

**A COMPARATIVE STUDY OF SCHOOLS WITH AND  
WITHOUT SMART CLASSROOMS IN RELATION TO  
ACHIEVEMENT MOTIVATION OF STUDENTS**

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**INVESTIGATOR**

**AMRITBIR KAUR\***

M.A., M.Phil. English, B.Ed.

M.Ed. (Appeared)

Malwa Central College of Education for Women,  
Civil Lines, Ludhiana

\*Address for Correspondence: 29-F, Gurdev Nagar, Ludhiana, Punjab – 141001  
Email: amritbir80@gmail.com

**Abstract:**

*The two terms, achievement and motivation have more than just a casual relationship. The concept of achievement motivation as developed by Mc Clelland suggests that it is the behaviour of an individual who strives to accomplish something. The role of teachers and teaching methods cannot be undermined. The methods have undergone a sea change since the olden times. A lot of innovative techniques have come to be used in the field of education in recent times. The concept of Smart Classrooms is the most recent one. The present paper focuses to make a comparative study of schools with and without Smart Classrooms in relation to achievement motivation of students. The Achievement Motivation tool prepared by Dr. D. Gopal Rao was used to collect the data. Data was collected from ten schools (five schools each with and without smart classrooms). Schools were selected through simple random sampling method. Purposive sampling was done to select the sample of students from class X from each school. Also the sample consisted of equal number of boys and girls, that is, 10 boys and 10 girls from each school. According to the results obtained, there exists a significant difference between the students of schools smart classrooms and those of schools without smart classrooms in terms of the achievement motivation level of the students.*

## **INTRODUCTION: INNOVATIONS IN EDUCATION**

Technology has come to stay in our lives. It is no longer restricted to being something that is invented in isolation in a laboratory. Instead, it has become a way of life. The influence exerted by technology has been so widespread that now it is almost impossible to name a field where it is not being put to use. In much the same vein, the field of education too could not remain isolated from it.

“The primary goal of a teacher education is to focus on pedagogy and not on technology. But the emergence of knowledge based society is changing the global economy and status of education”, says Kumari (2006)<sup>1</sup>. The technological innovations that are being applied in the field of education, especially in classroom situations, are serving as catalyst for the process of teaching and learning.

Talking of the concept of ‘innovation’ we should keep in mind that it is a comprehensive term and may, therefore, include a number of things. Luecke and Katz (2003)<sup>2</sup> wrote, “Innovation...is generally understood as the successful introduction of a new thing or method...Innovation is the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes or services.” The innovative applications in the field of education include the use of:

- ❖ Multimedia PCs
- ❖ Internet
- ❖ Computer Aided Instruction
- ❖ Powerpoint Presentation

The subject of present study is the recently emerging and still evolving concept of Smart Classrooms. Let us analyze the meaning of a smart classroom to comprehend its meaning, especially in the context of the present study.

## **CONCEPT OF SMART CLASSROOMS**

The concept of smart classrooms does not completely do away with the traditional method of teaching. Rather it seeks to club the use of technology with conventional methods. The resultant product is a harmonious blend of the modern and the traditional. For instance, the teacher while teaching a lesson on volcanoes will supplement the information given in books by showing a video of how a volcano erupts.

Smart classrooms are basically technologically and electronically enhanced classrooms. Bracciale and Marasa (2005)<sup>3</sup> are of the view, “There is not a set list of requirements for a smart classroom. Because there are an unlimited number of technological tools for education, there is no limit to what can be included in a smart classroom.” The technology included in a smart classroom may range from the simple ones like Video Cassette Recorder (VCR), Digital Video Disc (DVD) players, Computers, Overhead Projector (OHP) etc. or for that matter laptops and microphones to the highly sophisticated ones like touch-screen control systems, video conferencing and high definition LCD projectors. The equipments being used will vary from one institution to another according to the felt needs of the teachers as well as the students, and more importantly according to the amount of money the school management is ready to shell out for such infrastructure. Some schools don’t have each and every room equipped as a smart classroom but have instead allotted specific rooms, may be three or four, for this purpose. Or for that matter, there may be an audio-visual aid room with all the facilities available for teaching

through the use of technology. The frequency of usage will also differ in schools – for instance, whether used for four or five days a week. What is more important is the overall effect of such smart classrooms over the psyche of the students and to what extent does it motivate the students in achieving higher goals of life.

## **ACHIEVEMENT MOTIVATION**

It is often said that we can take a horse to a pond but cannot make it drink the water, that is, unless he himself is motivated to do so. In much the same way the students will not learn anything in the absence of motivation. It is the power of motivation basically that paves the way for learning. Many experiment conducted by psychologists from time to time have concluded that all learning is motivated.

In education motivation is considered to be the art of stimulating interest in the pupil where there has been no such interest. We can say that it may be regarded as something what compels, prompts and energises a person to behave in a particular direction to attain certain specific goals (Chauhan, 2007)<sup>4</sup>. Motivation may be defined as the complex of forces inspiring a person at work to intensify his willingness to use his maximum capabilities for the achievement of certain objectives. Motivation is what makes people do the things. Skinner (1952)<sup>5</sup> is of the opinion, “Motivation in school learning involves arousing, sustaining and directing desirable conduct.” Very aptly put American Football Coach, Lou Holtz, quoted by Fritz (2008)<sup>6</sup>, says, “Ability is what you're capable of doing. Motivation determines what you do. Attitude determines how well you do it.”

There are two basic factors involved. The first one relates to the individuality of a person. Each and every person has a unique personality which includes his likes and dislikes, opinions, emotional and attitude and his own personal level of motivation. The second factor is the dynamic character of human being. Life is a continuous process of adjustment to all the forces that play upon the individual. Atkinson and Birch (1978)<sup>7</sup> mentioned two fundamental ways in which motivation influences behavior. “It affects time spent in an activity and it affects the efficiency of performance of an activity”, they say.

Achievement motivation owes its birth to USA. In its psychological sense it is concerned with inculcation and stimulation of the learner’s interest in learning activities. In general, it refers to the behaviour of an individual who strives to accomplish something to do his best and to excel others and this involves competition with a particular standard of excellence of performance. This is the characteristic of achievement motivation, which distinguishes it from other motives.

The concept of achievement motivation was developed by Mc Clelland in 1951. Mc Clelland, Atkinson, Clark and Lowell made considerable studies in this field and concluded that a person becomes active and works strenuously only for achievement of some desired objective. According to Atkinson and Feather (1966)<sup>8</sup>, “Achievement motivation is conceived as a latest disposition which is manifested overt striving only when the individual perceives performance as instrumental to a sense of personal accomplishment.

Charms (1986)<sup>9</sup> talked of achievement motivation as disposition to strive for something and had satisfaction derived from success in competition with some standard of excellence. Achievement motivation has been defined by Heckhausen (1967)<sup>10</sup> as “the striving to increase and keeping, as high as possible, one’s own capability in all activities in which a standard of

excellence is thought to apply and where the execution of such activities can, therefore, either succeed or fail”.

