



THE EFFECTS OF LARGE CLASS SIZE ON TEACHING AND LEARNING: THE
CASE OF A PUBLIC UNIVERSITY IN BANGLADESH

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Abstract

This study investigated the effects of large class sizes on teaching and learning of business education in a higher learning institution in Bangladesh. We collected data directly by interviewing the students and faculty members with the help of a questionnaire for self-guidance. The data were analyzed by using percentage, frequency analysis, and Pearson correlation coefficient at a 0.05 level of significance. The study found that teachers' teaching and students' learning suffered from larger classes as opposed to smaller classes.

Keywords: Class size, teaching, learning, public university, private university, national universities.

I. INTRODUCTION

Class size refers to the average number of students per class. The size is calculated by dividing the number of students enrolled by the number of classes. For the past few decades, there has been much debate about class size and whether simply reducing student-teacher ratio will lead to improved system. Arguably reducing class sizes improve the amount of instructional time and attention given to each student, research studies found mixed results: some studies find that smaller classes lead to better academic performance, but others report size does not matter as long as we have quality teachers. That means that teaching is the main factor, and the question still remains unanswered if hiring more teachers by reducing the class size would add to the cost of the tertiary educational institutions, without producing the desired result ([www.eduglossary.edu.org/clss size](http://www.eduglossary.edu.org/clss_size)).

In U.S Colleges and universities (virtually no distinction between colleges and universities), class sizes can be as large as 100-200 students (for introductory 101 level courses) in an auditorium or as small as 5 students around the table. Jumbo classes are not common but



much smaller and cozier classes are pretty common. In 2011 at Touro University, NY, of the 724 associate's degrees awarded, 70% were for the liberal arts and sciences major. Some of the most popular bachelor's degree programs were liberal arts and sciences, psychology, and business administration, while education, business administration, physician assistant, and social work were among the most conferred masters' degrees, per National Center for Education Statistics (see <http://touro scholar.touro.edu/gsb>). Roughly 85% of classes had 20 or fewer students in 2011, as reported by U.S News and World Report (usnews.com). As of today (2022), the situation is unchanged, as stated by one researcher who has been teaching at this university since 2001.

Among the 294 ranked national universities, an average of 45.8 percent of courses offered in the Fall of 2016 had fewer than twenty students. National Universities are institutions that offer a range of undergraduate programs as well as masters and doctoral degrees. Some of these national universities' class sizes are mentioned in table 1 below -

School	% Fewer than 20 students (Fall 2016)
Nova Southeastern (FL)	77.9%
Barry University (FL)	77.6%
Chicago (IL)	77.4%
Yale (CT)	74.2%
Columbia (NY)	82.1%
Northwestern (IL)	78.3%
Immaculate (P.A)	89.2%
Edgewood College (WI)	83%
New School (NY)	90%
NYU (NY)	77.9%

Source: U.S. News (2017).

Just because universities mentioned in the above table offer a lot of small classes does not mean that the average size of the classes an individual student ordinarily would take would be small. Or even that many of the classes will be small. But our experience is that at liberal arts colleges, smaller class sizes are the standard. 30-40 is about average. For the academic year



2019-2020, the average student-to-faculty ratio of US colleges is 14.41 to 1. It indicates that there are about fourteen students for every instructional faculty and staff. For public schools, the ratio is 16.60 to 1 and 13.52 for private schools (www.univstats.com/corestats/student-faculty-ratio)

In Bangladesh, the picture is quite opposite. The country's constitution does not set a limit to the class size. Class size completely depends on the respective school. The country is densely populated with 163 million people in 55598 square miles (UN 2021). Reliable statistics are not available for the class size in this country. Our experience and knowledge indicate that there may not be fewer than 60-70 students in each class in public universities. In contrast, 30-40 is about the average in private universities.

Our experiences and the research shows mixed results in students' academic performances and teacher's performances, it is, however, an accepted fact that in elementary and secondary schools the students' learning outcome and teachers' teaching outcome are better as opposed to larger classes in these types of institutions.

While a number of studies have found a positive correlation between class size on teaching and students' learning, others did find little to no impact on teaching and students' learning and outcomes. Most of these studies have focused on elementary school and even pre-schools. But such studies in tertiary education from Bangladesh context, as per our knowledge, are very rare in Bangladesh.

