THE RELATIONSHIP BETWEEN THE CLASSROOM LEARNING ENVIRONMENT AND ACADEMIC PERFORMANCE OF SECONDARY SCHOOL STUDENTS

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Abstract

The objective of this research was to explore the relationship between classroom learning environment, and students' academic achievement. For better understanding of the classroom environment, class size and students' self-efficacy also measured.The research was quantitative and descriptive in nature. The population of the study was the students of secondary school in Lahore. Stratified random sampling method was used to take the sample of the study. Total sample size was 600 students. The researcher used a self-developed questionnaire for students. The questionnaire was consisted of five point Likert type scale. Questionnaires was consisted of two parts, first part was consisted of demographic variables (gender, 9th class result). The validity and reliability of the instruments were ensured. Results were examined by applying both descriptive and inferential statistics. In descriptive statistics, mean and standard deviation was calculated to know the average of the students with respect to their demographic variable. In inferential statistics, independent sample t-test, One Way ANOVA, and Pearson correlation coefficient was applied. Results indicated that there was no significant difference found in mean scores of male and female sampled students regarding classroom learning environment. The strong relationship was found between class size and classroom learning environment, class size and students' academic achievement score. It is recommended that in future qualitative research studies should be conducted to determine the relationship between above discussed variables of interest.

Keywords: Classroom Environment, Self-Efficacy, Academic Performance

Introduction

Education is a social activity that takes its cues from the culture of the people it serves, whether those people are grouped together as a nation or as a community. Education serves several functions. Higher levels of education are linked over time to improved health, reduced death rates, higher earnings and economic mobility, and increased involvement in democratic processes. Due of these factors, the majority of societies mandate that kids attend school for a predetermined number of years or until they turn a specific age. A large portion of education's advantages come from teaching pupils new information or abilities that improve their capacity for decision-making, communication, and problem-solving. A significant portion of the education discussion centers on how to best support students' learning (Clark, Laing, Tiplady, & Woolner, 2013).

Complex cognitive mechanisms that are yet poorly understood are involved in learning. In order to learn a specific topic, school systems have typically established a primary mode of instruction that involves students interacting with a single individual who organizes events in a confined class size; in other words, students are placed in classes with varying numbers of other students. Furthermore, a single teacher may be instructing a small number of students—as many as several hundred (Pina, Faria, & Raty, 2013).

There are several distinct ways that a class's size might affect learning. It might have an effect on how pupils interact with one another and the social responsibility component. It might affect the amount of time the teacher spends concentrating on each student individually and meeting their unique requirements as opposed to the social event as a whole. Smaller class sizes allow for more appropriate individual thinking to be supplied on a basic level in any situation, as it is less taxing to focus on one student in a classroom (Wang & Finn, 2000). When they have smaller class sizes, teachers may choose specific methods for instruction and evaluation.

Thus, it is thought that altering the size of the class could be a useful tactic for gauging the amount of learning that occurs. It is among the easiest variables for decision-makers to

manage. In any case, a broad range of factors are responsible for the percentage of student learning. A few are to the classroom and educational setting in which the class is held, while others are related to the abilities and motivation of the individual students as well as the progressively wider systemic effects. It is essential to consider how class size matters when debating whether or not it affects achievement. Recognizing how class size affects achievement can aid in our understanding of the phenomenon, as the effects of class size might vary depending on the circumstances. The class size drop could have more important implications than what we currently see. For instance, when teachers modify their instructional strategies to take advantage of small class sizes, the teacher's pressure is lessened (Pina, Faria & Raty, 2013).

Additionally, the student-teacher ratio is consistently less than the average class size, and the difference between the two might vary depending on the jobs held by teachers and the amount of time they spend in the classroom during the school day. Student/teacher extent is fundamental from an administrative or financial perspective because it is closely linked to the amount of attention provided to each child (Woolner, Clark, Laing, Tiplady, & Thomas, 2013).
In any event, from a psychological perspective, the number of students who are physically there communicating with the teacher and with each other has some kind of impact on how much kids acknowledge. Since class size is a direct correlate of educational resources and has a significant impact on a child's development, it will be the primary focus of this study. Class size estimation is not as straightforward as it may appear. Because of student transportability, unlucky inadequacies, absenteeism, or the closeness of pullout courses for particular educational modules, it might change greatly for a single child at different events during a school day and school year (Wang, 2012).

Classroom learning environment

Comparing schools to identify factors that make one school more effective than another is one of the foundations of researches on education since Rice's pioneering work at the turn of the Century (1893/1966). Rice reluctantly concluded that testing was the best way to compare schools, and that researchers used test scores to compare schools. In 2002, Adewumi compared the socioeconomic status of students with their academic Performance, and compared the class climate with their academic achievements. This comparison is particularly difficult due to different class climatic reasons.

