

## RELATIONSHIP OF LEARNING ENVIRONMENT AND ACADEMIC ACHIEVEMENT; A CASE STUDY OF HEALTH AND PHYSICAL EDUCATION STUDENTS

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### ABSTRACT

**Purpose:** This study explored the relationship between learning ambience and academic attainment of health and physical education students at secondary school level. **Methods:** A survey of 800 (males=400; females=400) randomly selected from 40 secondary schools was conducted to collect the required information. However, after elimination of some spoilt questionnaires; the researchers finally used 768 valid questionnaires for data analysis. **Results:** The analyzed information stated that the current student teaching and learning facilities in the chosen region were discovered not up to the mark, so these facilities have an adverse effect on learners, academics. Therefore, a major portion from both the groups of gender fell in the category of low achievement. **Conclusion:** The findings of the study also revealed girls reporting lesser academic achievement might be due to societal norms and domestic pressure. **Recommendations:** The findings of the study may help the teachers to work in collaboration with their respective head of the institution to establish an arsenal of strategies that could inoculate students against low and average academic achievements by providing a conducive to learning environment.

**Key Words:** Learning environment, academic achievement, health and physical education, secondary schools' students.

### INTRODUCTION

Despite various opinions regarding the aims of education, academic achievement has always been considered as one of the pivotal points in the mind of the educator researchers. One of the most important goals of the education is to develop and achieve high academics among students (Nightingale & O'neil, 2012). It is an admitted fact that all other objectives of

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education are fruitless unless proper and due consideration are not paid to the academic development of the students (Bok, 2009).

School is considered as formal agency in perspective of the child development. Schools is a place, whereby a child experiences in new ways of socialization and cognitive development. These new ways have direct impact on the cognitive as well as affective domains of the students (James & Prout, 2015). The nature of this impact can properly be understood if researchers conduct to investigate the schools' environmental factors that are most effective in promoting and developing the students' potentialities.

Learning environment refers to all those physical, social, psychological and cultural contexts in which the students learn new ideas, observation, and experiences. A feasible learning environment is the pre-requisites for effective teaching and learning process (Evans, 2008). Learning environment refers to a diverse platform where the students engage themselves in learning new skills and techniques. Therefore, one can say that learning environment does not pass on a traditional or limited connotation such as a room full of desks and a chalkboard.

Academic achievement refers to the progress a child does in school as measured by scores on achievement tests, grade point averages, promotion from grade to grade, and the development of proper attitude. Research reveals a positive relationship between intellectual capacity and students' academic achievements (Fakeye, 2010). In addition, non-intellectual factors, like the students' will to achieve, health status, and self-concept plays a decisive role in a student's ability to achieve excellent academic achievements (Judge et al., 2007; Nonis, Philhours, Syamil & Hudson, 2005). Measuring students' academic achievements have paramount significant on the ground as psychological assumption reveals significant differences among individuals based on their age group, gender, potential abilities, and academic proficiency (baron, 2006). No matter, this academic achievement measured by teachers' grading, obtained marks, and other standardized students achievement tests.

In our country (Pakistan) physical education has been a fully-fledged academic discipline in the educational institutions. It has got the status of an optional subject and it is offered to the students of arts and humanities group that contributes to positive or negative academic experience for all the secondary school students. At secondary school level of education, status and condition of the physical education is comparatively respectable. Every secondary school is provided with the qualified physical education teacher who, in addition to supervising the sport, takes physical education classes of 9th and 10th. Physical education teacher is appointed in BPS-15 by the recommendation of district education office (DEO).

When favorable, the climate of health and physical education classes will significantly affect the learning of students without guaranteeing it. The verbal and non-verbal actions of teachers, along with their attitudes, are the strongest and most representative variables in the environment. For example, the excitement of teachers has long been known to play a critical role in the attitudes and motivation of students in the school (Rathmann, Herke, Hurrelmann & Richter, 2018). Research has shown that teachers during classes of health and physical education are not very enthusiastic or wet and that the emotional climate is neither optimistic nor oppressive, but rather neutral (Lee, 2019).