Young (1950)<sup>11</sup> was of the view, “Each of the individual’s level of performance is determined by a combination of his abilities his level of aspiration; and habits of work that have proved adequate satisfy his current needs. Sorenson (1954)<sup>12</sup> expressed the view that when motivation is provided in the form of praise the achievement level of the students increases. He quotes studies to prove his point. Bolles (1967)<sup>13</sup> traces the history of motivation in his book ‘Theory of Motivation’ from the theological flavour of instinct of Locke and others before him, Hull’s theory of motivation, incentive theories of motivation etc.

## **OBJECTIVES**

- (a) To study the level of achievement motivation of the students of class X.
- (b) To compare the achievement motivation level of the students studying in schools with and without smart classrooms.

## **DELIMITATIONS OF THE STUDY**

1. The present study will be confined to the Class X students (Boys and Girls) studying in private schools affiliated to CBSE, New Delhi.
2. The study will be limited to the schools of Ludhiana District only.
3. A comparison will be made between the schools with and without smart classrooms in relation to the achievement motivation of the students of class tenth.

## **NEED AND IMPORTANCE**

We are living in an era of rapidly changing society. We may attribute this rapid pace of change to the ever evolving technology. So we need to follow a two-pronged approach – we need to educate people about the newly emerging technologies and at the same time we need to utilize the technology for our benefit for spreading awareness. Education is such a means that serves both ways. The field of imparting education has not remained isolated from the latest technologies like the use of computers, LCD projectors etc. They are being used in schools but very few have been adopted it till now.

The need of this study was felt as we need to know whether the use of technology like in a smart classroom has helped to motivate the students in a more positive and effective way or not. Hence, in the present study a comparison has been made between the students of schools using smart classrooms and those not using any of them. Such study has not been hitherto conducted on the school students.

## **REVIEW OF RELATED LITERATURE**

### **Studies related to use of technology**

Kaushal (1994)<sup>14</sup> studied for her Ph.D. work relative effectiveness of individualized and group instructional modules for teaching Biosciences to class IX students. GIM (Group Instructional Modules) were of three types: one having visual media (GIM-1), another having audio commentary (GIM-2) and the third with printed component (GIM-3). It was found that GIM-1 was most effective followed by GIM-3 and GIM-2. Mahajan (1994)<sup>15</sup> studied the effectiveness of Computer Assisted Instruction for teaching singular and plural at grade II and found CAI to be more effective than the traditional method. Joshi and Mahapatra (1995)<sup>16</sup>

undertook a study relating to effectiveness of a computer software. They found that students taught through software package significantly did better than those taught through conventional method. Rangaraj (1997)<sup>17</sup> studied the effectiveness of computer assisted instruction in teaching Physics. He found that Computer Aided Instruction as Support System (CAISS) was much better than CAI as individualized instruction. Retention was also higher when taught through CAISS. Sarma (1997)<sup>18</sup> used Programmed instruction to teach Sanskrit grammar (Karakas). He found that the programmed learning group obtained a higher mean. Their performance was better than the group taught through conventional method. The study reaffirmed the findings of studies done in the 60s on use and effectiveness of Programmed Learning Material. Kumar (2006)<sup>19</sup> in his comparative study of the effectiveness of communication technology for teaching information technology to secondary school students found out that the multimedia instructional system was the best instructional system out of the two systems, that is, audio-video instructional system and conventional instructional system.

### **Studies related to Achievement Motivation**

Ojha (1973)<sup>20</sup> in his study found that mother's love, father's permissiveness and love were positively related with Achievement Motivation whereas mother's rejection and protection; paternal rejection and protection were negatively related. Raghava (1986)<sup>21</sup> concluded that the Achievement Motivation development course improved the achievement of the pupils. Sinha (1986)<sup>22</sup> conducted a study and concluded that the high prejudiced males were tough-minded and had higher achievement motivation and high prejudiced females had higher achievement motivation. Koul and Badwal (1989)<sup>23</sup> conducted a study and found that the experimental and control groups on an average exhibited the same level of achievement motivation at the end of instruction as well as twenty days after completion of instruction. Reddy (1990)<sup>24</sup> in his study

found a direct correlation between Achievement Motivation and the effectiveness. Singh (1998)<sup>25</sup> found that students of high achievement motivation group were more creative than the students of low achievement motivation. Sardana (2006)<sup>26</sup> in her study of achievement in Mathematics in relation to study habits and achievement motivation concluded that the students scoring high on motivation level and those with regular study habits achieved higher in the subject of Mathematics.

## **HYPOTHESES**

- There exists significant difference between achievement motivation of boys of schools with and without smart classrooms.
- There exists significant difference between achievement motivation of girls of schools with and without smart classrooms.
- There exists significant difference between achievement motivation of students of schools with and without smart classrooms.

## **ANALYSIS AND INTERPRETATION OF DATA**

A research worker is not completely satisfied with collecting and classifying the data. One has to go through the facts more deeply to find the causes of the occurrence of phenomenon concerned with the problem. According to Thorndike (1904)<sup>27</sup>, “Whatever exists at all, exists in some amount. To know it thoroughly involve showing it in quantity as well as quality.”

Therefore, to get a more meaningful picture out of the raw information collected, analysis and interpretation of data is required. This analysis means studying tabulated material in order to determine the inherent facts or meanings. It involves breaking up of existing complex factors

into simple parts and putting them together in a new arrangement for the purpose of interpretation. The purpose of present research paper was to study the schools with and without smart classrooms in relation to the achievement motivation of the students.

Section I presents the study of motivation level of students of schools with and without smart classrooms. To give an accurate picture various statistical techniques like Mean, Median, Standard Deviation, Skewness, Kurtosis and T-ratio were employed, the results of which are given in Section II in the following pages.

## **SECTION I**

The scores of achievement motivation of girls and boys of schools with and without smart classrooms are classified on the basis of norms developed by Rao (1974)<sup>28</sup> as given in the manual.

The data in the **Table 1** revealed that out of 100 students (50 boys and 50 girls) studying in schools with Smart classrooms 76% fall in the category of high achievement motivation and 24% in the average category. A large percentage of students in school with smart classrooms were found to be highly motivated towards achievement. It may be because there is a usage of a larger number of senses in this technique than is there in case of traditional teaching. Moreover, the use of technology in the classroom serves as a technique of grabbing the attention of the students, which, in turn, helps to motivate the students to achieve greater heights. The results are also depicted through a Pie-chart as shown in **Fig. 1**

It was also revealed that out of 100 students (50 boys and 50 girls) studying in schools without Smart Classrooms, 52% fall in the category of high achievement motivation, 44% in the

average category and 4% in the Low achievement motivation category (**Table 2**). Results are also shown in **Fig. 2**. As was observed from the results, a lesser percentage of students fall in the category of high achievement motivation as compared to those studying in schools with smart classrooms. This may be due to the fact that only traditional method of teaching is followed. The absence of usage of technology means the involvement of lesser number of senses.

## SECTION II

In order to visualise the nature of score distribution of data collected numerical determinants of normality like Mean, Median, Standard Deviation Skewness and Kurtosis are worked out. Frequency Polygons and bargraphs are plotted to have a pictorial view of the data. To find out the differences in achievement motivation level of boys and girls in school with and without smart classrooms the technique of t-ratio is employed.

