An Inquiry into the Influences of Overcrowded Classroom on the Academic Achievement of Students at Secondary School Level in Khyber Pakhtunkhwa

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Abstract

This study aimed to explore the influences of overcrowded classroom on the academic achievement of students at secondary school level in Khyber Pakhtunkhwa. Objective of the study was to explore the effect of overcrowded classroom on the academic achievement of students. Mixed method approach was applied for this research study. Sample of the study consisted of 600 10th grade students, 143 secondary school teachers and 30 principals selected through multistage cluster and simple random sampling technique. Quantitative data collected for the last five years result (2013-17) of 10th grade students from the Gazette book and also through self-developed questionnaires. Items of the questionnaire were developed on the basis of the problems of overcrowded classrooms with five point's Likert type rating scale. Qualitative data collected from the principals through interview. The results showed that there was a very weak correlation between the 10th grade students enrolled and their pass percentage in the SSC (A) exams for the years 2013-17. The study showed that there was much agreement between the views of teachers, students and principals on the issue. It was concluded from the current study that an overcrowded classroom can influences the student's academic achievement. The study confirmed that all the sampled secondary schools were lacking enough classrooms, teaching staffs and mostly the classrooms were overcrowded. It was recommended that class size may be of 35 students, shortage of teaching staffs and additional classrooms may be constructed to overcome the problem of overcrowded classroom.

Introduction

In Pakistan teacher-students ratio is 1-40 (one teacher for 40 pupils) but public schools in KP province have exceeded the limit of forty students in a single classroom per teacher. The maximum recommended number of students is 35 in a single classroom per teacher but the classroom may accommodate forty (40) students.

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There may be separate seat and desk for each and every student. Each classroom will be arranged in such a way to provide more space between the rows for the easy movement of students and teachers. The seat will be provided with adequate space and there will be no hurdle for the teacher and students in the classroom (Education Code, 1935).

Overcrowding in classrooms is a common problem in the existing public schools of KP, a province of Pakistan. Rapid growth in school age population and stress on high enrollment of students in the existing public schools causes overcrowding in the classroom. With poor and inadequate planning for the anticipated growth in school age going groups, overcrowding in classrooms, now became an everlasting feature of setting at all levels of the education system.

As a teacher with personal experience the researcher come across many challenges in the classroom and one of them is dealing with large numbers of students in the classroom. The researcher also felt that as a teacher the evaluation process is also difficult because of overcrowding in the classroom. The researcher felt that overcrowded classroom poses evaluation and instructional problems.

Objective of the Study

The objectives of the study were to explore the effect of overcrowded classroom on the academic achievement of students at secondary school level and also to find out the views of the students and teachers regarding writing activities, concentration on lesson, interaction with teacher, following teacher's instruction, focus on teacher's lecture, paying individual attention, engaging student in learning process in overcrowded classroom.

Literature Review

Teacher when teaching in overcrowded classroom faces a lot of challenges such as instructional, assessment, management and discipline problems. They further added that students show disruptive behavior in overcrowded classrooms. Students cannot participate in education activities due to noisy and restive environment which negatively affect the student's academic achievement (Benbow, Mizrachi, Oliver & Moshiro, 2007).

Many studies have measured educational efficiency in terms of performance suggested that larger classes have negative effect on the overall achievement of students. Teaching and learning were tough job in overcrowded classroom. All those teachers who were teaching to heavy classes, ranging from 60 to100 students per section were not given proper attention to students they deserved. Teacher spends most of the instruction time on controlling the students and classroom management. It affects the academic achievement of the students. And

the students showed low academic achievement in their classes (Abagi, & Sifuna, 2006).

The academic achievement of student was negatively affected by large classes. It was noted that there was an inverse relationship between the class size and the student's grades. As the number of student increases in a single classroom the grade of the student decreases. And the effect of class size on grades varies across different categories of students (Dillon&Kokkelenberg, 2000).