Only a handful of studies have focused on the effects of class size, especially, large class size, on teaching and learning outcomes in tertiary business education. It is recognized that the tertiary educational environment is different from the classroom and learning environment of the elementary school setting. The fact is that in elementary school, usually a teacher teaches the same class of students all school day long, in higher education, a professor may teach one, two, three, or more sections of a course each semester. Class size and the total number of students that a professor teaches may or may not be the same (Monks, J, and Schmidt, R: 2010).

There is no exaggeration to say that the education system of Bangladesh is not competitive internationally. We can argue that this is because of large class sizes and the lack of a unified curriculum. Studies like Yelkpiri, D et al (2012) reveal that in large class classes the teachers fail to communicate properly with students, enforce classroom discipline and identify the specific needs of students and address them properly. The picture is quite opposite for small class sizes.

Moreover, in an educationally underdeveloped nation like Bangladesh, the staffing (teaching and non-teaching) in public universities has compelled the management to resort to large class sizes. Indeed, the large class size has become a big challenge for the management of the universities in a country like Bangladesh.

In Bangladesh, higher education class sizes are usually higher, and it compounds with the increase in population. This, thus, impacts students' learning and teaching in business education. Business Education imparts the knowledge, skills, understanding, and attitudes



needed to perform in the business world as a producer and/ or consumer. In business education, the condition of teaching and learning is important in the acquisition of such skills and knowledge to run the business world (Ayeni and Olowe, M, 2016). This state of affairs generally for an empirical study to come out with views of lecturers and students on the effects of large class size on effective teaching and learning of business education in a tertiary institution in a developing nation like Bangladesh.

Purpose of the Study:

The purpose of this study, therefore, has been to provide views of both lecturers and students on large class sizes and how it affects teaching and learning in a tertiary institution in Bangladesh. Accordingly, the study is designed for investigating:

1. The effects of large class size in the teaching of business education.
2. The effects of large class size in the learning of business education.

Research Questions:

The following questions provided a guide in the process of data collection to help find answers to the problems:

- (1) To what extent does the large class size affect teaching in a tertiary business educational institution in Bangladesh
- (2) To what extent does large class size affect the students' learning in tertiary business education in Bangladesh?

The Significance of the Study

Numerous studies have investigated the impact of class size on student outcomes, mostly at the elementary and middle school level. This analysis contributes to this discussion by examining the impact of class size on teaching and learning outcomes. Additionally, this study may provide important information for the university authorities, policy-makers, researchers, and other stakeholders of education in Bangladesh. The findings from this study would also add to the existing literature on university education in and beyond Bangladesh.

II. LITERATURE REVIEW

A widely held belief that students in smaller classes perform better in all subjects and on all assessments when compared to their peers in larger classes is somewhat documented by evidence in the academic world. Needless to mention that there exists a vast amount of literature on the role of class size on teaching and students' learning. Most of the studies focused on elementary schools and were designed to experiment if the class size was instrumental in improving learning and academic achievement at the elementary school level. Studies ((Bruhwiler & Blatchford, 2011; Chingos, 2013) reveal that students who have smaller classes in early elementary grades continue to benefit from this experience even if they are in larger classes in upper elementary or middle school. The teachers in smaller classes, as noted earlier in this paper, can address to the needs of the students and help students develop ability to adapt to intellectual and educational challenges.

A widely investigated experiment in class size is the Tennessee STAR program that ran from 1986 to 1989 and randomly assigned children entering kindergarten into classes of 15-17 students, 22-25 students, or 22-25 students with a teacher's aide (<http://hdl.handle.net>)The



students in the smaller classes, according to the student testing in STAR, performed better than the students in the larger classes did. Numerous studies (see Word et al. (1990); Finn et al. (1990); Nye et al. (2000 and 2001) have examined the results from this experiment and found that the students in the smaller classes performed significantly better on standardized tests in mathematics and reading in kindergarten through the third grade.