The data entered in **Table 3** shows the level of achievement motivation of boys studying in the schools with Smart Classrooms. The values of Mean and Median for boys studying in schools with Smart Classrooms obtained were 46.8 and 47.72 respectively. The value of Skewness was -0.42, which showed the distribution to be negatively skewed. The value of Kurtosis was found out to be 0.243, which is slightly less than the normal value of 0.263; thus, the curve is leptokurtic. The distortion is negligible and the data can be normally distributed. The frequency polygon of boys is shown in **Fig. 3** to give the pictorial view of the data. Smoothened frequency polygon is also drawn to get normal regular picture of the data.

From the results of Skewness and Kurtosis as given in **Table 4**, it was revealed that the level of achievement motivation scores of girls of schools with Smart Classrooms are positively

skewed and within acceptable limits (Skewness = 0.367). the value of Kurtosis is 0.255, which is slightly less than the normal value, so the curve is leptokurtic. It was also observed that the Mean and Median of the data does not show much departure (Mean = 50, Median = 49.413); hence, conforming to the normal shape as is evident from the **Fig. 4**, which shows the frequency polygon of girls to give the pictorial view of the data. Smoothened frequency polygon is also drawn to get normal regular picture of the data.

The data presented in **Table 5** presents the values of Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis of the data of boys studying in schools without Smart Classrooms. The values of Mean and Median are 43.3 and 43.5 respectively. The values of Skewness and Kurtosis are -0.11 and 0.302, which shows that the curve is negatively skewed and platykurtic; the distortion is negligible. Hence, the data can very well be taken to be normally distributed as is also evident from **fig. 5**, which shows the frequency polygon of data obtained from boys studying in schools without smart classroom to give the pictorial view of the data. Smoothened frequency polygon is also drawn to get normal regular picture of the data.

From the data given under **Table 6** it was observed that the values of Mean and Median for the scores of girls studying in schools without smart classrooms were 47.3 and 47.605 respectively. The value of Skewness was within acceptable limits, that is, -0.148; the curve is negatively skewed. The value of Kurtosis is also found to be close to the normal value of 0.263 -- it is 0.237. Being slightly less than the normal value, the present curve is leptokurtic. Hence, both the values of Skewness and Kurtosis are pointing to the fact the distribution of scores is very near to the normal as was evident from **Fig. 6**, which showed the frequency polygon of data

obtained from girls of schools without smart classroom. Smoothened frequency polygon was also drawn to get normal picture of the data.

From the results given in **Table 7** the values of Mean and Median were known to be 48.4 and 48.67 respectively. It was also observed that the value of Skewness is -0.136 and hence, the data was negatively skewed but the distortion was negligible (as was also seen in Fig. 2.5). The value of Kurtosis was 0.225, which is again near the normal value of 0.263 and hence the variation can be ignored. The near normalcy of the data was also observed from **Fig. 7**, which showed both the Original Frequency Polygon and the Smoothened Frequency Polygon of data obtained from students studying in schools with smart classroom.

From the results of Skewness and Kurtosis as entered in **Table 8**, it was revealed that the level of achievement motivation scores of students of schools without Smart Classrooms were negatively skewed and within acceptable limits (Skewness = -0.24). The value of Kurtosis was 0.253, which is slightly less than the normal value of 0.263, so the curve is leptokurtic. It was also observed that the Mean and Median of the data does not show much departure (Mean = 45.30, Median = 45.794); hence, conforming to the normal shape as was also evident from the **Fig. 8**, which shows the frequency polygon of data obtained from students studying in schools without smart classroom to give the pictorial view of the data. Smoothened frequency polygon was also drawn to get normal regular picture of the data.

### SECTION III

From the data under **Table 9** it was observed that mean value of the scores of achievement motivation of boys of schools with Smart Classrooms was 46.8, while the same for boys studying in schools without Smart Classrooms was 43.3. The calculated t-value was 5.216,

which is significant at .01 level of significance. Hence, we can conclude that the difference between the groups of boys of schools with and those of schools without smart classrooms is significant and that the group of boys of schools with smart classrooms is significantly superior than the other group. Thus, the first hypothesis that there exists significant difference between achievement motivation of boys of schools with and without smart classrooms is accepted.

From the data given in **Table 10** the mean value of the scores of achievement motivation of girls of schools with Smart Classrooms was found out to be 50.0, while this value for the girls studying in schools without Smart Classrooms was 47.3. The calculated t-value came out to be 3.33, which was again significant at .01 level of significance. Hence, we can conclude that the difference between the groups of girls of schools with and those of schools without smart classrooms is significant and that the group of girls of schools with smart classrooms is significantly superior than the other group. Thus, the second hypothesis that there exists significant difference between achievement motivation of girls of schools with and without smart classrooms is accepted.

The mean value of the scores of achievement motivation of girls of schools with Smart Classrooms is 50.0, while this value for the students studying in schools without Smart Classrooms is 47.3 (**Table 11**). The t-value is 3.63, which is significant at .01 level of significance. Hence, we can conclude that the difference between the groups of students of schools with and without smart classrooms is significant and that the group of students of schools with smart classrooms is significantly superior than the other group. This showed that the students studying in schools with smart classrooms were better motivated to achieve more and more in life. Thus, the third hypothesis that there exists significant difference between achievement motivation of students of schools with and without smart classrooms is accepted.

Mahajan (1994)<sup>15</sup> concluded that the Computer Assisted Instruction is more effective than the traditional method. Similarly, Rangaraj (1997)<sup>17</sup> also advocated, on the basis of his study, that retention was higher when taught through Computer Aided Instruction as Support System (CAISS).

Hence, it has been proved that the use of the technology of smart classroom in schools has a positive influence upon the level of achievement motivation of the students. The schools must try to integrate the innovations coming up in the field of education (like that of smart classroom) with the traditional teaching, as much as possible, to make the teaching learning process more effective.