In overcrowded classrooms, teachers cannot give full attention to each and every student because of noisy environment. It was noticed that overcrowded classrooms result quarreling, pushing, teasing and beating and this can pose negative impact on classroom's disciplinary measures. It is difficult for one teacher to meet with such situations in the classroom. Teacher spends precious lesson time in maintaining discipline in the overcrowded classroom while less time is allocated for teaching-learning process which can influences the academic achievement of the students (Imtiaz, 2014).

It was possibly difficult for the teacher to provide quality education where students' teacher ratio is high acknowledged in a research study. It means quality education is difficult to be provided in an overcrowded classroom which is also a factor responsible for decline of standard of education and thus affects the academic achievement of students (Ipinge, 2005).

A research study conducted by Kassile concluded that student-teacher ratio had a statistically negative effect on pass rates of students at primary school leaving examination in Mainland Tanzania. Student-teacher ratio plays an important role in upraising the achievement of student. Smaller the student-teacher ratio higher will be the success rate of learner. Higher student-teacher ratio means, a ratio crosses the recommended ratio proposed by the government (Kassile, 2014).

Overcrowded classroom negatively affects the achievement of the student and usually it lowers the achievement rate of students. This means that increasing a class of 10 to 20 will have greater negative impact on the grades than increasing a class of 200 to 210. Thus, overcrowded classroom is one of the factors that affect the academic achievement of student (Keil & Partell, 2009).

A research study claimed that overcrowded classrooms in South Africa were noisy and students find it too difficult to get effective and proper involvement in learning activities. It is impossible for those learners who want to get more attention from their teachers. The noisy environment, irregular seating arrangement in a classroom, and no attention from the teacher, affects the academic achievement of student (Kiggundu & Nayimuli, 2009).

Research Methodology

This study utilized the convergent parallel design, a mixed-method design. This design was considered appropriate for this study because it gives the researcher the opportunity to use both quantitative and qualitative data in order to find better solution of the problem. This design provides a wide scope for obtaining information. In this study the researcher obtained two sets of data, analyzed independently and each set of data then compared.

Population of the Study

The population for this study comprised all the students, teachers and principals of all the secondary schools for boys in all the twenty-six districts of Khyber Pakhtunkhwa, a province of Pakistan.

Sample and Sampling Technique

A sample of 600, 10th grade students (20 students from each school), 143secondary school teachers (5, SSTs from each school), 30 principals/headmasters (1 from each school) selected randomly from the thirty (30) selected secondary school for boys in the selected six districts of Khyber Pakhtunkhwa, a province of Pakistan. The researcher used multistage cluster and simple random sampling techniques for the study as the population of the study was very large and scattered. All the twenty-six (26) districts of Khyber Pakhtunkhwa, were grouped into three main regions (clusters/zones) based on the climatic map of Khyber Pakhtunkhwa. The researcher used a random sampling technique and selected six (06) districts from all the three cluster regions (2 districts from each cluster region) since each district in all the regions had equal chance to be selected. Again, the researcher utilized a simple random sampling technique and selected thirty secondary schools for boys (5 secondary schools from each sampled district). The researcher randomly selected six hundred (600) 10th grade students (Twenty 10th grade students from each sampled secondary school) from all the thirty (30) secondary schools for boys. Similarly, the researcher selected one hundred and forty-three (143) secondary school teachers (Five SSTs from each sampled secondary school) from all the thirty (30) secondary schools for boys. The researcher selected thirty (30) secondary school Principals/headmasters (one from each sampled secondary school) from all the thirty-secondary school for boys.

Data Collection Tools

Quantitative Data Collection Tools: Questionnaires were used as tools for quantitative data collection. Data collected through questionnaire constructed for 10th grade students and also for secondary school teachers. While secondary data obtained from the gazette books provided by BISEs to all secondary schools. It

was collected as the number of 10th grade enrolled students (Independent Variable) and their pass percentage in the SSC annual examinations for the years 2013-17, (Dependent Variable).

