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Influence of Abiotic Factors on Classroom Environment and Students Learning

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ABSTRACT: *Classroom is a place where student learn numerous skills, knowledge, generate new thoughts and ideas as well as increase their abilities towards affective learning. However, it is noticed school systems are running with dark, congested classrooms that affects student's learning. The present cross sectional study was designed to assess effect of abiotic component of classroom environment on the students learning. 175 students of Lahore school of nursing at The University of Lahore were considered. Convenience representative method was used. Sample size was 122 according to Slovins' formula. 41% of the respondents were agreed that proper lightning and temperature of class room plays an essential role in the learning of students and they learned in more suitable way and can enhance their comprehension field. It was noticed that student's performance and learning enhanced by properly arranging class room environment especially abiotic factors such as light, temperature and air conditions. It was concluded that students are worth of any organization and for proper utilization of their skills it is very important to focus on class room environment*

Keywords: *Learning, Effect, Environment, Students, Light, Temperature, Abiotic Factors*

INTRODUCTION

Classroom is a place where students learn numerous skills, knowledge, generate new thoughts and ideas as well as increase their abilities towards effective learning (Burke, 2013). It is evident that schools play vital role in

the development of nations, it is evident that this role of schools has great worth and play vital part in educating the upcoming age group about how to become victorious individuals of community, so every action needs to be exercised to ensure that the educational environment should help the students excel (Campbell, 2008). Physical surroundings play an important role in enhancing learning, knowledge and skills capture the attitude of students accordingly as well as a comfortable, quiet and calm environment fosters learning among students (Hadjioannou, 2007).

At the present era, as the world is progressing rapidly with the advanced technology, people want to live comfortably and it becomes more crucial in a point of learning (Campbell, 2008). Nowadays, people look for the institutions that provide a comfortable and learning environment, as it is said always sit in a quiet place when you are studying or doing written work, doing so enhances the mental ability and focus on the task (Cornelius et al., 2014). For the success of students it is mandatory to have a comfortable and quiet environment to foster their learning. Studies show that the educational atmosphere can have a significant influence on the outcome of learners and also on their emotional responses to the happening, tutor, content provided, and organization overall (Campbell, 2008). According to Wakefield et al. (2002) 30-40% schools have poor indoor air quality as reported by Government Accountability Office.

Many factors can influence the atmosphere in terms of learning and suppress imagination or do not encourage a healthy educational atmosphere which include material components like temperature, light and air. Moreover, there are untouchable components like the zeal of the classroom, the laws, or the noises inside the room (Hadjioannou, 2007). There are many factors which influence a learner's attention and attainment in the class. They may also influence the instructor's behaviour in the class. All of these factors of the classroom involve a psychological environment. The manner in which the instructors conduct their class, or the manner they handle it, can have healthy and unhealthy effects for their students (Kephart et al., 1954).

This cause and consequence is crucial for tutor to understand to know how to arrange their classroom to provide a best educational atmosphere. Some aspects affect the classroom environment and have also an effect on learning like music, lighting, temperature and convenient sitting conditions of classroom atmosphere which are crucial for building warm and embracing atmosphere thus enhancing the gaining of knowledge and reducing the feeling of helplessness and uneasiness (Lindblad, 1994). The atmosphere (light, temperature, air) of the

classroom is the topmost aspect that has a measureable influence on learner's performance (Cheng, 1994). All these factors have an important part in evaluating if the classroom is learner-centered or not. Separately each factor does not have a significant impact but collectively they may function to enhance the capability of a learner to learn. (Guardino et al., 2010). The aim of the research was to evaluate the effect of abiotic factors on the classroom environment on students learning in the students of Lahore school of nursing at the University of Lahore.