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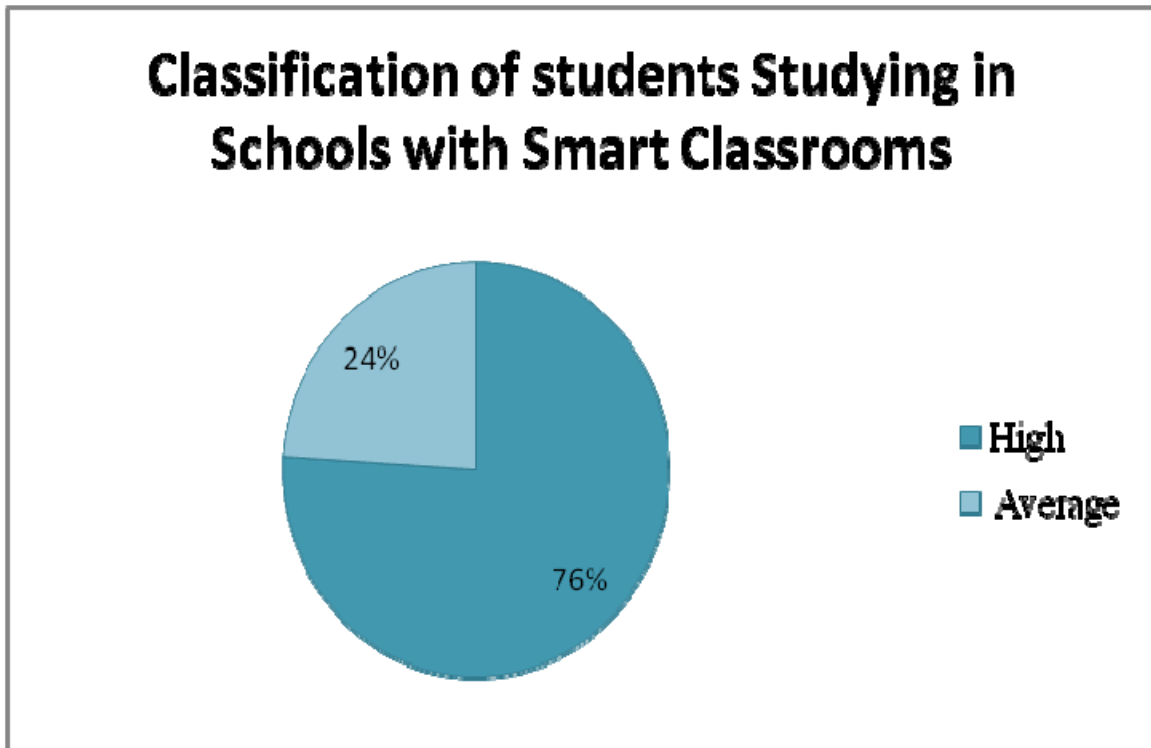
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**Table 1: Classification of Students studying in Schools with Smart Classrooms on the basis of their scores of Achievement Motivation**

S.No.	CATEGORY	NORMS	FREQUENCY		TOTAL SAMPLE N = 100
			BOYS N = 50	GIRLS N = 50	
1	HIGH	46 – 60	33	43	76
2	AVERAGE	33 – 45	17	7	24
3	LOW	20 -- 32	Nil	Nil	Nil

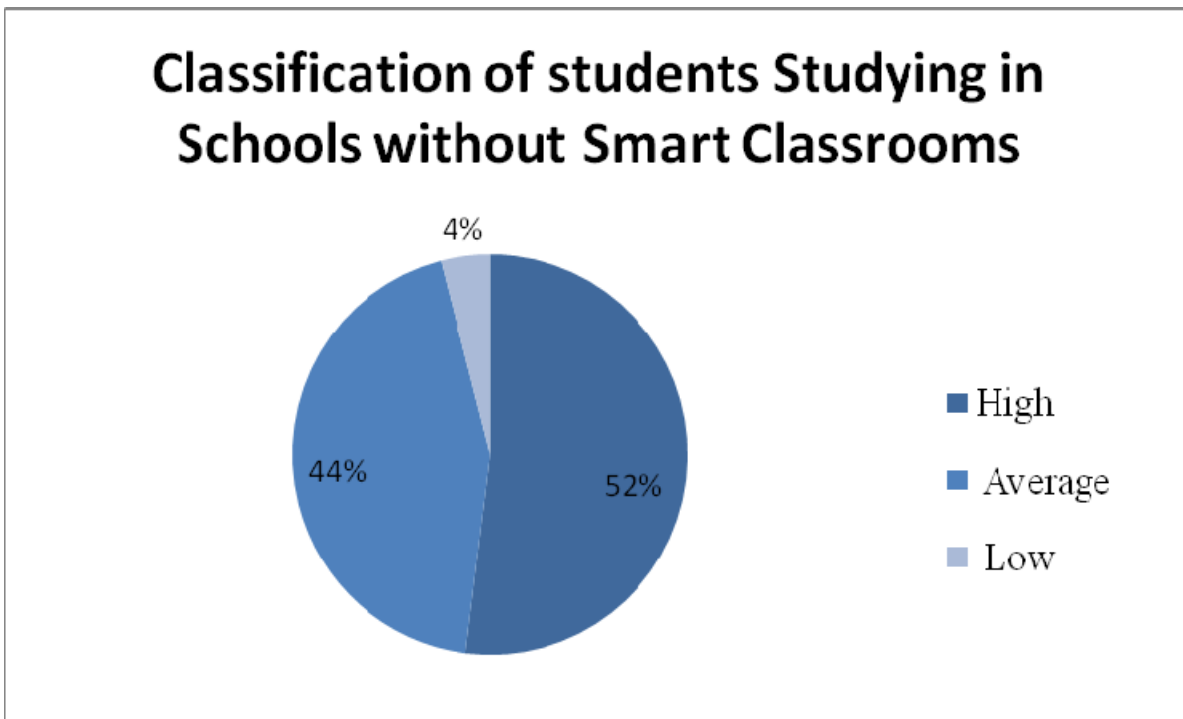
**Fig. 1: Pie-diagram showing classification of Students studying in Schools with Smart Classrooms.**



**Table 2: Showing Classification of Students studying in Schools without Smart Classrooms on the basis of their scores of Achievement Motivation**

S.No.	CATEGORY	NORMS	FREQUENCY		TOTAL SAMPLE N = 100
			BOYS N = 50	GIRLS N = 50	
1	HIGH	46 – 60	19	33	52
2	AVERAGE	33 – 45	28	16	44
3	LOW	20 -- 32	3	1	4