Qualitative Data Collection Tools: Structured interview tool was used for qualitative data collection. The researcher employed the structured interview schedule for data collection to analyze the issues in depth and to understand the reason behind participant's response. The interview session was composed of eight questions.

Validity and Reliability of the Questionnaires

For data collection a self-developed questionnaire was constructed. The questionnaires were developed in the light of the objectives of the study for obtaining information from the respondents with five-points Likert type rating scale of strongly disagree, disagree, undecided, agree and strongly agree. The questionnaires were validated by educational experts. After meeting the needed modifications, the final versions of the tool i.e. Student's questionnaire and teacher's questionnaire each one consisted of thirty (30) items was found satisfactory as a research tool for this research study. The questionnaires were then piloted on 4 secondary school teachers and twenty 10th grade students to check the reliability. The Cronbach Alpha value of 0.94 for twenty 10th grade students and 0.89 for secondary school teachers, questionnaires were alike to the pilot test 0.94 and 0.89 which indicated that the instrument was reliable. This index was greater than 0.5. Consequently, the instrument was regarded as reliable and appropriate.

Data Analysis

Quantitative Data Analysis: The responses of the respondents obtained from the data collection tool processed by using computer software statistical packages for social science (SPSS, 23). A descriptive statistical technique was applied for counting frequencies, percentages, mean, median, and mode. Mean, median and mode was used to summarize the data. To explore the effect of overcrowded classroom on the academic achievement of students, SSC annual examination results (pass percentage) of 10th grade students for the last five years i.e. 2013-17were collected from the gazette books provided by BISEs to the secondary schools for the sampled secondary schools. It was the total number of 10th grade enrolled students (overcrowded classroom) and their pass percentage in the SSC annual examination for the years 2013-17 (academic achievement) (See Appendix E for information). For quantitative data analyses, Pearson correlation and descriptive analyses were conducted.

Results

Table 4.1(a) *Total Numbers of 10th Grade Enrolled Students and Their Pass Percentage in the SSC (A) Exams for Session 2013-17*

Combined Detail of Thirty Secondary Schools			
Session	Total Number of 10th Grade Enrolled Students	Total Number of Pass Students	Pass Percentage
2013-17	17715	14364	81.08

Table 4.1(a) indicates total number of 10th grade enrolled students and their pass percentage in the SSC (A) exams for session 2013-17for thirty Secondary schools. Out of 17715 students, total 14364 (81.08%) students were passed in the SSC (A) exams for session 2013-17 for combined thirty Secondary schools.

Table 4.1 (b) *Correlation between Variables (10th Grade Enrolled Students and Their Pass Percentage in the SSC (A) Exams for Session 2013-17for Combined Thirty Secondary Schools.*

		Total Number of 10th Grade Enrolled Students	Pass Percentage of 10th Grade Enrolled Students
Total Number of 10th Grade Enrolled Students	Pearson Correlation Sig.(2-tailed) N	1 5	-0.180 0.772 5
Pass Percentage of 10th Grade Enrolled Students	Pearson Correlation Sig.(2-tailed) N	-0.180 0.772 5	1 5

Table 4.1 (b) shows Pearson correlation between the variables which is -0.180. It indicates a very weak negative correlation between the total number of 10th grade enrolled students and their pass percentage in the SSC (A) exams for session 2013-17 for combined thirty secondary schools. The relationship between the variables is negative because, as the number of students in a single classroom (First Variable) increases in the pass percentage of the students in the SSC (A) exams (Second Variable) decreases.