Only a handful of studies have focused on the role that class size may play in outcomes in tertiary education while overcrowded or large classes are now common in most educational institutions, especially those in the developing world of which Bangladesh is no exception. The university teachers in these crowded classes face many challenges. One of these issues in public universities is underfunding resulting in inadequate school buildings, inadequate educational facilities, poorly qualified and poorly remunerated teachers, inadequate learning conditions, and lack of instructional materials (Ogbondah, 2010). Usually, a teacher in a large class is not placed under strain since he/she is lecturing without paying attention to all in the class, does not identify or spot the problem, and feedback is not given. In smaller classes, it is quite opposite to large classes. A teacher in a smaller class can pay individual attention to the students, give feedback, and experience better relationships with and have more knowledge of individual pupils (Koenig et al 2015).

Researchers like Bedard and Kuhn(2008) have found that class size has a negative impact on student course evaluations, with larger courses receiving statistically significant lower scores than smaller courses. Likewise, Walia (2008) utilizes 19 semesters of student evaluations of economics courses at Kansas State University and found a negative and statistically significant impact on student course evaluations. Westerlund (2008) reports that increases in the size of mathematics classes at Lund University in Sweden lead to significantly lower student course evaluations there, as well. Fewer studies still have examined the impact of class size on student performance in higher education.

In the area of student engagement, findings consistently show the greater value of small classes as opposed to larger classes. Students are expected to display more disruptive behavior in large classes than students in smaller classes. The interaction of students with the teacher is totally lacking in larger classes. The teachers know the students by their names in smaller classes but that is not possible in large classes. Teachers in smaller classes can diagnose and track student learning and differentiate instruction in response to student needs. Research also suggests that smaller class sizes can help students develop a greater ability to adapt to intellectual and educational challenges (Bedard & Kuhn, 2008; Dee & West, 2011; Fleming, Toutant, & Raptis, 2002). In small classes, the students have a greater probability of attending college. This benefit is greatest for underrepresented and disadvantaged populations. While the increased probability for all students is 2.7%, it is 5.4% for African American students and 7.3% for students in the poorest third of US schools (Dynarsky, Hyman, & Schanzenbach, 2013; Krueger, 2000)

The whole problem of large class teaching is summed up in the following quotation:

“Quality teaching and assessment actually suffer in large classes” . .

This statement is true for Bangladesh and other developing countries that cannot reduce class size because of lack of resources (e.g., budget). Government spends only 1% of national budget on the country's education ([https:// data.worldbank.org/ indicator/BD](https://data.worldbank.org/indicator/BD)).



Hypotheses:

Two Null hypotheses were generated:

HO1: There is no significant relationship between large classes and effective teaching of business education.

HO2: There is no significant relationship between large class and learning business education effectively

Materials and Methods:

Sample population and study area:

To achieve the objectives of the study we selected randomly a sample size to 360. However, we had responses correctly from 210 students and 18 lecturers belonging to different business subject areas of a public university. The response rate is 59% and hence valid with this response rate. This public university is located in the main port city of Bangladesh in where one of the researchers of this study is currently teaching and another researcher is a former teacher of this public university. As a matter of fact, the researchers are familiar with this university and therefore, it became easier for them to have access to the target population easily.

Data Collection:

To collect data, we directly interviewed the sample population with the help of questionnaires (one for students and the other one for the faculty members) for self-guidance. Five-point Likert-type scale statements were used to measure the variables where 1 stand for strongly disagree/very low and 5 stands for strongly agree/very high effect on the statements.

Mostly questions were asked to collect data relating to research objectives. We derived the variables of the survey instruments from exploratory studies and the relevant theoretical and empirical literatures pertaining to the subject of this research. We also used secondary sources like newspapers, magazines, books and journals based on the relevance to the research. Primary data sources were used to collect information relating to problems identified by the students and teachers about the large class size.

We ran the reliability analysis by Cronch's alpha . All the alpha values were greater than 0.60 and hence considered to be acceptable (Nunally, 1978)

Data Analysis:

Data analysis centered on descriptive analysis (weighted mean and standard deviation). In most cases, this study used simple statistical tools like tables and percentages for the precision of data analysis. Besides, the collected data were analyzed using percentage count and Pearson Correlation coefficient at a 0.05 level of significance

Findings and Analysis:

Research Question 1: To what extent does the large class size affect teaching in a tertiary business educational institution in Bangladesh