**Fig. 2: Pie-diagram showing classification of Students studying in Schools without Smart Classrooms.**

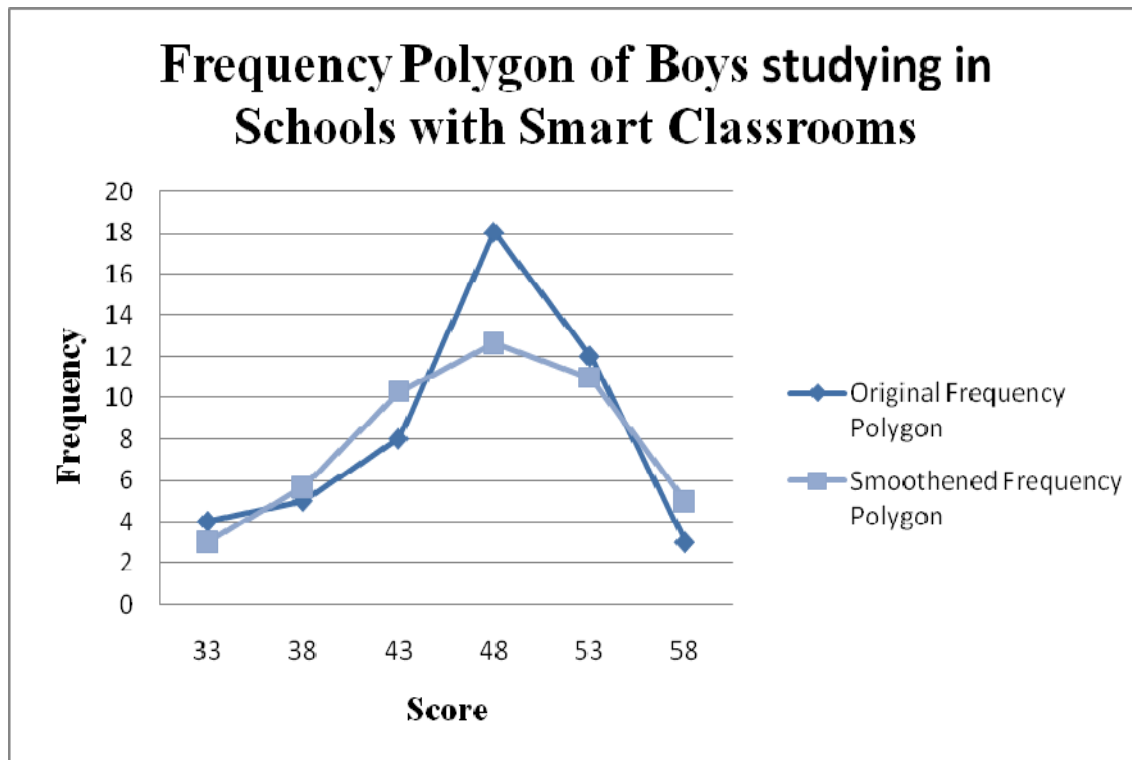


**Table 3: Frequency distribution of the scores of achievement motivation of Boys studying in Schools with Smart Classrooms (along with Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis)**

<b>Class Interval</b>	<b>Frequency</b>
31 – 35	4
36 – 40	5
41 – 45	8
46 – 50	18
51 – 55	12
56 -- 60	3

<b>MEAN</b>	<b>MEDIAN</b>	<b>MODE</b>	<b>STANDARD DEVIATION</b>	<b>SKEWNESS</b>	<b>KURTOSIS</b>
46.8	47.72	49.56	6.5	-0.42	0.243

**Fig. 3: Original and Smoothened Frequency Polygon of Boys studying in Schools with Smart Classrooms**

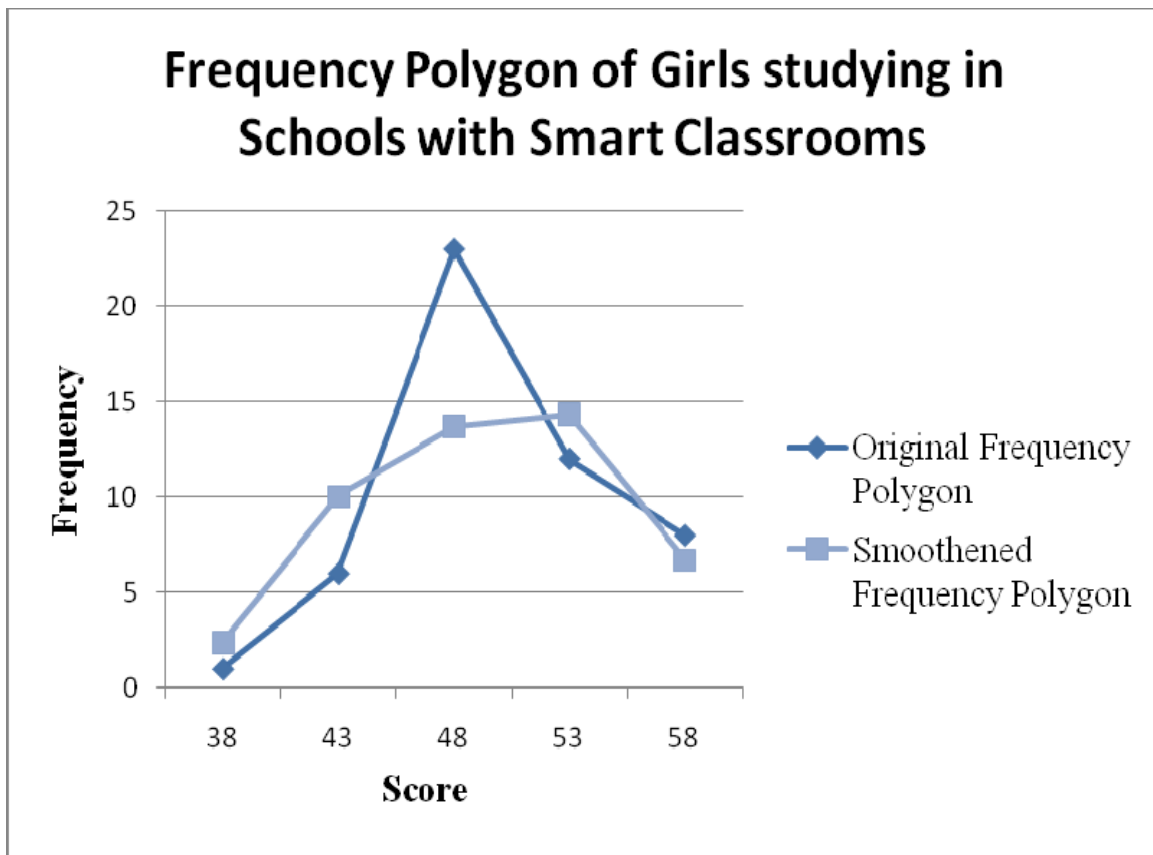


**Table 4: Frequency Distribution of the scores of achievement motivation of Girls studying in Schools with Smart Classrooms along with Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis**

<b>Class Interval</b>	<b>Frequency</b>
36 – 40	1
41 – 45	6
46 – 50	23
51 – 55	12
56 -- 60	8

<b>MEAN</b>	<b>MEDIAN</b>	<b>MODE</b>	<b>STANDARD DEVIATION</b>	<b>SKEWNESS</b>	<b>KURTOSIS</b>
50	49.413	48.239	4.796	0.367	0.255

