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Effects of Class Size on Classroom Management: A Study on Elementary Schools

Saira Shireen [*] | Samreen Mehmood [†] | Mehwish Habib [‡]

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Abstract: *The main aim of this study was to see the relationship between class size and classroom management), Classroom management (CRM) for comparing teaching in overcrowded classes versus small sized classrooms. Primary data were collected from same teachers who had the experience of teaching both overcrowded classes and small sized classes. For overcrowded classes, it was hypothesized that teachers can very effectively maintain discipline in the small-sized classrooms as compared to the overcrowded classes. In case of class room management (CRM), it was hypothesized that overcrowded classes do not allow good class room management compared to small sized classes. Reliability tests were carried out to check consistency of the answers from respondents on all seven variables, in both the overcrowded and small-sized classes. The test chornbachs' alphas yielded acceptable to very good range. The mean values of variable Classroom management (CRMO) was estimate at 4.04. On the basis of descriptive statistics coupled with One-sample t test, this research concluded that majority of the teachers had found that overcrowded class rooms were not appropriate for Classroom management (CRMS). Considering the conclusions, the study recommends that classes should not be overcrowded to the best possible circumstances.*

Key Words: Classroom Management, Class Size, Elementary Schools, Education

Introduction

According to Carbone (1999), an ideal strength is 30 student, as the class will not be noisy, teachers will be audible and they could keep eye contact, there will be no complaint of dust, smell, suffocation or invisibility of blackboard. To achieve the desired output, normal class size is preferred as it maintains balance between teachers and students. Teachers can keep check and balance upon every student and slow learners or struggling students cannot be ignored. Amarat (2011) added that in overcrowded classes teacher may face several problems like vandalism theft, failure of educational facilities, destruction of property, etc. This can cause the failure of that particular teaching learning process. (Blatchford *et al;* 2011). Wilson, (2006) found that smaller classes are very effective for students learning & promote their achievements because students gets individual attention of the teachers The large class size is a relative variable that has caused generally contrary effects on students learning, mediated primarily by lower students level of engagement.

Statement of the Problem

The aim of this study is to investigate whether there is a connection between the number of students in a class and classroom management. This researcher intends to examine any variations in the progress and achievement levels of the two extremes of large and small classes.

Objective of the Study

i. To study the effects of class size on academic environment.

[*] MPhil Scholar, Department of Education, City University Peshawar, KP, Pakistan.
[†] Assistant Professor, Department of Education, Abdul Wali Khan University, Mardan, KP, Pakistan.
Email; samreen@awkum.edu.pk
[‡] Demonstrator, Department of Education, Abdul Wali Khan University, Mardan, KP, Pakistan.

Research Questions

ii. Is there any relationship between class size and classroom management?
iii. What are the basic criteria of a standard class size?

Significance of the Study

Results of the study will be utilized by the educational policy makers, educational administrators, co-coordinators, unit writers and future coming students in their respective fields of education.

Literature Review

Very little is known about class size thresholds below or above which effects on classroom processes are evident. Shapson *et al*, (1980) compared a number of different class sizes but when the range of class sizes is wide, as it is in the UK, this kind of design can become unwieldy. It is therefore potentially more insightful and valid to employ naturalistic studies within which class sizes vary as in the real world of education, and which therefore allow estimates of effects across the full class size distribution.

Finn *et al.* (2003) argued that the effects of class size on pupils' classroom engagement are more important than those on teaching. There is then dispute about the balance of effects on teacher pupil interactions and pupil classroom engagement and this paper compares in a systematic way the effects of class size on each. More information on the specific aspects of classroom engagement and teacher to pupil interactions studied is given later in this introduction, after the other key features of the study are described. It is said that more has been written on the effects of class size on academic achievement than on any other issue in education (Carbone and Greenberg 1998), yet very little research has been conducted on gathering evidence of effective teaching practices in small classes. There has been a tentative model of teaching suggested in small classes based on three aspects: better knowledge of students, more instructional time and teacher satisfaction and therefore the use of a more individualised pedagogy in the classroom (Blatchford 2003; Blatchford and Mortimer 1993; Finn and Pangozzo 2003). As seen from previous research on the possible advantages of class size reduction, smaller classes may well give teachers more time to attend to students' individual learning and social needs which may, in turn, promote greater use of collaborative work such as group and pair work, the benefits of which have been well documented (Blatchford, 2003). However, a problematic aspect for researchers in this area is the absence of a clear definition of what effective teaching in smaller classes might look like.

Researchers have found that objectives of a learning process can be achieved When class size is reduced to less than 20 students. All over the world educationists believed that small classes are beneficial for pupil because teacher can pay individual attention to all the students specially at secondary level where the content level is more challenging.

Filby *et al.* (1979) studied teacher pedagogy in small classes, and found that: Teachers were more able not only to complete their lessons in smaller classes, but to develop their lessons in more depth. Teachers can finished syllabuses more in time and were able to provide additional development activities.