S/N	The Effects of large class size on teaching	SDA	DA	N	A	SA	WM	St.D	
1	Inability of the teacher to pay individual attention	04	0	0	12	02	3.44	1.34	Agree (78%)
2	Ineffective students control	07	0	0	08	03	3.33	1.2	Agree (61%)
3	Poor planning and assessment	01	2	4	10	01	3.44	0.95	Agree (61%)
4	Ability of each students will not be known by teachers	05	02	0	08	03	3.11	1.52	Agree (61%)
5	Increase strain on teachers	03	0	02	9	04	3.61	1.29	Agree (72%)
6	Students show more disruptive behaviour	05	02	10	07	04	3.16	1.52	Agree 61%
7	Make teachers less productive	07	06	0	02	03	2.59	0.98	Agree (38%)
8	Large class frustrate the teachers	03	03	02	06	04	3.27	1.40	Agree (56%)
9	Students are less attentive in large class size	01	03	02	08	04	3.61	1.16	Agree (67%)
10	Sometimes the class become a noisy place during teaching	03	02	02	06	05	3.44	1.42	Agree (61%)
11	Overall impact of class size on teaching	03	02	00	06	07	3.66	1.49	Agree (61%)

Note (s): SDA =Strongly Disagree; DA = Disagree; N=Neutral ; A =Agree; SA=Strongly Agree; WM= Weighted Mean; St.D= Standard deviation; r= correlation coefficient I= Interpretation

Most of the respondents, as revealed from table 1, agreed that large class size leads to poor classroom management. The result presented in Table 1 reveals the responses of respondents on the effects of large class sizes on the teaching of Business Education. The table revealed that most of the respondents agreed that a large class size leads to poor planning and assessment, and increase strain on teachers but the majority of the respondents agree that the large class size does not make teachers less productive, The data reveal a weighted mean of 2.59 and a standard deviation of 0.98, which means that lecturers disagreed with the opinion that large class size makes teachers less productive.

Overall results (see table 2) indicate that there are negative relationship between large class size and effective teaching of Business Education in tertiary institutions, as is evidenced by correlation coefficient ($r= 0.86$). This means that if the class size becomes larger, the teaching productivity becomes lower and vice versa. In other words, quality teaching and assessment suffer in large classes. Thus the null hypothesis is rejected and the alternative hypothesis is accepted. This is inconsonant with numerous studies (for example, Amua-Sekyi, 2010, ; Ayeni, G and Olowe, O, 2016)

Table 2: Correlation between large class size and effective teaching business education.

	Large Class Size	Teaching
Large Class Size	1	-0.86**
Teaching	0.86**	1

The table indicates that the correlation co-efficient for large classes and teaching business education was 0.86. The value is significant at 0.01level (2-tailed). Hence, the null hypothesis 1



is rejected. This means that there is a significant relationship between class size and effective teaching.

Research question 2: To what extent does large class size affect the students' learning in a tertiary business education in Bangladesh?

Table 3: Views solicited from students (N =210)

Please rate the following statements on a 5-point Likert -Scale (1being Strongly Disagree and 5 being Strongly Agree)

SL	The Effects of Large Class on Learning	SD	D	N	A	SA	WM	St.D	I
1	Large class affect student assimilation	24	16	19	105	46	3.63	1.25	Agree (72%)
2	It is an avenue to interact instead of learning	43	16	17	88	46	3.37	1.43	Agree (64%)
3	Information from the teacher will not be properly disseminated	51	14	21	96	28	3.17	1.41	Agree (59%)
4	High cases of examination failure in large class	19	07	21	112	51	1.84	1.12	Disagree (78%)
5	Interruptions and distractions in large class	26	14	10	84	76	3.80	1.32	Agree (76%)
6	No motivation to attend classes	53	47	34	37	39	2.81	1.45	
7	Facilities to enhance learning are not available in a large class	17	13	11	115	54	3.83	1.12	Agree (84%)
8	Regular lateness for lectures	89	57	0	39	25	2.30	1.46	Disagree (71%)
9	High noise levels	24	11	27	87	61	4.4	1.89	Agree (70%)
10	Unpleasant comments by other learners	37	23	17	82	51	3.41	1.41	Agree (63%)
11	Poor sounds level	23	28	15	86	58	3.60	1.30	Agree (69%)
12	Less attentive to the class teaching	19	22	18	89	62	3.73	1.24	Agree (72%)
13	High absenteeism rate due to feelings of oblivion	26	24	05	80	75	3.73	1.37	Agree (74%)
14	Less individual interaction with the teachers.	08	14	06	94	88	4.14	1.01	Agree (87%)
15	Poor classroom management affects learning	11	09	9	109	72	4.04	1.01	Agree (86%)
16	Overcrowding and lack of space	13	19	8	115	55	3.85	1.09	Agree (81%)
17	Hard to concentrate	12	15	04	87	92	4.10	1.10	Agree (85%)
18	Difficulty of group task excution	08	12	0	99	91	4.20	0.98	Agree (90%)
19	Overall impact of class sizec on learning	08	12	0	99	91	4.20	0.98	Agree (90%)



