



## **Impact of Outdoor Learning on Student Achievement At Secondary School Level**

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### **ABSTRACT**

A descriptive research study explores the effect of outdoor learning on students of secondary school. Outdoor learning improves student academic outcomes to assess their success in school and student attitudes toward learning science. This study examined the learning experiences of 180 students of the secondary school of Bahawalpur by random sampling each student was observed by outdoor lessons. Each lesson lasted an hour. Students filled the questionnaire and give an opinion before and after class. Finding reported that outdoor educations are more effective at developing positive attitudes towards learning science than a typical classroom experience. The outdoor environment acts as a stimulus for creative thinking. The majority of the students showed a positive response that they would like to have more lessons outdoor as compared to indoor. The research study suggested that there is a need for outdoor learning in school to improve science scores.



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## **1. Introduction**

Outdoor learning is active learning in the outdoor. In outdoor learning, students learn about a natural phenomenon they easily gain the concept of natural science. Students showed interest in outdoor learning in planted areas with grass, trees and flowers. Observation showed that students actively take part in many creative activities in outdoor learning.

Andrea Faber Taylor, Kuo, and Sullivan (2001) determine the effect of educational programs developed based on the school-based outdoor education approach on the academic achievement of students by using a natural environment. The study utilized the mixed method of qualitative and quantitative data collection. The result demonstrates that the developed program is effective. At the end of the study, a significant difference was revealed in terms of the student knowledge and skill. Face-to-face interviews were conducted with teachers and students.

Rahman (2009) accepted that outdoor education produces positive effects. On participants due to exposure to adventure programs and activities intended to build character through enhancing self-discovery. The study investigated the effect of eight-week outdoor education programs on the development of social-emotional competencies Self-awareness, Self-management, Social Awareness, Relationship management and responsible decision making. Each lesson lasted an hour and was held during the school secondary three Physical Education curriculum 40 students underwent this program. Quantitative results indicated to medium to large effect on the express stream but negligible effect on

normal stream students. Comparing genders, slightly more statistically significant effects were seen in males than females. Supported by interviews on students and teachers as well as students' weekly reflection, the qualitative result indicated that the program yielded the said desired outcome as well as supported student's engagement.

## **2. Literature Review**

Marks (2000); J. Parsons and Taylor (2011) student disengagement characterized by students being bored and not involved in the learning is still a problem in schools. Students who exhibit emotional and behavioral withdrawal or disengagement are more likely to leave school before graduation.

Alexander, Entwisle, and Kabbani (2001) study of student disengagement behaviors included an examination of student attendance records. Their study revealed that students who had a high number of absences in high school and later dropped out also had a significantly higher number of absences while attending middle school. Alexander and Entwisle examined both student engagement behaviors and school performance concerning students dropping out of schools

### **2.1. Health benefits**

A. Parsons (2011) shows a link between young children's outdoor activity in schoolyards and increased balance coordination. Her research shows that less outdoor activity leads to more obesity and more outdoor activity leads to less obesity in children. The persons also indicated that increased outdoor activity increased coordination, balance and motor skills.

A study conducted by A. F. Taylor and Kuo (2008) found that children with ADHD had higher levels of concentration after a walk in a park than after a walk in an urban setting. Also, there is some evidence to show that children with ADHD show more fatigue after indoor activities as opposed to outdoor activities. Although this study did not find that there was a lasting effect after children had experienced a walk in the park, it does open up the question of whether outdoor nature activities are a possible treatment for ADHD. In a separate article by (Andrea Faber Taylor et al., 2001) there is much discussion of the effects of ADD in children. These effects range from not having a good social relationship to not being able to concentrate on their school work. Various types of treatment have been tried including medications and changes in diet.

### **2.2. Benefits of Incorporating Time Outdoors at School**

found that teachers believed students collaborated and participated more actively in an outdoor learning space. Improved student to teacher and student to student relationships were observed. Also, students who normally did not participate in class showed a higher percentage of participation as a result of learning outdoors. J. Parsons and Taylor (2011) the paper suggests that the best place for children to learn about nature is in nature itself, as opposed to books or electronic sources. Exposure to nature could benefit emotional, physical and social health in children. Children need to have experiences in nature to create consciousness towards the natural environment. It is also beneficial for children to have interaction with environmentally social groups in nature since they become more likely to follow that trend as a result.