Research Methodology

Population and Sampling

The population of the study comprises of 114 government girls high schools in district Mardan. Total students studying in these schools are 20475 in number. Out of total, 14 schools are situated in urban areas and 100 schools are in rural areas. Total number of teachers serving in these schools is 575 in number.

Sample selected was 12 schools from both tehsils of district Mardan. In this selection, stratified-cum-random sampling techniques were used. In the first stage, we stratified the total 114 schools in to two major groups – one having large sized classes and second having small-sized classes. In the second stage, we used random sampling method (lottery method) and selected 6 schools in each of the two major groups. A total of 120 teachers have been selected from the 575 teachers (10 teachers from each school

who were teaching to secondary classes) who were teaching and have experience of teaching in both overcrowded and small-sized classes. Respondents were Requested / guided to answer both questionnaires of overcrowded classes and small sized classes

Research Instrument

(Two parts of a) self-administered questionnaire – first part containing questions on large sized classroom teaching and second part containing questions on small sized class room teaching – was used for data collection.

Questions Indicator from Large Class Size Teachers

Variable: Classroom Management (CRM)

CRM1: In overcrowded class teacher cannot interacts with clear audible voice.
CRM2: In overcrowded class teacher do not listens to the students attentively and carefully.
CRM3: In large classes teacher addresses students by name. (R)
CRM4: Black board is not visible to the back benchers in overcrowded classes.
CRM5: Teacher cannot pay attention to student's boredom and confusion in overcrowded classes.

The above reported 5 items/questions regarding Class room management (CRM) reflect that overcrowded/large class does not allow good class room management. In this case, item CRM3 is Reverse.

Questions Indicators from Small Class Size

Variable: Classroom Management (CRM)

CRM_S1: In small classes Students rotation is easy.
CRM_S2: In small class teacher interacts with clear audible voice.
CRM_S3: In small class teacher listens to the students attentively and carefully.
CRM_S4: In small classes teacher addresses students by name.
CRM_S5: Black board is visible to all the students in small classes.

The above reported questions were asked from the teachers to collect responses for small –sized classes. For small-sized classes, we assumed that class room management is much easier then overcrowded classes and teachers can pay attention to each and every student of class

Reliability Test of Questions/Items

All indicators were converted into questions and after that reliability test was carried out to determine the consistency or stability of the tool.

Data Analysis, Findings and Summary

Frequency analysis method was used for the analysis of the collected data through which we can analyze the result of the research while reliability test of items/questions is also presented. Reliability test is carried out to determine the consistency or stability of the tool. Leads to generate data and analysis. We have used on sample t test to generate our results. One-sample t test is capable of showing whether or not \the mean value of a variable differs from mid- neutral-point on Likert scale measuring on 1 to 5, and if differs negatively or positively then that difference is statistically significant or not.

Variable: Classroom Management (CRM)

CRM1: *In overcrowded class teacher cannot interacts with clear audible voice.*
CRM2: *In overcrowded class teacher do not listens to the students attentively and carefully.*
CRM3: *In large classes teacher addresses students by name. (R)*
CRM4: *Black board is not visible to the back benchers in overcrowded classes.*
CRM5: *Teacher cannot pay attention to student's boredom and confusion in overcrowded classes.*

The above reported 5 items/questions regarding Class room management (CRM) reflect that overcrowded/large class does not allow good class room management; .in this case, item CRM3 is Reverse.

For small-sized classes, we assumed that class room management is much easier then overcrowded classes and teachers can pay attention to each and every student of class, the following five questions were used to collect responses' from the teachers.

CRM_S1: In small classes Student's rotation is done easily.
CRM_S2: In small class teacher interacts with clear audible voice.
CRM_S3: In small class teacher Listens to the students attentively and carefully.
CRM_S4: In small classes teacher addresses students by name.
CRM_S5: Black board is visible to all the students in small classes.

Classroom Management (CRM)

Results of the frequency analysis carried out to evaluate five questions on Class room management (CRM) in the Over-crowded classes are provided in Table 1 (a).

Table 1. (a) Frequency Analysis of Questions on Class Room Management IN Overcrowded Classes (CRM)

Questions	Options				
	Strongly disagreed	Disagreed	Neutral	Agreed	Strongly agreed
CRM1	-	14	3	23	20
CRM2	1	2	-	27	28
CRM3	20	14	7	14	5
CRM4	4	7	7	13	29
CRM5	-	9	1	14	36
TOTAL	25	46	18	91	118

Regarding class room management (CRM), it was assumed that overcrowded classes do not allow good class room management, the majority of the respondents (Agreed= 91 & strongly agreed =118) have shown their agreement on this concern against 25 & 46 respondents who strongly disagreed and disagreed with the questions raised.

Results of the frequency analysis carried out to evaluate five questions on Class room management (CRM) in small-sized classes are provided in Table 1 (b).