One of the most important aspects of effective teaching is to develop an engaging and conducive learning environment (Avalos, 2006). No matter, it is physical learning environment, such as classroom facilities, instructional facilities, drills, labs or psychological, learning environment, including motivation, students' psychological needs and social environment such as supportive learning culture, recreational as well as instructional aspect. However, the learning environment is an expression that is a lot broader than these components. The term learning environment comprises of several aspects like, learners' characteristics, teaching and learning goals, supportive learning, and assessment strategies that measure learning (Jethro, Grace & Thomas, 2012)

Facilitation means to provide all the required equipment needed for effecting teaching and learning process. If the required facilities are available, then the students work and the assignment become easy that ultimate leads to better academic achievements (Adey & Shayer, 2006). Likewise, interactive games and other recreation add in life adjustment and academic endeavour. Research reveals that students those who participate in non-competitive games are better able to function in the important domains of life such as family, community and academic endeavours (Hills, Dengel & Lubans, 2015). Participation in interactive games, students are brought into contact with aspects of the real world, of which they will become a part when they have the academic setting (McConkey, Dowling, Hassan & Menke, 2013).

Drill play an important role in the learning process. Research suggests that the units of work might be broken down into units into orderly progression (Wright, Trudel & Culver, 2007). In this manner, the students develop their creativity that ultimately leads to academic development. Drill activities are beneficial in developing skills and concepts in reading, mathematics, and science (Lehtinen, Hannula-Sormunen, McMullen & Gruber, 2017). Results of another research study indicated that academic skills are learned faster when these skills are practically during drill activities (Stepp-Greany, 2002).

Motivation is considered as one of the basic factors to effective learning and academic achievements. No learning is effective until and unless proper attention is given to the motivational aspects. Therefore, educational research suggests that motivational factors such as verbal appreciation, prize, and clapping are helpful for effective learning and achieving high academic achievement (Cole & Hilliard, 2006). Keeping into consideration, the present study was conducted with the aim to investigate the relationship between learning environment and students' academic achievement at secondary school level.

### **OBJECTIVES OF THE STUDY**

This study was conducted with the following objectives:

- i. To analyze the learning environment of secondary schools in Dera Ismail Khan.
- ii. To assess the levels of academic achievements of secondary schools' students of Dera Ismail Khan.
- iii. To determine the relationship between learning environment and academic achievement of secondary school students in Dera Ismail Khan.

### **RESEARCH QUESTIONS OF THE STUDY**

Following were the research questions of this study.

- i. What is learning environment of secondary schools in Dera Ismail Khan?
- ii. What are the different levels of academic achievements of secondary school students in Dera Ismail Khan?
- iii. What is the relationship between different factors of learning environment and academic achievement of secondary school students in Dera Ismail Khan?

### **METHOD AND MATERIALS**

The research methodology used in this study is described below;

#### **Population and Sample of the Study**

All the health and physical education students enrolled in Government High Schools of Dera Ismail Khan constituted a population for this study. The researchers preferred to conduct a survey of the students in a Dera Ismail Khan to determine the relationship between different factors of learning environment and students' academic achievement at secondary school level. There are total 468 Government High Schools in Dera Ismail Khan. The names of these

schools were obtained and listed alphabetically. The researchers then numbers, the names on the list from 001 to 468. The researchers used a multi-stage sampling to select representatives from the whole population. In the first stage, the researcher randomly selected 20 males and 20 females High Schools. In the second stage, a sample of  $n=20$  respectively from males and females Government High Schools was taken to collect the required data. Thus, a sample of  $n=800$  (males=400; females;400) was finally selected and participated in the study.

### **Research Instrument**

A scale measuring nine aspects (learning facilities, recreational spaces, instructional spaces, supportive learning culture, addressing learners' needs, celebrate success, interactive games and activities, drilling and motivation) of learning environment of secondary school students was developed after thorough studying the existing literature in the concerned area. The first draft of the questionnaire was administered among five experts for judgmental validation. All the suggestions/corrections made by the experts were accordingly incorporated. The questionnaire was then distributed among 50 students from the target population for pilot testing. The Cronbach's Alpha was used to determine the internal consistency of the scale, which was found 0.81.