Analysis and Interpretation of the Student's Questionnaire

Table 4.2 *Views about Academic Achievement in Overcrowded classroom*

Q.N0	SDA	DA	UD	A	SD	N	Mean	Median	Mode	S. D

Q. No	SDA	DA	UD	A	SD	N	Mean	Median	Mode	S. D
01	52	88	00	198	262	600	3.88	4.0	5.0	1.33
02	61	117	00	194	228	600	3.73	4.0	5.0	1.40
03	73	121	00	197	209	600	3.61	4.0	5.0	1.43
04	70	110	00	221	199	600	3.64	4.0	5.0	1.40
05	75	132	00	186	207	600	3.60	4.0	5.0	1.44
06	75	111	00	201	213	600	3.66	4.0	5.0	1.45

Table: 4.2 reveals the responses of students for question no 1 (M=3.88, Median=4, Mode=5, S.D=1.33), for question no 2 (M=3.73, Median=4, Mode=5, S.D=1.40), for question no 3 (M=3.61, Median=4, Mode=5, S.D=1.43), for question no 4 (M=3.64, Median=4, Mode=5, S.D=1.40), for question no 5 (M=3.60, Median=4, Mode=5, S.D=1.44) for question no 6 (M=3.66, Median=4, Mode=5, S.D=1.45). On the whole the views of the students regarding the effect of overcrowded classroom on the academic achievement of students is in the range of agree. If evaluating their mean scores across all dimensions of overcrowded classroom and its effect on the academic achievement of students, their mean scores remain in the range of agree.

Analysis and Interpretation of the Teacher's Questionnaire
Table 4.3 *Views about Academic Achievement in Overcrowded Classroom*

Q. No	SDA	DA	UD	A	SD	N	Mean	Median	Mode	S. D
01	13	29	00	77	24	143	3.48	4.0	4.0	1.24
02	11	10	00	82	40	143	3.9	4.0	4.0	1.11
03	15	47	00	51	30	143	3.23	4.0	4.0	1.37
04	14	54	00	45	30	143	3.16	4.0	4.0	1.38
05	18	46	00	51	28	143	3.1	4.0	4.0	1.39
06	17	50	00	52	24	143	3.19	4.0	4.0	1.38

Table: 4.3 shows the responses of teachers for question no 1 (M=3.48, Median=4, Mode=4, SD=1.24), for question no 2 (M=3.90,Median=4, Mode=4, SD=1.11), for question no 3 (M=3.23, Median=4, Mode=4, SD=1.37), for question no 4 (M=3.16,Median=4, Mode=4, SD=1.38), for question no 5 (M=3.17, Median=4, Mode=4, SD=1.39) for question no 6 (M=3.19,Median=4, Mode=4, SD=1.38). On the whole the views of the teachers regarding overcrowded classroom and its effect on the academic achievement of students at secondary school level is in the range of agree. If evaluating their mean scores across all dimensions of overcrowded classroom and its effect on the academic achievement of students, their mean scores remain in the range of agree.

*Qualitative Data analysis***:**

Analysis and Interpretation of Interviews Conducted with Principals/Headmasters

All the principals/Headmasters of the sampled thirty (30) public secondary schools gave their views regarding academic achievement of students in an overcrowded classroom. In an overcrowded classroom proper individual attention is not given to student by the teachers. Students sitting on the backbenches cannot hear their teachers. Teaches are also unable to ask questions from all the students in overcrowded classrooms. There is weak or no interaction between the teacher and students in overcrowded classrooms. There is inverse relation between the number of students and their academic achievements. As the number of students' increases in the classroom, it effects i.e. academic achievement of the students' decreases. In overcrowded classrooms the needs of the students are neglected. Teacher cannot give more time to help all the students. Thus full attention is not given to students. In overcrowded classrooms teachers are not caring their students. In overcrowded classrooms the students were unable to do their activities properly. In overcrowded classrooms teachers were unable to explain the course content in detail. Most of the teachers were unable to check student's kits. Most of the teachers were unable to engage students properly in daily lesson. It was difficult for teacher to organize group discussion in overcrowded classrooms. And thus, desired outcome cannot be achieved. Overcrowding in classroom negatively affected the academic achievement of students. Overcrowding in classrooms is serious issue and it affects the result of the school.