Teachers design learning experiences for students based on a variety of elements, but one that is particularly crucial to student development is the classroom setting. The instructor has nearly all control over this aspect of the lesson, thus it is important to use it to interest the students and help them reach their maximum potential. Across eighty junior high mathematics classes in several nations, researchers concentrated on five distinct components of the classroom learning environment: difficulty, speed, satisfaction, diversity, and curiosity. Measures examined variables related to the learning environment in the classroom, the qualifications of the teachers, and other predictor variables. This shows the dynamic components that go into making a learning experience for kids. As a result, their most important discovery was that official teacher authorizations had ver y little bearing on a teacher's efficacy. The discovery that teacher effectiveness is so important in the classroom could mean that the variation in teacher performance was more related to the learning environment they established in the classroom than it was to their qualifications or other factors. Because of this, a teacher's credentials might not always be a reliable indicator of the kind of learning environment they would foster in the classroom, underscoring the significance of the setting for student learning (Wang, 2012).

Just as significant as the environment that the instructor tries to create in the classroom is how the students really perceive it. It might not help the learning process if students do not have a favorable perception of their surroundings. Teachers need to remember that students' academic performance can also affect how they perceive the surroundings, therefore it's important to provide a supportive learning environment. This was discovered in a study that looked at how elementary kids in the fourth, fifth, and sixth grades perceived their classroom learning settings and how it would affect overall achievement. According to Dee and West (2011), the study discovered that almost all students had a good perception of their classroom learning settings.

Effects of class size on students' Performance

In promoting an active classroom, educators need to be aware of the impact of stress on students. Excessive stress has been identified as the main cause of impaired school learning and teachers must understand the many potential threats to students and the stress response of the brain. The anthropological literature identifies several major threats to human survival: hunger, disease and depletion. A well-developed brain has been shown to help deal with these threats. Education is seen as a complex and adaptable mechanism that protects students from the three of threats that limit their ability to survive. Although these threats appear to be outdated for human survival, they are considered fundamental issues on the basis of the learning process.

This study looks at two dimensions of classroom engagement: disruptive conduct and involved behavior. The term "classroom engagement" describes how involved and persistent pupils are in both academic and extracurricular school activities. When it comes to the beginning and completion of learning activities, students' effort, focus, and perseverance are characterized as complex behavioral engagement. When pupils act in a way that aggravates the teacher or interferes with learning, it is referred to as disruptive behavior. There is a considerable difference between school dropouts, successful school completers, and unsuccessful school completers based on classroom participation.

The threat has long been used as a weapon to regulate human behavior. If schooling is not mandatory, then the threat is less important. In 2000, however, students had to face the threat of legal schooling. According to researchers respond to his body, for students to threaten or feel an emphasis on physical reactions, including the immune system of depression, large muscles, blood coagulation, increased stress force incentives blood. This reaction has led to problems in schools. It has been shown that chronic stress prevents students from finding out what is important or not. Stress inhibits the brain and its ability to form long term memory to short-term memory. The emphasis on students is also more affected by the disease, which helps explain a vicious circle. More school stress leads to more diseases, leading to unhealthy behavior in the class. This has led to a reduction in educational outcomes.

The sense of self-efficacy affects motivation, learning and academic achievement (Angrist & Lavy, 1999). Therefore, increase in the students ' self-efficacy is crucial to their success. As a teacher, we can stimulate critical thinking and understanding and improve students ' sense of self-efficacy through open questions, open dialogue, active strengthening, and improving usability and teaching strategies and vice versa. The first perhaps easiest way to develop confidence and participation of students in the class is to make them available outside the classroom. Teachers should have regular office hours suitable for students with different scheduling needs. However, they should also arrange individual meetings outside these hours. Some students may need to more help building their understanding and confidence in the subject and themselves.

In academic activities, the degree to which students believe their teachers are promoting social contact among themselves is known as the teacher promotion of social interaction. During whole class instruction, students can share ideas with one another; in small group activities, they can collaborate; or during solo seatwork, they can ask and offer informal assistance to one another. Over time, it has been discovered that classrooms with high levels of social interaction among students—where professors actively involve students in the learning process by encouraging autonomy and the expression of their ideas—are excellent indicators of student engagement.

The degree to which students believe their teachers promote respect among themselves is known as the teacher's promotion of mutual regard. Respect for one another should be emphasized in order to foster an atmosphere where students may interact well with one another and feel confident in their social interactions. Teens who feel appreciated and respected in the classroom report having stronger aspirations for closeness, responsibility, performance, and self-efficacy and mastery.