Table 1. (b) Frequency Analysis of Questions on Class Room Management in Small-Sized Classes (CRM)

Questions	Options				
	Strongly disagreed	Disagreed	Neutral	Agreed	Strongly agreed
CRM1	-	-	-	11	49
CRM2	3	-	2	8	47
CRM3	-	-	1	17	42
CRM4	1	-	1	16	42
CRM5	1	4	3	14	38
TOTAL	5	4	7	66	218

For small-sized classes, we have assumed that class room management is an easy job in small-sized classes, the above reveals that, the majority of the respondents have agreed (66) and strongly agreed (218) against disagreed and strongly dis agreed (9) with the questions raised.

Reliability Test

Using SPSS, we carried out reliability test of the various questions of different variables in overcrowded classes; the result of the test is provided in table (2).

Table 2. Reliability Test OF Questions/Items

Variables	Cronbach's Alpha
Classroom Management (CRM) Small Size Class	0.834
Classroom Management (CRM) Overcrowded Class	0.855

Analyzing Variables Using One–Sample T-Test

One-sample t test is capable of showing whether or not/the mean value of a variable differs from mid-neutral-point on Likert scale measuring on 1 to 5, and if differs negatively or positively then that difference is statistically significant or not. If difference is positive (that is, if mean value is higher than mid-point=3) and statistically significant, results would be considered as respondents are agreeing with points raised in the items/questions asked.

One-Sample T-Test of Variable Discipline (in overcrowded class)

Carrying out One-sample t–test, using SPSS for variable Classroom management (CRMO), we get the results provided in Tables 3 (a & b).

Table 3. (a) One-Sample Statistics of Variable Classroom Management (CRMO)

	N	Mean	Std. Deviation	Std. Error Mean
CRMO	60	4.0467	.87012	.11233

Table 3. (b) One-Sample Test of Variable Classroom Management (CRMO)

	Test Value = 3					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Lower
CRMO	9.318	59	.000	1.04667	.8219	.8219

The results of One-sample t test given in table 3 (a) indicates that the mean value of variable Class room management (CRMO) estimates at 4.0467 while panel (b) of the table shows that the stated mean value differs from the midpoint (test value = 3) by a mean difference = 1.04667. Panel (b) of table 3 also indicates that this mean difference is statistically significant at t = 9.318 (p-value = 0.000), suggesting that variable Class room management (CRMO) is statistically significantly higher showing respondent agreement with the questions on Class room management (CRMO) in overcrowded classes.

Item-wise analysis, variable-wise analysis and now One-sample T-Test, all three analyses of variable Classroom Management (CRMO), are showing one and the same results that respondents on average agree that overcrowded classes do not allow good classroom management

One-Sample T-Test of Variable Classroom Management (in Small-Sized Class)

Carrying out One-sample T–Test, using SPSS for variable Classroom management (CRMS), we get the results provided in Tables 4 (a & b).

Table 4. (a) One-Sample Statistics of variable Classroom management (CRMS)

	N	Mean	Std. Deviation	Std. Error Mean
CRMS	60	4.6267	.65299	.08430

Table 4. (b) One-Sample Test of variable Classroom management (CRMS)

	Test Value = 3					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Lower
CRMS	19.296	59	.000	1.62667	1.4580	1.4580

The results of One-sample T-Test given in table 4 (a) indicates that the mean value of variable Class room management (CRMS) estimates at 4.6267 while panel (b) of the table shows that the stated mean value differs from the midpoint (test value = 3) by a mean difference = 1.62667. Panel (b) of Table 4 also indicates that this mean difference is statistically significant at t = 19.296 (p-value = 0.000), suggesting that variable Class room management (CRMS) is statistically significantly higher showing respondent agreement with the questions on Class room management (CRMS) in small-sized classes.

Item-wise analysis, variable-wise analysis and now One-sample T-Test, all three analyses of variable Classroom Management (CRMS), are showing one and the same results that respondents on average agree that small-sized classes allow good class room management

Conclusions

Class size effects on classroom manage can be reflected as that class room management (CRM), it was assumed that overcrowded classes do not allow good class room management, the majority of the respondents (Agreed = 91 & strongly agreed =118) have shown their agreement on this concern against 25 &46 respondents who strongly disagreed and disagreed with the questions raised. For small-sized classes, we have assumed that class room management is an easy job in small-sized classes, the result shows that, the majority of the respondents have agreed (66) and strongly agreed (218) against disagreed and strongly dis agreed (9) with the questions raised.

Recommendations

In light of the findings of this study summarized above and conclusions drawn, the following recommendations are presented for their appropriate implementations.

- That overcrowding of students in class rooms should be avoided, as far as possible.
- That teachers should be provided with extra facilities when teaching to large number of students.
- That helpers should be provided to the teachers of overcrowded classes as it's quite difficult to go through all assignments and do all academic activities by a single teacher.
- Teachers should be given some special trainings to manage overcrowded classes.
- School administration must take some corrective measures as it would a big facilitation towards over crowded class room management activities.

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