Discussion

From the analysis of data, based on the first research question asked in the study, the results indicated that overcrowded classroom have a weak negative effect on the academic achievement of students at secondary school level. Table 4.1 b reveals that Pearson's correlation was -0.180 for combined thirty (30) secondary schools. It indicates a very weak correlation between the variables. The relationship between the number of students in a single classroom (First Variable) and their pass percentage (Second Variable) in the SSC (A) exams for the years 2013-17 was negative because, as the number of students in a single classroom increases the pass percentage of the students in the SSC (A) exams for the year 2013-17 for the combined thirty (30) secondary schools tends to decrease. It shows that larger the number of students in a single classroom the lower the academic achievement of the students. Overcrowded classroom is the major factor responsible for the academic achievement of students at secondary level. The results are in line with the studies of Adeyemi (2008) who argued that those schools where the numbers of students

were thirty-five (35) in a single classroom showed better results than those schools where the classrooms were overcrowded. In the same vein, the finding of this study is in relation with the work of Dillon and Kokkelenberg (2000), who found out in a research study that the academic achievement of student was negatively affected by large classes. It was noted that there was an inverse relationship between the class size and the student's grades. As the number of student increases in a single classroom the grade of the student decreases. And the effect of class size on grades varies across different categories of students.

Conclusion

From the findings of the study it has been concluded that there was a very weak correlation between the number of enrolled students (overcrowded classroom) and their pass percentage in the SSC (A) exams (academic achievement) for the years 2013-17

It is concluded from this research study that overcrowding in classroom has adverse effect on the academic achievement of students at secondary school level. It was considered as major factor responsible for the low academic achievement of the students.

Recommendations

The following recommendations were made for the administration and policy makers.

It is recommended that it would be worthwhile, if number of students in single classroom may not exceed than forty (40), but suggested thirty students per single classroom to ensure the academic achievement of students at secondary school level. These will help to motivate students towards their academic achievement.

Additional classrooms are needed to be constructed in the existing public secondary schools to accommodate students properly to disciplinary behavior. Classrooms are needed to be designed in such a way to meet the demands of the students to avoid disorder of seating arrangement. Classrooms should be built with up-to-date facilities.

Teaching staff are needed to be increased to overcome the deficiency of teaching staff. Teachers students' ratio may not be exceeded than 1:40, but suggested 1:30. Strict rules are needed to be implemented during admission to alleviate overcrowding in the classrooms.

Second shift may be started in the existing public secondary schools to overcome the problem of overcrowding in the classrooms.

Proper planning is needed to control population as population is the main cause of overcrowding in the classrooms.

References

Abagi, O. & Sifuna, D. N .(2006). "Report of the Final Evaluation of Tusome Vitabu Project (TVP) in Tanzania", Dar-es-Salaam, Care International-Tanzania.

Adeyemi, T.O. (2008). The influence of class size on the quality of output in secondary schools in Ekiti State, Nigeria. *American-Eurasian Journal of Scientific Research, 3* (1): 7-14.

Benbow J, Mizrachi A, Oliver D & Said-Moshiro L (2007).*Large class sizes in the developing world: What do we know and what can we do?* Available at http://www.equip123.net/docs/E1LargeClassrooms.pdf.Accessed 5 December 2014.

Imtiaz S (2014). Exploring strategies for English language teaching of Pakistani students in public sector colleges. *Research Journal of English Language and Literature (RJELAL)*, 2(2):247-253. Available at http://www.rjelal.com/ 2.2.14/247-253.pdf. Accessed 25 April 2016.

Ipinge, S. (2005). Quality education and access to education in Namibia: Goals of education after years. *Education Review, 3*(1), 115-125.

Kassile, T. (2014). Pass rates in primary school leaving examination in Tanzania: Implication for efficient allocation of resources. *South African Journal of Education*, *34*(2), 1-21. Retrieved from http://www.scielo.org.za

Kiggundu E & Nayimuli S (2009). Teaching practice: a make or break phase for student teachers. *South African Journal of Education*, 29(3):345-358.Available at http://www.sajournalofeducation.co.za/index.php/saje/article/view/129/160. Accessed 25 April 2016.