**Fig. 4: Original and Smoothened Frequency Polygon of Girls studying in Schools with Smart Classrooms**

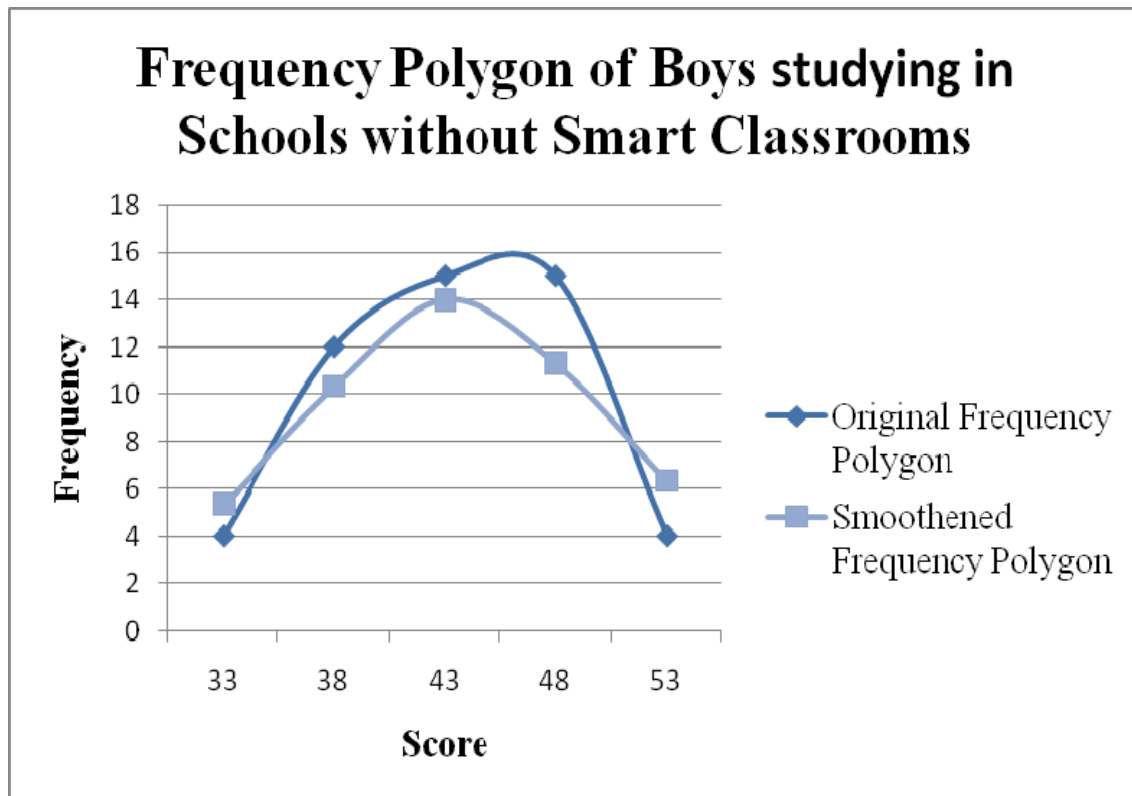


**Table 5: Frequency Distribution of the scores of achievement motivation of Boys studying in Schools without Smart Classrooms along with Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis**

<b>Class Interval</b>	<b>Frequency</b>
31 – 35	4
36 – 40	12
41 – 45	15
46 – 50	15
51 – 55	4

<b>MEAN</b>	<b>MEDIAN</b>	<b>MODE</b>	<b>STANDARD DEVIATION</b>	<b>SKEWNESS</b>	<b>KURTOSIS</b>
43.3	43.5	43.9	5.42	-0.11	0.302

**Fig. 5: Original and Smoothened Frequency Polygon of Boys studying in Schools without Smart Classrooms**

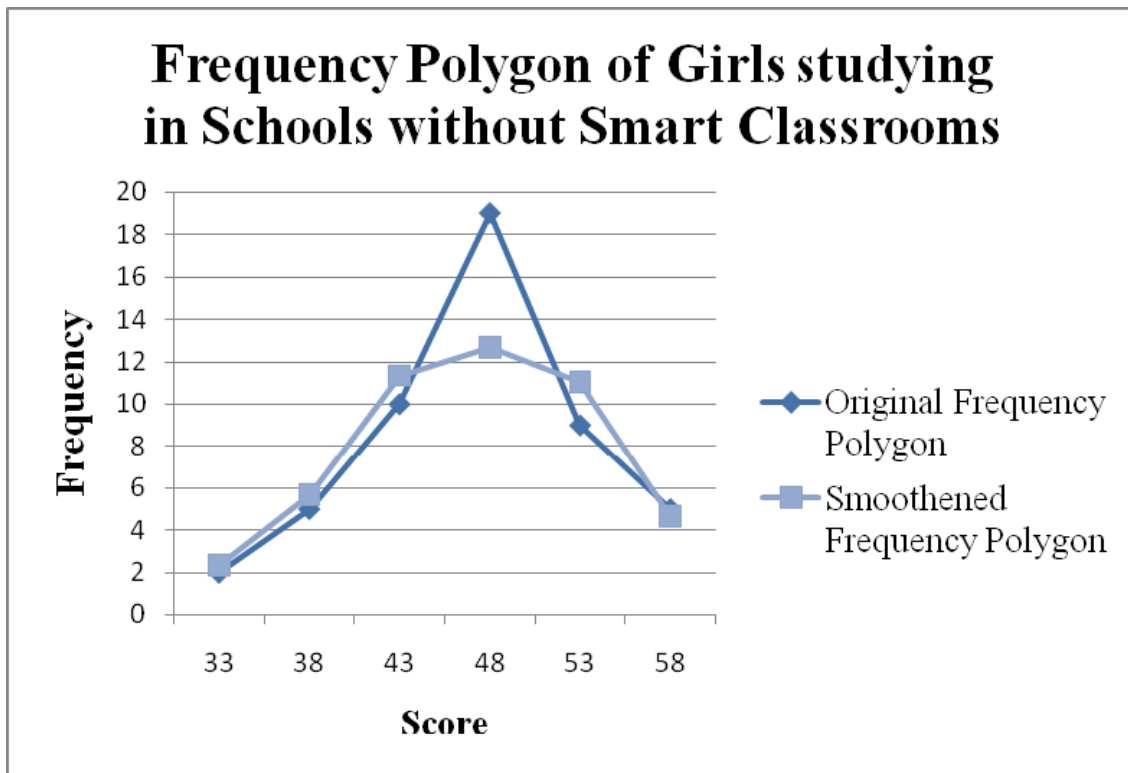


**Table 6: Frequency distribution of the scores of achievement motivation of Girls studying in Schools without Smart Classrooms along with Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis**

<b>Class Interval</b>	<b>Frequency</b>
31 – 35	2
36 – 40	5
41 – 45	10
46 – 50	19
51 – 55	9
56 – 60	5

<b>MEAN</b>	<b>MEDIAN</b>	<b>MODE</b>	<b>STANDARD DEVIATION</b>	<b>SKEWNESS</b>	<b>KURTOSIS</b>
47.3	47.605	48.215	6.16	-0.148	0.237

