroom environment on the academic achievement of secondary school students in the subject of Pakistan studies.
2. To determine whether well-managed classroom environment is more effective than traditional classroom environment regarding student's achievement at secondary level.

### **4. Research Hypotheses**

As some of previous studies has shown that classroom environment has significant positive effects on learner's success (Masrur and Bibi, 1998; Weinstein, 2007). This situation compelled the researcher to design null hypotheses to check whether classroom environment has positive impact on student's achievement. So, the following null hypotheses were tested to achieve the research objectives:

1. There is no significant difference between the academic performance of control and experimental groups on Pre-Test.
2. There is no significant difference between the academic performance of control and experimental groups on post-test.
3. There is no significant difference between the academic performance of control and experimental groups on retention test.

### **5. Research Methodology**

#### **5.1 Population**

All the secondary school students in Rawalpindi District (Pakistan) were constituted the population of the study.

#### **5.2 Delimitations of the Study**

The study was delimited to 10<sup>th</sup> Grade students of Government Girls High School Iqbal road Rawalpindi, Punjab. Further, the study was delimited to the five units of Pakistan Studies for experiment. These units were;

#### **5.3 Sample and Sampling Technique**

The investigation was experimental and hence, simple random sampling technique was utilized for the extraction of sample. Fifty students of tenth class were picked as study sample. sample subjects were partitioned into two gatherings i.e., control and experimental groups and each group has 25 students in total.

#### **5.4 Research Design and Research Instrumentation**

Based on the nature of research study, "The Pretest Posttest Equal Groups Design" was found appropriate for the current study. Pretest posttest techniques were used as research instrument for data collection. The purpose of pre-test to make sure the equivalency of the academic achievement of control and experimental groups before treatment. After the treatment, the researchers prepared an achievement test as posttest and distributed among the students. After a week, the same posttest with minor changes in the sequence of the questions was administered as a retention test.

#### **5.5 Validity and Reliability**

Validity of the research tool was checked by experts which had a vast experiment in the relevant fields. Reliability was checked through test retest technique. For this purpose, the achievement test was distributed among 25 students which were not in sample students. Then again the same test was distributed among the same students after a week. Pearson's product moment correlation was applied on the achievement of the students in the both tests. The Pearson's coefficient was found 0.82 which confirms the reliability of the achievement test.

#### **5.6 Arrangement of Classroom Physical Environment for Experimentation**

It was very important to arrange the proper classroom with various facilities for experimental group. The researchers set two classrooms as per the requirement of the experiment. The classroom for experimental group was equipped with various facilities like desks, chairs, ventilation, overhead projector, charts, models, drinking water, lights, and chair for teacher and well painted walls. The room was large too. The room of control group was small as compared to experimental group and they have only tots, bench and blackboard.

#### **5.7 Data Collection and Analysis**

Data was collected through pre-test, posttest and retention test by the teachers. After collection of data, it was organized, tabulated, analyzed and interpreted by applying descriptive statistics i.e., mean, standard deviation and inferential statistics i.e., independent sample t-test through Statistical Packages for Stoical Sciences (SPSS).

## 6. Results and Data Interpretation

The study was aimed to examine the effects of classroom environment on the academic achievement of secondary school students in subject of Pakistan Studies. Experimental design was used for this study. Data was collected through achievement tests as pre-test, posttest and retention test. Data was analyzed through descriptive statistics i.e., mean, standard deviation and inferential statistics i.e., independent sample t-test. The whole statistical process is given as under:

**H<sub>01</sub>:**

*There is no significant difference between the academic performance of control and experimental groups on Pre-Test.*

**Table 1:**

**Significance of Difference Between the Mean Scores of Control and Experimental Groups on Pre-Test**

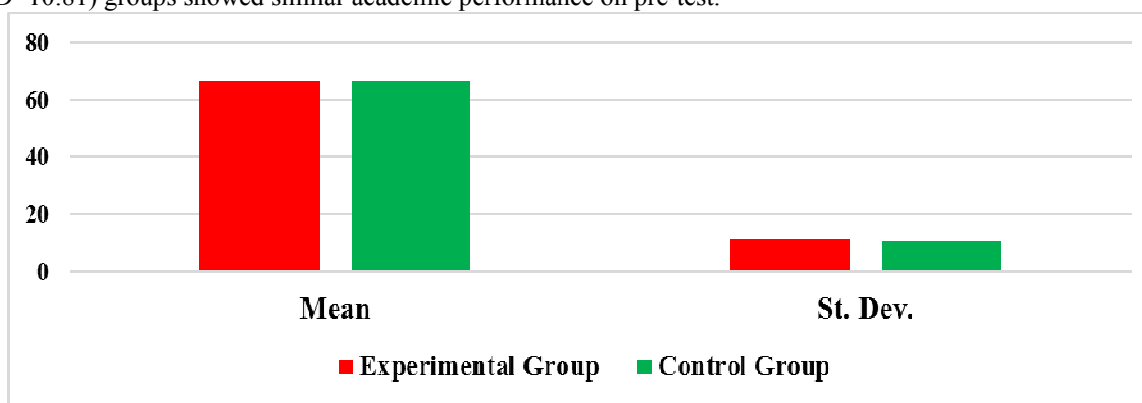
Groups	n	Mean	St. Dev.	SE <sub>d</sub>	t-value	p-value
Experimental	25	66.40	11.23			
Control	25	66.48	10.81	3.12	-0.026	0.980