MATERIALS AND METHODS

The quantitative cross-sectional illustrative analysis method was adopted in this research to evaluate the effect of the physical components of classroom environment on the students learning. Only 175 participants of Lahore school of nursing at The University of Lahore. All the students who were outside of Lahore School of Nursing were excluded from the study. Simple representative method was adopted to gather information from the study participants. The total sample samples 122 according to which was calculated by applying Slovins' formula **n = N/1+N (E)** $^{2.}$

Statistical parameters such as age, sex, matrimonial status, qualification, etc. were examined. Percentages have been determined for categorical data whereas continuous data will be analyzed through mean and standard deviation.

Sample Size Calculation

n= N/1+N (E) ^{2}

At 95 % confidence interval

n= $175/1+175(0.05)^2$

n=122

SCHEME OF ASSEMBLING DATA

A Questionnaire was adapted from Fraser, (2012) and utilized to gather information on classroom environment. All queries were in accordance with Likert which were circulated between the learners to test the response of nursing students about the classroom environment.

STATISTICAL ANALYSIS

Data was examined utilizing SPSS version 22.0 statistical software. Descriptive statistics were used to assess the frequency, percentage, mean and standard deviation

RESULTS

For demographics analysis 3 questions were prepared and data were analyzed by finding Normality test and Reliability and Validity analysis. It was noticed that 58.2% (71) participants were with 18-25 years of age, and 41.8% (51) of 26-35 years of age. Gender wise 27% (n=33) of the respondents were male and 73% (n=89) of the respondents were female. For qualification criteria, 44.3% (n=54) of the respondents were qualification up to Post RN and 55.7% (n=68) of the respondents were qualified up to BS Nursing (Table 1). Normality was examined through skewness, kurtosis and bar graphs (Munro, 2005). Values of Knowledge, attitude and practice were distributed normally and were well in the

range from +1 to -1 thus results suggested normality of the data.

Table 1: Frequency of the participant based on their age, gender and qualification

Demographic Feature	Parameters	Frequency	Percentage
Age	18-25 Years	71	58.8
	26-35 Years	51	41.2
Gender	Male	33	27.0
	Female	89	73.0
Qualification	Post RN	54	43.6
	BSN	68	56.4

VALIDITY AND RELIABILITY ESTIMATION

Cronbach's alpha finding for four scales was utilized in the research. Cronbachs alpha is a very frequently used standard of scale reliability (Cortina, 1993). Its p-value was noticed as .602. Cronbach alpha more than 0.70 is regarded as the admissible sign of internal consistency reliability (Santos, 1999; Bryman and Cramer, 2005). The alpha values of the Classroom environment were .602 which is also acceptable which shows that the internal reliability of all variables was acceptable.

CONVERGENT VALIDITY

Convergentss validity was developed by implementing factor evaluation. Factor evaluation was carried out utilizing principle component assessment with varimax rotation. Every aspect was examined by carrying out factor evaluation. The whole instrument was comprised of a total of 10 items. The instrument comprised of 1 independent parameter and 1 dependent parameter. Criteria for factor loading were .50. Furthermore, all hypotheses of factor evaluation were satisfied. The hypothesis suggests that the KMO value should be greater than .60 and Bartlett's test must be significant. My KMO and Bartlett's test value were well above .60 so the complete principle was satisfied.

Table 2 showed that 23.8% (n=29) of the respondents were strongly agreed that Classroom environment effects on students learning and 19.7% (n=24) of the respondents were only agreed. 23.8% (n=29) of the respondents were neutral about this question. 15.6% (n=19) of the respondents strongly disagreed and 17.2% (n=21) disagreed and they show a negative response.

Table 2: Response of participants that Classroom Environment effects on students learning

Scale	Frequency	Percent
Strongly disagree	19	15.6
Disagree	21	17.2
Neutral	29	23.8
Agree	24	19.7
Strongly agree	29	23.8
Total	122	100.0

Table 3 showed the response of the respondents to the question that a cozy classroom environment helps in students learning. It was noticed that 23.8% (n=29) of the respondent's response was strongly agreed and 16.4% (n=20) of the respondent's response was agreed and 33.6 % (n=41) respondents response to neutral. 7.4% (n=9) response was strongly disagree and 18.9% (n=23) response to strongly disagree.