### **Procedure of Data Collection**

The required data were collected through personal visits by the sampled schools. The researcher personally administered the entire questionnaires among the secondary school students and proper guidance was sorted out to avoid any bias in collecting the real information. The co-operation of the Head of the Schools in this regard was excellent. The academic achievement score was obtained from the Annual results 2018, taken from gazette of Board of Intermediate of Secondary Education, Dera Ismail Khan. A survey of 800 (males=400; females=400) randomly selected from 40 secondary schools was conducted to collect the required information. However, after elimination of some spoilt questionnaires; the researchers finally used 768 valid questionnaires for data analysis.

### **DATA ANALYSIS AND RESULTS OF THE STUDY**

The required data were collected through personal visits by the sampled schools. The research individually administered the entire questionnaires among the secondary school students and proper guidance was sorted out to avoid any bias in collecting the real information. Statistical tests such as, Pearson Correlation Coefficient, Independent Sample t-test were used to achieve the set research questions of the study.

**Table 1:** *Students' scores on existing facilities for teaching and learning*

Existing Facilities	N	Mean	SD	Hypothetical Mean
Learning Facilities	768	26.56	6.26	24
Recreational Spaces	768	16.85	4.72	12
Instructional Spaces	768	19.64	5.47	14
Supportive Learning Culture	768	8.00	3.67	6
Addressing Learners' Needs	768	84.02	2.18	4
Celebrate Success	768	12.54	2.23	8
Interactive Games And Activities	768	19.57	4.57	6
Drilling	768	12.94	2.01	8
Motivation	768	10.95	2.64	6

( $n=768$ )

The researchers assessed the existing facilities for teaching and learning through ten different aspects and the results have been presented in table no.1. The table depicted that mean score of the students in learning facilities was 26.56 and SD= 6.26, while hypothetical mean noted as 24. Similarly, the mean score and SD were respectively recorded as 16.85;4.72 in respect of recreational spaces. As for instructional spaces, the analyzed data revealed that the mean score was recorded as 19.94, while SD was noted as 5.47. In respect of supportive learning culture, the mean score and standard deviation were respectively noted as 8.00 and 3.67. According to the table, the mean score of the students in respect of addressing learners' needs was calculated 84.02 and SD was measured 2.18. The mean score of students in respect of celebrating successes noted 12.54 and SD=2.23. The mean score of students in Interactive games and activities found 19.57, whereas standard deviation was noted 4.57 and 12.94, 2.01 were respectively noted mean score and standard deviation in term of drilling. The mean score of students in respect of motivation noted 10.95 and SD=2.64. Based on the analyzed data, it can be interpreted that the existing facilities for teaching-learning are not up the required demand.

**Table 2:** *Students' academic achievement (Boys and Girls)*

Gender	Achievement Level	N	%	Range	Mean Score	SD
Boys	Low Achievers	318	41.40	540-693	613.85	29.39
	Average Achievers	286	34.89	694-803	741.43	29.39
	High Achievers	164	21.35	804-1040	841.37	29.39
	Low Achievers	310	40.36	540-693	623.45	25.33

Girls	Average Achievers	292	38.02	694-783	720.45	37.45
	High Achievers	166	21.62	784-1039	845.14	13.49

(n=768)

The students' academic achievements were measured through their marks obtained in the Annual examination, 2018 and the marks have been from gazette of Board of Intermediate of Secondary Education, Dera Ismail Khan. The table depicted that 41.40 % boys fell in the category of low achievers compared to girl who have shown 40.36% low achievers. Likewise, 34.89 % boys were ranked as average achievers, whereas 38.02% girls were noted as average achievers. The analyzed data reported 21.35% high achievers among male category and 21.65% high achievers among girls.