Bohling (2015) teachers observed more skill development in toddlers in the areas of thought fullness, cooperation, problem-solving, and social interaction. Teachers also noted language development as a skill that was enhanced by getting the children outdoors. Children who did not talk much when they were indoors opened up and talked about the things they saw outdoors. Children were more creative while using natural materials.

### **2.3. Statement of the problem**

"To determine the impact of outdoor learning on students' achievement". Student achievement with academic work is essential to their better performance as well as their social and cognitive development.

## 2.4. Research Objective

The objectives of the study were:

- To find out the impact of outdoor learning on student achievement at school levels.
- To identify the impact of outdoor learning on students' behavior.
- To give some suggestions for improvement in student learning.

## 2.5. Research Questions

- Is there any change in student achievement as a result of outdoor education?
- Does outdoor learning improve student behavior?
- Do students show interest in the outdoor lesson?
- Does the student enjoy working outdoor more often?

## 2.6. Significance of the Study

This research is important for students to increase academic achievement and cognitive abilities and attitude towards learning science by grasping concepts about natural phenomena. It has been commonly accepted that outdoor education shows positive effects in participants due to exposure to adventure programs Outdoor learning environment helps to improve student engagement and achievement. Students could feel confident in including outdoor learning.

## 2.7. Delimitation of the Study

The study was delimited:

Two government and private secondary schools of Bahawalpur. The survey only examined on little population so we are not saying that results are universal and applied all over the world.

## 3. Research Methodology

The descriptive quantitative research study was used to explore the impact of outdoor learning on student achievement by the use of questionnaires and personal interviews and observation at the school level.

### 3.1. Research Design

This quantitative Descriptive research study was used to explore the impact of outdoor learning on student achievement. Data was collected during the outdoor lesson of class ninth and tenth students in which boys and girls both are involved in the outdoor lesson. Outdoor activities were arranged by the teachers in which students actively participated. It includes questionnaire personal interviews and direct observation of students.

### 3.2. Population

The population includes all the students of the secondary school of Bahawalpur. The students of these schools were the target population.

### 3.3. Sample

The population of the study was large so, a sample of the population was selected. For selecting samples simple random sampling technique was used. The sample of the study consisted of 180 students. The stratification was based on 2 government schools and 2 private schools in Bahawalpur. The 82 students of the 9<sup>th</sup> class and 98 students of the 10<sup>th</sup> class solve the questionnaire and give opinions about this topic.

### 3.4. Research Instrument

Research instruments such as close-ended questionnaires were used to collect data about student attitudes towards outdoor learning to improve cognitive abilities as compared to an indoor lesson. The secondary school students of the 9<sup>th</sup> class and 10<sup>th</sup> class solved the questionnaire and give opinions. The instrument consists of a three-point scale ranging from "Yes" to "No" "Not sure". Research indicates a positive link between outdoor environmental education and student achievement.

### 3.5. Data Collection

Data were collected through the questionnaire from the Government and Private Secondary Schools of Bahawalpur. Data were collected during February 2019. Data includes student interviews and learning activities before and after the lesson. Data was collected through keeping records of the number of times during the outdoor period that students showed interest in an outdoor lesson as compared to the indoor lesson. As quantitative data, statistical techniques are used for data analysis. It includes descriptive statistics.

## 4. Data Analysis

After collecting data, it was analyzed to get the information about the impact of outdoor learning on student achievement. The data analysis process included the coding of information and organizing it with SPSS software. As quantitative data, statistical techniques are used for data analysis. It includes descriptive statistics.

**Table 1**  
**Gender wise distribution of respondents**

S/No.	Gender	Frequency	Percentage	Mean	STDEV
1.	Male	80	43		
2.	Female	100	53	1.5556	.49829
	Total	180	100.0		

The 1 table shows that male frequency 80 and percentage is 43 and female frequency is 100 and percentage is 53. Their mean and standard deviation is 1.5556 and .49829 respectively.

**Table 2**  
**Class wise distributions of the respondent?**

Sr. No	Class	Frequency	Percentage	Mean	STDEV
1.	9 <sup>th</sup>	82	44		
2.	10 <sup>th</sup>	98	52	1.5444	.49941
	Total	180	100.0		

Table 2 show that the 9<sup>th</sup> class frequency is 82 and percentage is 44 and 10<sup>th</sup> class frequency is 98 and the percentage is 52. Their mean and standard deviation is 1.5444 and .49941 respectively.