In Pakistan, class size is the most important factor which effect the students' Performance at school level. As a result of this typical felt require and the essentialness of class size in demonstrating learning process, present study is an undertaking to explore the relationship of class size with classroom learning environment, class size with students' self-efficacy, class size with student academic achievement.

Aim of the Study

The focus of the study was to determine the relationship between the classroom learning environment and students' academic performance. For better understand the classroom environment, the class size and the self-efficacy of students also measured.

Research Methodology

For this study, a technique known as quantitative research was adopted. A questionnaire with a cross-sectional survey design was employed to gather data. As a result, the study design was correlational. The population of the study was comprised of all the male and female 10th grade public sector secondary school students in Lahore. Two-stage sampling technique was used to select the sample. At first stage, the researcher selected 20 (10 male and 10 female) secondary school from district Lahore through non-proportionate stratified random sampling technique. Furthermore, each selected stratum was divided into two strata (rural and urban). Secondly, the researcher selected 30 students from each selected school by using simple random sampling technique without replacement method. Therefore, the sample was comprised of 600 students of 10th grade enrolled in secondary schools of district Lahore. Student questionnaire as instrument was used in this study. Instrument was developed under the guidance of supervisor. Three research professionals were consulted to ensure the validity of the instrument. Students' responses on a five-point Likert scale questionnaire were gathered for the survey. The demographic data collected from the respondents in a questionnaire comprised the gender, locale, and ninth class score of the students.

Results

Table 1
Comparison of Marks Obtained by Different Class Size Students Using ANOVA

Groups	N	Mean	SD	Df	F	Sig.
Large	242	2.73	1.738	2	836.258	.000
Medium	179	7.66	.473	599		

Small	179	5.54	.919	597
Total	600	5.04	2.414	

Table 1.1
Post Hoc Test for Comparison among Small classes, Medium classes, and Large classes students' Academic Achievement

Dependent Variable	(J) Group	(I) Group	Mean Difference (I-J)	Sig.
Achievement Scores	Medium	Large	4.938	.000
		Small	2.123	.000

One way analysis of variance (ANOVA) was conducted to explore the effect of class sizes on students' achievement. Participants were divided into three groups (Group 1: large classes; Group 2: medium classes; Group 3: small classes). There was a statistically significant difference at the $p < .05$ level in these groups: $F (2, 597) = 836.258$, $p = .000$. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 (M = 2.73, SD = 1.738) and Group 2(M = 7.66, SD = .473) was significantly different from Group 3 (M = 5.54, SD = .919). On the other hand Group 3 significantly from Group 1 and Group 2. Hence constructed conclusion is that medium classes have significantly better scores than large and small classes.

Table 2
What is the difference between male and female students' perception regarding classroom learning environment at Secondary school level?

Groups	N	Mean	SD	Df	F	Sig.
Large Group	242	52.25	7.57	2		
Medium Group	179	69.24	2.73	597	489.145	.000
Small Group	179	56.70	4.48			
Total	600	58.64	9.08	599		
Post hoc						

Table 2.1
Post Hoc Test for Comparison among Small classes, Medium classes, and Large classes students' Classroom learning environment Score

Dependent Variable	(J) Group	(I) Group	Mean Difference (I-J)	Sig.
Classroom learning environment	Medium	Large	16.99	.000
		Small	12.54	.000

One way analysis of variance (ANOVA) was conducted to explore the difference among different class sizes on Classroom learning environment. Participants were divided into three groups (Group 1: large classes; Group 2: medium classes; Group 3: small classes). There was a statistically significant difference at the p < .05 level in these groups: F (2, 597) = 489.145, p = .000. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 (M = 52.25, SD = 7.57) and Group 3 (M = 56.7, SD = 4.48) was significantly different from Group 2 (M = 69.24, SD = 2.73). On the other hand Group 2 significantly better in terms of class room environment from Group 1 and Group 3. Hence constructed conclusion is that medium classes have significantly better scores than large and small classes.

Table 3
What is the difference between male and female students' perception regarding student self-efficacy and classroom learning environment at Secondary school level?

Gender	N	Mean	SD	t	Df	Sig. (2-tailed)
Female	260	23.919	1.520			
Male	340	23.921	1.562	-.214	598	.831

An independent-samples t-test was conducted to compare the total scale score for males and females. There was no significant difference in scores for females (M = 23.919, SD =1.520) and males (M = 23.921, SD = 1.562; t (598) = -214, p = .831, two-tailed). This table shows that there is no significant difference found in term of demographic variable gender regarding student self-efficacy and classroom learning environment.

