

The Impact of Class Attendance on Academic Performance of BBA Professional Students: An Observational Study

Bipul Kumar Sarker & Uchinlayen

Abstract

Attendance in classrooms of students in contemporary higher education at national universities in Bangladesh plays an important role. It is a common belief that more classed students score better on the exam than do less or non-class students. According to the attendance policy of the BBA Professional Department of Habibullah Bahar University College (HBUC), students should attend at least 80% of their total classes to prevent students from appearing in the final exams. Thus, this paper examines the relationship between final examination performance and the class attendance percentage participation between two different semesters of BBA Professional Department in Statistics-I and Statistics-II students. The survey was conducted from December 2016 to March 2020 in the BBA Professional Department of Habibullah Bahar University College to complete the research work. A total of 108 students were selected as the sample for this study. Research data regarding class attendance and academic results from published results were collected from college attendance records of the BBA professional department. Data was analyzed in terms of frequency, percentage and independent t-test using SPSS-20 version of software. This study shows that there is a positive correlation between classroom attendance percentage and final exam grade. Since classroom attendance percentage influenced the final outcome of the students, therefore, according to the '80% Rule', students were divided into two groups. Judging by the independent t-test, the results were analyzed and found that significant differences exist between the two groups; As a result, students with more than 80% attendance achieved higher marks as opposed to less than 80% attendance.



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Introduction

The presence of students in class has recently become an important topic of discussion. Students are expected to attend all classes in statistics and mathematics courses of the classes in which they are enrolled in. It is believed by all that in higher education, course attendance contributes to getting a good GPA. However, there is no way to confirm that this theory will always work the same way. Occasionally there are some exceptions, which can never be exemplified. There are some students who can understand in class or immediately catch a brain. By doing so, they have little advantage over others. Participation and engagement in the classroom of students plays an important role in today's higher education.

Literature Review:

The relationship between students' class attendance and academic performance has become a topic of research for researchers. Before long, many researchers have tried to find ways to solve problems through research from different perspectives. Results from various studies prove that classroom attendance is a significant variable that adversely affects academic results. (Kirby and Brendan McElroy, 2003) By studying the relationship between class attendance and grade by controlling all other influential factors in the first-year economic course, she found that classroom attendance and tutorial attendance had a positive effect on the final grade. To verify the impact of lecture presence on test performance among civil engineering students at University College Dublin, (Purcell, Patrick, 2000) analyzed a regression and the results proved that there was a strong correlation between the two variables. (Chen, Jennjou, and Tsui-Fang Lin, 2008) Also found that class attendance had a positive and significant effect on students' test performance. A survey was conducted by (Landin, Mariana, and Jorge Perez, 2015) where the study was conducted in the presence of students and their academic performance in the History of Pharmacy course at the University Of Santiago De Compestela (Spain). The results were that there is a positive relationship between attendance and academic achievement. Furthermore, the relationship between attendance and performance among students in three groups of Finnish universities was studied by (Lukkarinen, Anna, Paula Koivukangas, and Tomi Seppala, 2016). The first group is those who dropped out before the final exam, the second group is those who need to take classes and exams, and the third group is those who study individually and take the exams. It was revealed that attendance was positively and significantly related to the performance of the two groups.

Statistics is a broad discipline of mathematics and applied application of mathematics. Lecturers can demonstrate different ways of how to easily present a problem to a student and encourage them to come up with their own creative solution. When a teacher presents something interesting in the class, it attracts the students as a magnet, dragging them to the class, and nothing else can hold them. They will go to that class. The more strategies and approaches students face, the deeper their conceptual and practical understanding of the subject. Likewise, a student who regularly skips the statistics class faces many difficulties in understanding statistics and mathematics because they are unaware of the basics. Missing a few consecutive materials, absent students may not fully concentrate on the next class. Furthermore, HBUC enforces the compulsory attendance policy, under which those students are not allowed to sit in the final exams unless they are required to attend at least 80% of the class. The main objective of present study is to evaluate the relationship between classroom attendance and students' final exam performance in two different semester statistics courses and mathematics courses in the same batch at Habibullah Bahar University College's in BBA

Professional Department. Others objectives of study are to Predict student performance and attendance in their classroom and also compare the final examination marks obtained between students with class attendance more than 80% and class attendance less than 80%.