**Table 3**  
**Institute wise distribution of respondents**

Sr. No	Institute	Frequency	Percentage	Mean	STDEV
1.	Government	90	48.4		
2.	Private	90	48.4	1.500	.50139
	Total	180	100.0		

Table 3 shows that government frequency is 90 and percentage is 48.8 and private frequency 90 and percentage is 48.8. Their mean and standard deviation is 1.500 and .50139 respectively.

**Table 4**  
***Would you like to have more lessons outside?***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1.	Yes	128	68		
2.	No	34	18	3.1	.66340
3.	Not sure	18	9		
	Total	180	100.0		

Table 4 indicates that 68% of the respondents are yes, 18% respondents are No and 9% of respondents are not sure that they like to have more lessons outside. The mean score of this statement is 3.1889 while the standard deviation is .66340

**Table 5**  
***Does your school do a lot of outdoor education?***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1.	Yes	64	34		
2.	No	87	46	1.8056	.69393
3.	Not sure	29	15		
	Total	180	100.0		

Table 5 indicates that 34% of respondents are yes, 46% respondents are No and 15% of respondents are not sure that their school does a lot of outdoor education. The mean score of this statement is 1.8056 while the standard deviation is .69393.

**Table 6**  
***Do you think you would enjoy working outdoors more often***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1.	Yes	111	59.7		
2.	No	55	29.6	2.6167	2.2898
3.	Not sure	13	7		
	Total	180	100.0		

Table 6 indicates that 59% of respondents are yes, 29% respondents are No and 7% of the respondents are not sure that they would enjoy working outdoors more often. The mean score of this statement is 2.6167 while the standard deviation is 2.28982.

**Table 7**  
***Would be able to learn new and interesting things outdoors***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1	Yes	110	59		
2	No	48	25.8	3.1	.70504
3	Not sure	22	11.8		
	Total	180	100.0		

Table No 7 indicates that 59% of respondents are yes, 25.8% respondents are No and 11.8% respondents are not sure that they would be able to learn new and interesting things outdoors. The mean score of this statement is 3.1 while the standard deviation is .70504.

**Table 8**  
***Would you feel happier and more confident working outdoors***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
<b>1.</b>	<b>Yes</b>	<b>101</b>	<b>54</b>		
<b>2.</b>	<b>No</b>	<b>55</b>	<b>29.6</b>	<b>3.1</b>	<b>.71715</b>
<b>3.</b>	<b>Not sure</b>	<b>24</b>	<b>12.9</b>		
	<b>Total</b>	<b>180</b>	<b>100.0</b>		

Table 8 indicates that 54% of respondents are yes, 29.6 % respondents are no and 12.9 % respondents are not sure that they would feel happier and more confident working outdoors. The mean score of this statement is 1.5 while the standard deviation is .71715.

**Table 9*****Do you think working outdoors would make you feel fitter stronger and healthier?***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1.	Yes	112	60		
2.	No	42	22.6	1.5	.73580
3.	Not sure	26	14		
	Total	180	100.0		

Table 9 indicates that 60% of respondents are yes, 22.6% respondents are no and 14% respondents are not sure that they think working outdoors would make them feel fitter, stronger and healthier. The mean score of this statement is 1.5 while the standard deviation is .73580.

**Table 10*****Would you be able to develop your literacy and numeracy skills working outdoors?***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1.	Yes	114	61		
2.	No	45	24	1.4833	.69696
3.	Not sure	21	11		
	Total	180	100.0		

Table 10 indicates that 61 % of respondents are yes and 24% of respondents are no and 11 respondents are not sure that they would be able to develop their literacy and numeracy skill working outdoors. The mean score of this statement is 1.4 while the standard deviation is .69696.

**Table 11*****Do you like being outdoors more than being indoors***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1.	Yes	116	62		
2.	No	44	23	1.566	1.606
3.	Not sure	19	10		
	Total	180	100.0		

Table 11 indicates that 62% of respondents are yes, 23% respondents are no and 10% respondents are not sure that they like being outdoors more than being indoors. The mean score of this statement is 1.5 while the standard deviation is 1.60690.