**Table 3:** *Relationship of existing facilities for teaching and learning with students' academic achievements*

Existing Facilities	Correlation with Academic Achievements (r)	P
Learning Facilities	-0.027	0.376
Recreational Spaces	-0.62	0.429
Instructional Spaces	0.634	0.02
Supportive Learning Culture	-0.57	0.389
Addressing Learners' Needs	-0.62	0.429
Celebrate Success	.42	0.01
Interactive Games And Activities	.62	0.00
Drilling	.62	0.00
Motivation	-0.22	0.593

(n=768)

To determine the relationship of existing facilities with students' academic achievements, Pearson Correlation Coefficient was applied and the results have been given in the table=3. The analyzed data depicted that the learning facilities ( $r=-0.027$ ,  $p > 0.05$ ) and motivation ( $r= -0.22$ ;  $p > 0.05$ ) have weak negative relationship with students' academic achievement. Other factors such as recreational spaces ( $r= -0.62$ ;  $p > 0.05$ ), supportive learning culture ( $r= -0.57$ ;  $p > 0.05$ ) and addressing learners' needs ( $r= -0.62$ ;  $p > 0.05$ ) indicated moderate negative relationship with students' academic achievement. According to the analyzed responses, the correlation of instructional spaces ( $r= 0.634$ ;  $p < 0.05$ ) was found strong positive relationship students' academic achievement.

Likewise, the learning factor celebrating success ( $r = .42$ ;  $p < 0.05$ ) has moderate positive relationship, whereas interactive games and activities ( $r = .62$ ;  $p < 0.05$ ) and drilling ( $r = .62$ ;  $p < 0.05$ ) have strong positive relationship students' academic achievement.

## **DISCUSSION ON RESULTS OF THE STUDY**

The study was conducted to determine the relationship between learning environment and students' academic achievement at secondary school level. The results of the present study revealed that existing facilities for learning such as interacting games and activities, drilling, and celebrating successes indicated a strong positive correlation with students' academic achievement. Similar findings have been indicated that cliques may be broken by establishing non-competitive sports and other recreational activities within a learning environment (Armour, 2013). Non-competitive sports activities boost the confidence of newly admitted students and also assist the shy students to have a sense of belongingness (Elime et al., 2013). The findings of the present study indicated that celebrating students' success indicated moderate positive relationship students' academic achievement, whereas research conducted by Sun, Tsai, Finger, Chen, and Yeh (2008) revealed that one of the important factors for establishing a positive and effective learning environment is to celebrate the success of students.

On the other hand, the results of the present study shown that learning facilities and motivation indicated weak negative relationship with students' academic achievement among secondary school students. However, research in this area revealed that the availability of required learning facilities not only make the learning process effective, but, it also enhances the academics of the students (Nicol, & Macfarlane-Dick, 2006). Motivational factors such as appreciation, prize and clapping boost the students' confidence, which ultimately leads to a desirable academic achievement (Rouse, 2013).

It has been indicated that the factors like recreational aspects, instructional aspects, supportive learning culture and addressing the learners' needs reported a negative correlation with students' academic achievements. Contrary to the above situation, Durlak et al (2011) found positive effect of supportive learning culture, including social, physical, and psychological upon students, learning capabilities. Same stance has been reported by McCombs and Vakili (2005) who states that it is hard for learners to remain engrossed or interested, If the learning atmosphere is not conducive to gaining new knowledge or skills.

The findings of the present study revealed that boys were comparatively better



in their academic achievements compared to their counterparts' girls. Girls reporting lesser academic achievement might be due to societal norms and domestic pressure. The better academic achievements among boys might be due to the higher amount of participation in interactive games and other activities compared to girls, but these findings again bring into line with societal norms where girls are kept inside the wall and do not allow to participate in games and other activities.

### **CONCLUSION OF THE STUDY**

To have an effective learning environment, teaching must be taken considering the fundamental factors, which serves an important role in perspective of teaching and learning in a school setting. Provision of adequate facilities and conducive learning environment leads to a desirable academic achievement. However, it has been concluded that the prevailing facilities for students learning in the researcher's area were found not up to the mark, hence; these not up to the mark facilities have an adverse impact on students' academic achievements. Therefore, findings have shown that most of the boys and girls fell in the category of low achievers and average achievers respectively. Hence, the researcher recommends that the teachers in collaboration with their respective head of the institution establish an arsenal of strategies that could inoculate students against low and average academic achievements by providing a conducive learning environment in the shape of required equipment needed for effecting teaching and learning process.

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