Table 3: Response of participants that Cozy Classroom environment helps in students learning

Scale	Frequency	Percent
Strongly disagree	9	7.4
Disagree	23	18.9
Neutral	41	33.6
Agree	20	16.4
Strongly agree	29	23.8
Total	122	100.0

Table 4 showed a response to the question that the lightning, temperature and air are required in the proper amount for students in which 17.2% (n=21) of the respondent's response was strongly agreed and 24.6% (n=30) responded as agree. 27% (n=33) of the respondent's response was neutral. 8.2% (n=10) and 23% (n=28) respondent's response was found as strongly disagree and disagree respectively.

Table 4: Response of participants that lightening, temperature and air is proper for students

Scale	Frequency	Percent
Strongly disagree	10	8.2
Disagree	28	23.0
Neutral	33	27.0
Agree	30	24.6
Strongly agree	21	17.2
Total	122	100.0

Table 5 showed students' satisfaction level from classroom environment was noticed as important factor in which 13.9% (n=17) of the respondents' responses strongly agree and 27.9% (n=34) agreed that more learning occurs with the comfortable environment. 24.6% (n=30) of the respondent's response was neutral. 4.9% (n=6) of the respondent's response was strongly disagreed and 28.7% (n=35) were responded as disagree.

Table 5: Students satisfaction level from classroom environment (Response to Questionnaire)

Scale	Frequency	Percent
Strongly disagree	6	4.9
Disagree	35	28.7
Neutral	30	24.6
Agree	34	27.9
Strongly agree	17	13.9
Total	122	100.0

Table 6 showed that distraction occurs as a result of noise and 20.5% (n=25) of the respondent's responses was strongly agree while 15.6% (n=19) of the participant's responses agreed. 30.3% (n=36) of participants found neutral against the impact of distraction due to sounds in the classroom. 12.3% (n=15) and 20.5% (n=25) of the answerers were strongly disagreed and disagree respectively and claimed that distraction of sound didn't work while taking the class.

Table 6: Response of participants that distraction of sounds does not affect student's learning in the classroom

Scale	Frequency	Percent
Strongly disagree	15	12.3
Disagree	25	20.5
Neutral	37	30.3
Agree	19	15.6
Strongly agree	25	20.5
Total	122	100.0

DISCUSSION

The classroom environment is one of the major aspects which influence students learning and for proper learning, it's very important to provide a quiet and good environment for the betterment of students learning, in my study 40% of the respondents agreed that a quiet environment is necessary for proper learning. Gilavand and Jamshidnezhad (2016) reported learning outcomes are highly affected by a noisy environment. According to Cornelius et al. (2014) people looked for institutions that provide a comfortable and learning environment, as for better performance and to accomplish daily class tasks noisy environment is a big hindrance.

In the present study, 41% of the respondents agreed that proper lighting and temperature of the classroom plays an important role in the learning of students, when there is proper light in the classroom then students can learn more suitably and can enhance their comprehension field. Gilavand and Jamshidnezhad (2016) also reported for proper learning of the student's abiotic factors such as light, temperature and air are important for a classroom environment and should need to consider.

According to Lindblad (1994), some aspects have affected the classroom environment and have also effect on learning like music, and lighting of classroom atmosphere which are crucial for building a warm and embracing atmosphere thus enhancing the gaining of knowledge and reducing the feeling of helplessness and uneasiness.

CONCLUSION

It is evident from this research study that student's performance and learning can be enhanced by improving the physical environment of the class, students are worth of any organization and for the utilization of their skills, it is very important to focus on the classroom environment.

ETHICAL CONSIDERATION

The laws and legislations established by the ethical board of Lahore School of Nursing were observed while carrying out this study and the privileges of the research subjects were honored.

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