Note (s): SDA =Strongly Disagree; DA = Disagree; N=Neutral ; A =Agree; SA=Strongly Agree; WM= Weighted Mean; St.D= Standard deviation; I= Interpretation

It is revealed in table 3 that most of the respondents agree that large class size affects student assimilation in Business Education; the students in large class size can hardly concentrate; there exists no or less interaction with the students: overcrowding and lack of space become detrimental to the interests of students' learning, the students' gossip with each other paying no attention to the lesson delivered by the teacher. The majority of the respondents disagree (78%) that there are high cases of exam failure. We opine that this may be attributable to socio-political conditions of the country that allow students to pass the exam anyway. The widely held belief is that if a student apprehends that he or she is expected to fail, he/she drops out of the class. But this is not the case with students of public universities in Bangladesh. The study reveals further that interference from disruptive students affects learning in a large class; there is no motivation to attend classes in a large class. A large class encourages regular lateness for lectures and students are less attentive in large class sizes. 90% of the respondents agree that the overall impact of large class size is that learning is hampered in large classes. The finding seems to agree with Matta et al (2015) who observed that students' learning decreased as class sizes increased. Further, the findings are in agreement with the view that in large classes effective learning becomes more difficult (Amua-Sekyi, 2010).

Table 4: Correlation between large class size and effective learning in tertiary business education

	Large Class Size	Learning
Large Class Size	1	0. -893**
Learning	0.-893**	1

The table indicates that correlation coefficient for large class and learning business education was 0.-893 The value is significant at .01 level (2-tailed). Hence, the null hypothesis 1 is rejected. This means that there is a significant negative relationship between class size and effective learning business education. In other words, if the class size increases (becomes bigger), the learning of students decreases (becomes smaller).

III. CONCLUSION

Quality teaching and learning suffer in tertiary education in Bangladesh. Majority of the respondents echoed the difficulties that the teachers and students face in large classes. A lecturer noted, " I am unable to give the students time and attention they often need."

One respondent reports if the teacher with 150 students in the class gave one writing assignment a week in each class, the time required to teach the course and score the writing assignments would likely be between 90 and 100 hours.



Yelkpiri (2009) reported the lack of seating and writing places in a large class. As a result of inadequate seating and writing spaces, as reported by some faculty members and the students, it becomes difficult for the students of 100 and 200-level courses to pay attention to the lecture and write lecture notes as well. Our observation is that most students who sit at the back and outside the lecture halls neither participate nor pay attention to whatever goes on, but engage themselves in arguments and gossip.

All these imply that the large class size makes it impossible for the lecturer to manage and teach effectively, since some students neither pay attention nor participate in-class activities, but only add to the number. According to UNICEF quality education includes, among others, encompassing knowledge, skills, and attitudes and a link to national goals for education and positive participation in the society (cited in Chowdhury et al, 2015). While education is seen as an instrument for achieving social and economic goals, quality is a serious problem in tertiary public education. There is a perception that the large class size, among others, hinders imparting quality education.

Recommendations for future research

The class size is a major determining factor in teaching and learning. It is important more research is done to determine how it interacts with phenomena such as teachers' quality and context and students' learning. We contend that our research may guide policy decision-makers in several ways.

- The university should not conflate class size and workload.
- The university should take steps to appoint more lecturers in general courses to avoid overcrowdedness classrooms.
- The university must institute a conscious plan of staff (teaching) development designed to improve the pedagogical methodology
- The government must resource the universities to ensure quality delivery instead of establishing more universities which amounts to adding to the existing problems.

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