**Non-Significant**

**df= 48**

**t value at 0.05 level=2.0106**

Table 1 illustrates that the calculated value of t was -0.026 which is non-significant ( $p > 0.05$ ) because it is less than the table value of t at 0.05 level. So, the null hypothesis was accepted. Furthermore, the descriptive analysis also exposed that the students of experimental (mean=66.40, SD=11.23) and control (mean=66.48, SD=10.81) groups showed similar academic performance on pre-test.



*Fig.1: Showing Mean and Standard Deviation of Control and Experimental Group on Pre-Test*

**H<sub>02</sub>:**

*There is no significant difference between the academic performance of control and experimental groups on post-test.*

**Table 02:**

**Significance of Difference between the Mean Scores of Control and Experimental Groups on Post-Test**

Groups	n	Mean	St. Dev.	SE <sub>d</sub>	t-value	p-value
Experimental	25	84.40	6.71			
Control	25	67.52	10.91	2.56	6.589	0.000

**\*Significant**

**df= 48**

**t value at 0.05 level=2.0106**

Table 2 depicts that the calculated value of t was 6.589 which is significant ( $p < 0.05$ ) because it is greater than the table value of t at 0.05 level. Hence, the null hypothesis was rejected. Moreover, the descriptive analysis also portrayed that the students of experimental group (mean=84.40, SD=6.71) showed much better performance as compared to the students of control group (mean=67.52, SD=10.91) on post-test. It means that a well-managed classroom has an optimistic result on students' academic achievement.

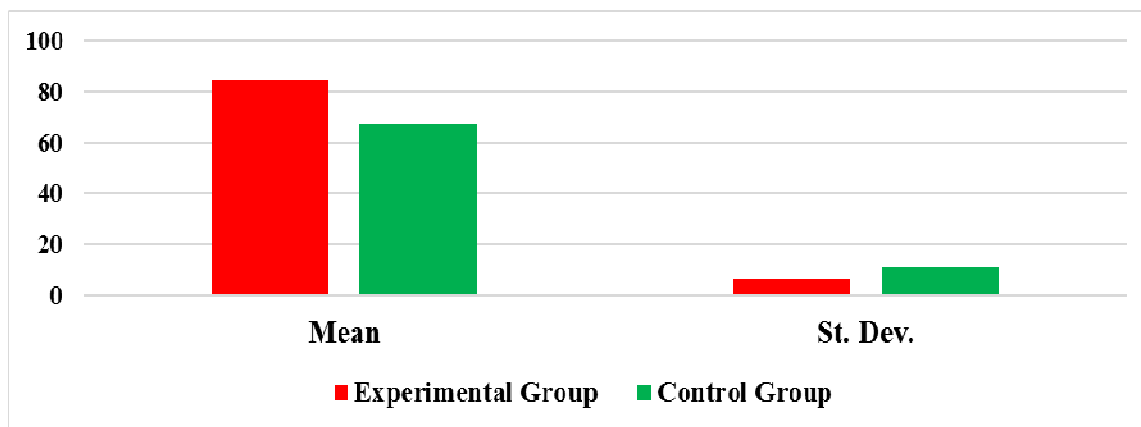


Fig. 2: Showing Mean and Standard Deviation of Control and Experimental Group on Post-Test

**H<sub>03</sub>:**

There is no significant difference between the academic performance of control and experimental groups on retention test.

**Table 03:**

**Significance of Difference between the Mean Scores of Control and Experimental Groups on Retention Test**

Groups	n	Mean	St. Dev.	SE <sub>d</sub>	t-value	p-value
Experimental	25	84.80	6.58			
Control	25	66.40	10.54	2.49	<b>7.404</b>	<b>0.000</b>

\*Significant

df= 48

t value at 0.05 level=2.0106

Table 3 depicts that the calculated value of t was 7.404 which is significant ( $p < 0.05$ ) because it is greater than the table value of t at 0.05 level. Hence, the null hypothesis was discarded. Additionally, the descriptive analysis also showed that the students of experimental group (mean=84.80, SD=6.58) showed much better performance as compared to the students of control group (mean=66.40, SD=10.54) on retention test. It means that students taught in well-managed classroom environment can retain for a longer time.