**Table 12*****Do you think everyone should learn to be confident in the outdoors?***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1	Yes	93	50		
2	No	47	25	1.705	.80984
3	Not sure	40	21		
	Total	180	100.0		

Table 12 indicates that 50% of respondents are yes 25% respondents are no and 21 % of respondents are not sure that they think everyone should learn to be confident in the outdoors. The mean score of this statement is 1.7056 while standard deviation is .80984.

**Table 13*****Have you enjoyed working outdoors this year?***

Sr. No	Rate scale	Frequency	Percentage	Mean	STDEV
1	Yes	114	61.3		
2	No	37	19.9	1.577	1.0829
3	Not sure	28	15.1		
	Total	180	100.0		

Table 13 indicates that 61.3% of respondents are yes, 19.9% respondents are no and 15% respondents are not sure that they enjoyed working outdoors this year. The mean score of this statement is 1.5778 while the standard deviation is 1.08291. Based on data analysis and its interpretation following findings were made.

- i. 68% of the respondents are yes, 18% respondents are No and 9% respondents are not sure that they like to have more lessons outside. Their mean score is 1.3889 while their standard deviation is .66340
- ii. 34% of respondents are yes, 46% respondents are No and 15% of respondents are not sure that their school does a lot of outdoor education. Their mean score is 1.8056 while standard deviation is .69393
- iii. 59% of respondents are yes, 29% respondents are No and 7% of the respondents are not sure that they would enjoy working outdoors more often. The mean score is 1.6167 while the standard deviation is 2.28982
- iv. 59% of respondents are yes, 25.8% respondents are No and 11.8% respondents are not sure that they would be able to learn new and interesting things outdoors. The mean score is 1.5111 while the standard deviation is .70504
- v. 54% of respondents are yes, 29.6 % respondents are no and 12.9 % respondents are not sure that they would feel happier and more confident working outdoors. The mean score is 1.5 while the standard deviation is .71715
- vi. 60% of respondents are yes, 22.6% respondents are no and 14% respondents are not sure that they think working outdoors would make them feel fitter, stronger and healthier. The mean score is 1.5 while the standard deviation is .73580
- vii. 61 % of respondents are yes and 24% of respondents are no and 11 respondents are not sure that they would be able to develop their literacy and numeracy skill working outdoors. The mean score is 1.4 while the standard deviation is .69696
- viii. 62% of respondents are yes, 23% respondents are no and 10% respondents are not sure that they like being outdoors more than being indoors. The mean score is 1.5 while the standard deviation is 1.60690
- ix. 50% respondents are yes 25% respondents are no and 21 % respondents are not sure that they think everyone should learn to be confident in the outdoors. The mean score is 1.7056 while the standard deviation is .80984
- x. 61.3% of respondents are yes, 19.9% respondents are no and 15% respondents not sure that they enjoyed working outdoors this year. The mean score is 1.5778 while the standard deviation is 1.08291.

## 5. Conclusion

In the light of the analysis of data and findings of the study, the following conclusions were drawn.

- The majority of the students are yes with the statement that they like to have more lessons outside,
- Most of the students are yes with the statement that they enjoy working outdoor more often.
- The majority of the students are yes with the statement that they would be able to learn new and interesting things outdoors.
- The majority of the students are yes with the statement that they feel happier and more confident working outdoors.
- The majority of the students are yes to the statement that working outdoors would make them fitter stronger and healthier.
- The majority of the students are yes with the statement that they can develop their literacy and numeracy skills working outdoors.
- The majority of the students are yes with the statement that they enjoyed working outdoors this year.
- The majority of the students are yes to the statement that outdoor learning is more effective for their behavior.

### 5.1. Recommendations

- In many countries outdoor education is not performing so there is a need to do outdoor learning activities for student academic achievement.
- Students show interest in outdoor learning so teachers should know what to do for student improvement for learning skills by outdoor lessons and activities.
- A teacher should know how to do outdoor lessons so that students easily grasp the concept of natural science by working outdoors in a natural environment.

- Always support students because your support is essential for the student that they easily understand the concept of natural science by outdoor lesson.
- Encourage every student to actively take part in outdoor learning activities because it is very important for their academic achievement and effective for their behavior.

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