**Fig. 6: Original and Smoothened Frequency Polygon of Girls studying in Schools without Smart Classroom**

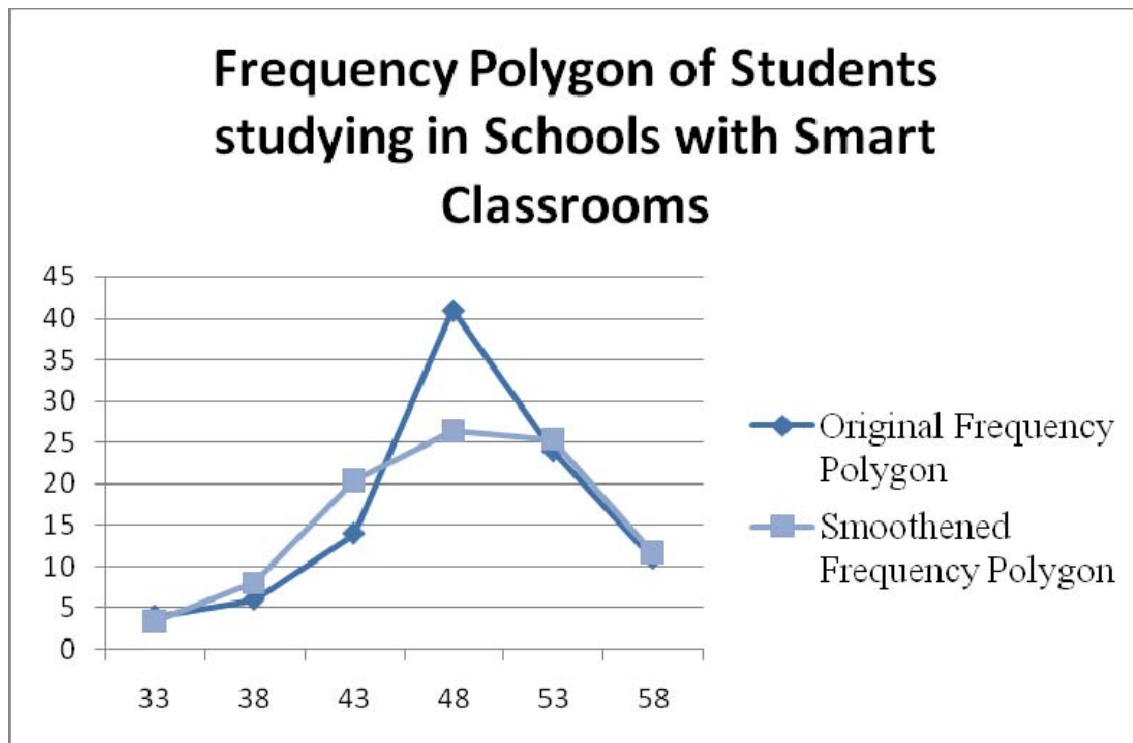


**Table 7: Frequency Distribution of the scores of Achievement Motivation of Students studying in Schools with Smart Classrooms along with Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis**

<b>Class Interval</b>	<b>Frequency</b>
31 – 35	4
36 – 40	6
41 – 45	14
46 – 50	41
51 – 55	24
56 – 60	11

<b>MEAN</b>	<b>MEDIAN</b>	<b>MODE</b>	<b>STANDARD DEVIATION</b>	<b>SKEWNESS</b>	<b>KURTOSIS</b>
48.4	48.67	49.21	5.94	-0.136	0.225

**Fig. 7: Original and Smoothened Frequency Polygon of Students studying in Schools with Smart Classroom**

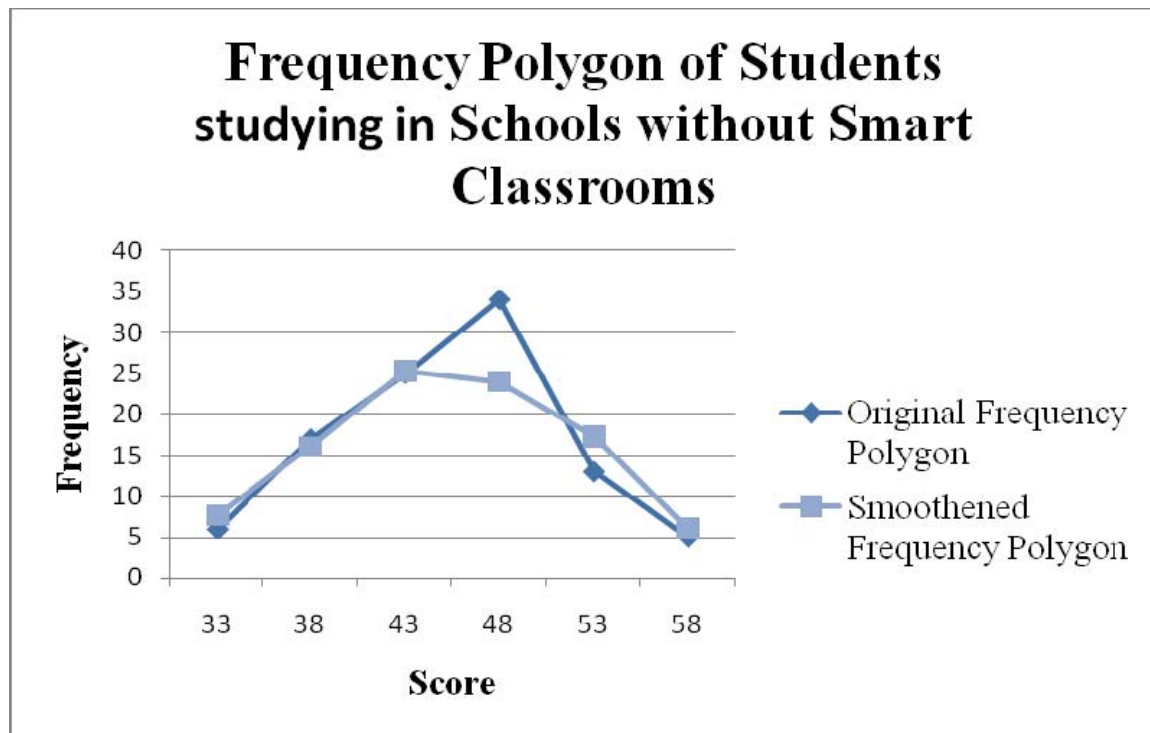


**Table 8: Frequency Distribution of the scores of achievement motivation of Students studying in Schools without Smart Classrooms along with Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis**

<b>Class Interval</b>	<b>Frequency</b>
31 – 35	6
36 – 40	17
41 – 45	25
46 – 50	34
51 – 55	13
56 – 60	5

<b>MEAN</b>	<b>MEDIAN</b>	<b>MODE</b>	<b>STANDARD DEVIATION</b>	<b>SKEWNESS</b>	<b>KURTOSIS</b>
45.30	45.794	46.782	6.14	-0.24	0.253