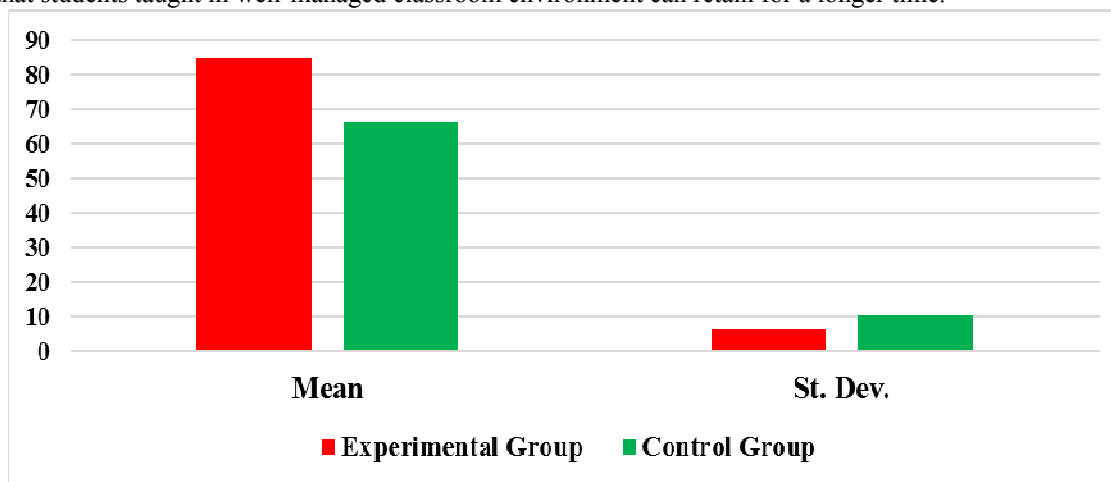


Fig. 3: Showing Mean and Standard Deviation of Control and Experimental Group on Retention Test

**7. Discussion**

The reason for the investigation was to explore the impacts of classroom physical environment on the academic accomplishment of secondary school students in subject of Pakistan Studies in Rawalpindi District. The investigation was experimental and that so, pretest-post-test Equivalent Group Design was utilized. Sample subjects were separated into two groups such as control and experimental groups on the premise of pre-test. Two distinct classrooms were organized for this experimental investigation. The classroom for experimental group was outfitted with different physical facilities i.e., proper arrangement of instructor table; desks and seats; painted walls; whiteboards; models; diagrams, overhead projector; appropriate illumination and ventilation; room radiators; regular power supply; drinking water; cupboard. Besides, the room was extensive too. Conversely, the classroom for control group was small and just contained chalkboard. Tots were organized rather than desks and seats. Both the groups were instructed through routine conventional approaches by two educators.

This investigation was proceeded for two months. On the completion of treatment, the investigators circulated a post-test promptly to look at the execution of the both groups. For this reason, the investigators alongside instructors made question paper in the five units which were covered during treatment for the both gatherings. After a week, the investigators again circulated the said post-test with slight change in the successions of the items as a retention test. Thusly information was gathered, sorted out, classified, investigated and compared.

To compare the achievement of experimental and control groups, the aftereffect of table 1 shows that there is no substantial contrast between the mean scores of experimental and control groups on pre-test. The computed t-value was seen to be 1.68 which is non-significant ( $p>0.05$ ) at 0.05. Accordingly, it explicitly shows that there is no critical distinction between the accomplishment of students of experimental group (mean=66.40, SD=11.23) and control group (mean=66.48, SD=10.81) was same on pre-test. So, the hypothesis " there is no significant difference between the performance of experimental and control group on pre-test " was acknowledged.

The results of table 2 demonstrates that there is huge contrast between the mean scores of experimental and control groups on post-test. The ascertained t-value was observed to be 35.58 which is significant ( $p<0.05$ ) at 0.05. Hence, it plainly demonstrates that there is noteworthy contrast between the execution of students of experimental and control groups on post-test. Henceforth the outcome uncovers that the students of experimental group (mean= 84.40, SD=6.71) demonstrated better execution when contrasted with the students of control group (mean=67.52, SD=10.91). Thusly, null hypothesis " there is no significant difference between the performance of experimental and control group on post-test " is rejected. MacAulay (1990) and Walker, Colvin, & Ramsey (1995) found that a very much organized classroom has a tendency to enhance learners' scholarly and behavioral results.

Similarly, the aftereffect of table 3 additionally portrays that there is remarkable distinction between the mean scores of experimental and control groups on retention test. The computed t-value was observed to be 58.58 which is significant ( $p<0.05$ ) at 0.05. In this manner, it obviously shows that there is noteworthy distinction between the execution of students of experimental and control group on retention test. Subsequently, the outcome uncovers that the experimental group (mean=84.80, SD=6.58) demonstrated better execution when contrasted with the control group (mean=66.40, SD=10.54). Hence, the null hypothesis there is no significant difference between the performance of experimental and control group on retention test" is rejected. The consequences of the investigation also uncovered that students of experimental group were found more intrigued, mindful and spurred during the treatment. Conversely, students of control group were found passive, tired and irritated.

## 8. Conclusions and Recommendations

Classroom environment has a positive effect on students' academic achievement. If we will provide all physical facilities like furniture, well painted walls, drinking water, electric supply, charts, model, overhead projector etc. then students will take much interest in studies and they will get high marks. So, classroom environment has a deep effect on students' academic achievement whether the students are intelligent or poor. So, it was recommended that an effective, well-managed, vibrant and favourable classroom environment should be ensued so that teaching learning process may take place successfully and effectively. Classroom should be equipped with basic advance facilities to simulate the teaching learning process.

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