Table 4
Is there any significant relationship between class size and students' self efficacy, classroom learning environment, class size and students' academic achievement at Secondary school level?

Group		Marks of small classes	Marks of Medium Classes	Marks of Large Classes
Self efficacy	Pearson Correlation	.826**	.683**	.595**
	Sig. (2-tailed)	.000	.000	.000
	N	600	600	600
Climate	Pearson Correlation	.831**	.661**	.589**
	Sig. (2-tailed)	.000	.000	.000
	N	600	600	600

N =600 and p < .000

The relationship between perceived self efficacy (as measured by the questionnaire) and last exam marks (as informed by students themselves) was investigated using Pearson correlation coefficient. There was a strongest, positive correlation from all groups between the two variables self-efficacy and small classes, r =.826. There was a stronger, positive correlation from all groups exist between the two variables self-efficacy and medium classes r =.683. There was a

strong, positive correlation from all groups exist between the two variables self-efficacy and large classes r =.595.

It was also presented in table that there was a strong, positive correlation among all groups between the two variables classroom learning environment and small classes, r =.831. There was a stronger, positive correlation from all groups exist between the two variables classroom learning environment and medium classes r =.661. There was a strong, positive correlation from all groups exist between the two variables classroom learning environment and large classes r =.589.

Discussions

The aim of study was to determine the relationship of class size with classroom learning environment, class size and students' self-efficacy, class size and students' academic achievement at secondary level. This study shows that classroom learning environment, student self efficacy, and academic achievement affect by the class size. In three of the groups of class size, small group (less than 20 students), medium group (21-30 students) and large group (above 30 students) shows positive correlation of class climate and self-efficacy. This predicts that students perceived proper care from the teachers in different class sizes. However, small groups show significantly better results than other two groups. Agrees with the findings that small size group have better affect on climate and self efficacy. Nonetheless, some argue that small classes can be an effective teaching strategy for students all the way through high school, with a focus on lower-achieving secondary students.

The results supported a link that has been shown in other studies: students who felt more confident in themselves scored higher. Nonetheless, it was discovered that self-efficacy and grades are substantially greater for both genders. This could mean that they were both encouraged and supported. Furthermore, due of cultural expectations, guys might have higher levels of self-efficacy. Contrary to most literature, our studies did not show self-efficacy to be a predictor of accomplishment.

Gender differences were not the primary focus of this investigation at first. But in light of these results, it's obvious that more research on gender disparities is required. The research indicates that in secondary school, boys and girls learn differently. For instance, because to their greater rates of classroom involvement, boys may outperform girls in math (Van de Gaer, Pustjens, Van Damme, & De Munter, 2008). This connects to the idea that guys' performance in math is influenced by society more than girls'; if boys feel more comfortable participating in the subject, it's possible that they will feel more confident. Moreover, gender disparities have been observed in secondary school performance, attainment goals, and classroom perception (Gherasim, Butnaru, & Mairean, 2013). The gender differences that were discovered are supported by all of these data, which are pertinent to the study's findings. Merritt (2012) discovered, however, that there could not be any appreciable variations in worry and accomplishment between males and girls. Further evidence for the need for greater research in this area is provided by the fact that these findings contradict previous studies in the field.

Conclusion

The objectives of this research was to explore the relationship between the classroom learning environment and students' academic achievement. The study was correlation-based and quantitative. The study's population consisted of Lahore secondary school students. The

study's sample was selected using the stratified random sampling technique. The findings showed that, in terms of self-efficacy and the learning environment in the classroom, there was no discernible difference in the mean scores of the male and female sampled students. The strong relationship was found in self efficacy score of small, medium and large classes. It is concluded that small class size students' self efficacy and classroom learning environment score is higher than medium and large classes' students.

Recommendations

The recommendations of the study were as follow.

1. The administration and teachers may work together to decrease class size which may improve their level the quality of teaching.
2. It is difficult but not impossible to change the system at of education once so there is need of more teachers, teachers training, and supportive environment in classroom.
3. It is recommended that the study may be useful for school teachers to planning different suitable teaching strategies to increase the level of students learning, self efficacy and promote classroom learning environment.
4. Additional studies on learner perseverance; more thorough assessments of programs that use class size as a supplement to traditional learning; wider examinations of contemporary approaches to teaching and learning regarding class size.
5. Despite the fact that the relationship between class size and student achievement has been extensively studied, more research is advised. Prior to making decisions about class sizes or offering incentives to school districts that maintain specific class sizes, policy makers should have access to up-to-date, trustworthy research data.

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