**Fig. 8: Original and Smoothened Frequency Polygon of Students studying in Schools without Smart Classroom**

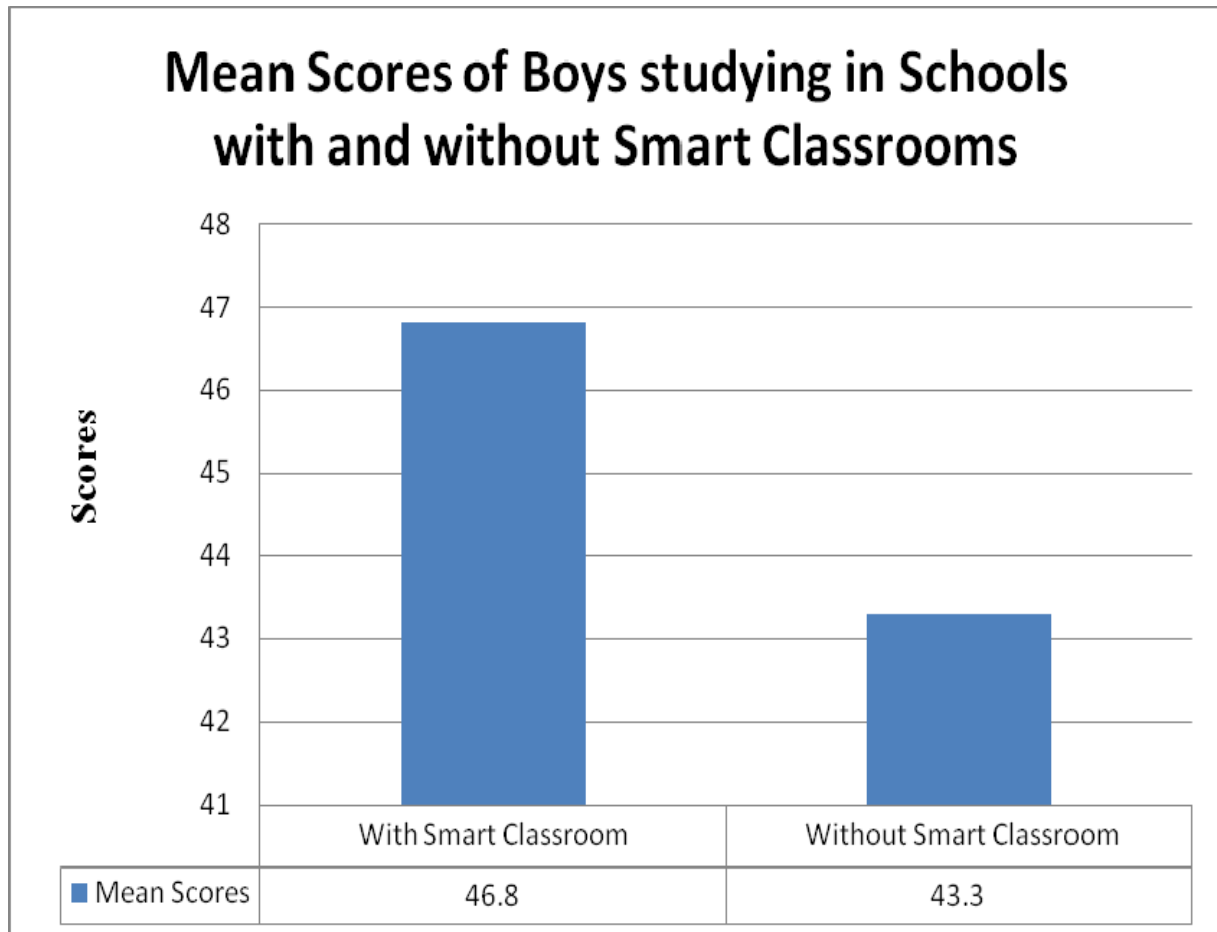


**Table 9: Comparison of Boys studying in Schools with and without Smart Classroom in terms of their scores of Achievement Motivation**

<b>RESPONDENTS</b>	<b>N</b>	<b>MEAN</b>	<b>S.D.</b>	<b>T-VALUE</b>
<b>Boys studying in schools with Smart Classroom</b>	<b>50</b>	<b>46.8</b>	<b>6.5</b>	<b>5.216**</b>
<b>Boys studying in schools without Smart Classroom</b>	<b>50</b>	<b>43.3</b>	<b>5.42</b>	

**\*\* Significant at .01 level of significance**

**Fig. 9: Bar-graph of Mean Scores of Boys studying in Schools with and without Smart Classrooms**

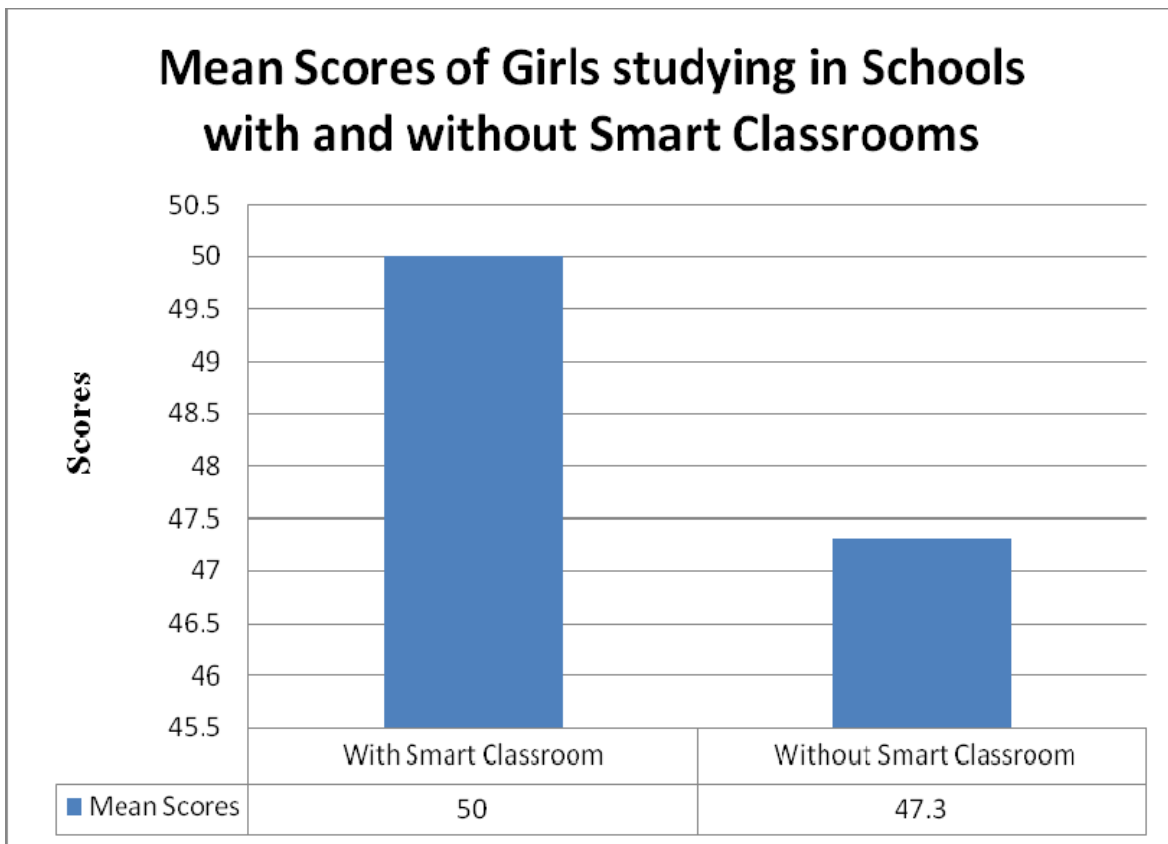


**Table 10: Comparison of Girls studying in Schools with and without Smart Classroom in terms of their scores of Achievement Motivation**

<b>RESPONDENTS</b>	<b>N</b>	<b>MEAN</b>	<b>S.D.</b>	<b>T-VALUE</b>
<b>Girls studying in schools with Smart Classroom</b>	<b>50</b>	<b>50</b>	<b>4.796</b>	<b>3.33**</b>
<b>Girls studying in schools without Smart Classroom</b>	<b>50</b>	<b>47.3</b>	<b>6.16</b>	

**\*\*Significant at .01 level of significance**

**Fig. 10: Bar-graph of Mean Scores of Girls studying in Schools with and without Smart Classrooms**



**Table 11: Comparison of Students studying in Schools with and without Smart Classroom in terms of their scores of Achievement Motivation**

<b>RESPONDENTS</b>	<b>N</b>	<b>MEAN</b>	<b>S.D.</b>	<b>T-VALUE</b>
<b>Students studying in schools with Smart Classroom</b>	<b>50</b>	<b>48.4</b>	<b>5.94</b>	<b>3.63**</b>
<b>Students studying in schools without Smart Classroom</b>	<b>50</b>	<b>45.3</b>	<b>6.14</b>	

**\*\*Significant at .01 level of significance**

**Fig. 11: Comparison of Mean Scores of Students of schools with and without Smart classrooms**