Methodology:

Census study was conducted among all 108 students who were enrolled in among statistical and mathematics course in BBA professional department at Habibullah Bahar University College. The data set includes 54 1st Semester students and 54 4th Semester students who undertook a Mathematics and Business Statistics-II course during the semester of December 2016 to March 2017 and December 2019 to March 2020. All students enrolled in the course in the BBA Professional Department are considered as the primary sample. During the lecture time, attendance in the class was recorded through a sign-in sheet from each student. During the lecture, student attendance was recorded through the attendance sheet for each student attending the class. Two mid-term tests were taken throughout the semester for student performance evaluation (2 Mid-Term) and all students were required to participate in the final exam of the course.

One teacher takes at least 25 classes to complete the entire course, and class attendance at each lecture was recorded during the lecture. Each week, students are required to attend the class twice per course, each class having to attend one hour of equivalent lectures. Each lecture consists of 50 hours of total lecture. *Student performance* was obtained at the end of the semester after the final exam. The lecture will record the marks in the national university marking system for each subject. In each course, 100 marks are divided into two parts according to national university rules. 30% mark for the first part and 70% mark for the second part. Since the assessment marks are same between both courses, all the values were converted into 100%.

Analysis/Results

The study was conducted on 108 students in the BBA professional department of Habibullah Bahar University College. Among them, male and female were 56 and 52. Table 01 shows the profile of the respondents. 52% of the respondents are male while the rest are female. Male respondent are more than female respondent. 50% of the respondents are BBA professional first semester students who undertook Business Mathematics course and 50% of the respondents are also BBA professional students of the same batch who undertook Business Mathematics and Business Statistics course.

Table 01: Frequencies of Respondent profile

Characteristic	Category	Frequency	Percent
Gender of the Respondent	Male	56	52
	Female	52	48
Level of Education	1st Semester	54	50
	4th Semester	54	50
Course Name	Business Mathematics	54	50
	Business Statistics	54	50

Descriptive Statistics:

Based on table 02, the average class percentage of students coming to the class is 64.94, with the average Mid-Term Assessment Marks (Out of 25 marks) being the average 7.51, which deviates 6.17% from its average. While, final exam marks (Out of 70 marks) deviates by 12.58% from its average of 17.89%.

Table 02: Descriptive Statistics

Item	Sample Size	Maximum	Minimum	Mean	Std. Deviation
Class Attendance Percentage	108	100	0	64.94	24.57
Mid-Term Assessment Marks (Out of 25 Marks)	108	23	0	7.51	6.17
Final Exam Marks (Out of 70 Marks)	108	58	0	17.89	12.58

Correlation and Regression Analysis:

Table 03: Pearson correlation between class attendance percentage and final exam marks

Model	R	R Square	Adjusted R Square
1	<i>0.494^a</i>	0.244	0.237

a. Predictors: (Constant), Class Attendance Percentage

Based on table 03, it is show that there is a weak positive relationship between class attendance percentage and final exam mark (R Square value is 0.244). The coefficient of determination is 0.244 which means that the independent variable can explain 24.45% of the variation of the dependent variable. Therefore, about 24.4% of the total variation in the attendance percentage data is explained by final exam marks.

Table 04: Simple Linear Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.451	3.001		0.484	0.630
	Class Attendance Percentage	0.253	0.043	0.494	5.854	0.000

a. Dependent Variable: Final Exam Marks

A simple linear regression analysis technique was applied to the collected data to test the effect of class attendance percentage on the final exam result. Above table show that, there is a significant positive relationship between the class attendance percentage ($\beta = 0.253$) and score obtained final exam with p-value= 0.000.

Independent Pair t-test:

According to the rules of class attendance at Habibullah Bahar University College, it is mandatory for all students to have 80% attendance. As a result, students are not allowed to appear in the final exams if they have less than 80% of total contact time without any reason. The class is divided into two categories based on the percentage of attendees. Individual t-tests were conducted because of the two groups considered, to compare the final exams mark between class attendance greater than 80% and class attendance less than 80% students.

Before conducting the t-test above in this regard, the concept of equality of variance should not be estimated, meaning that the variance of both groups is assumed equal. Levene's test checks whether the variance (variation) between the two groups (<80% and >80%) is the same. If the significance value of Levene's test is significant, the variances for the two groups are not the same. So, this study is expected to see an insignificant value of Levene's test to carry out independent t-test.

Table 05: Levene's Test

	F-value	Significance
Equal Variances Assumed	0.700	0.405

Based on Table 05, the variance was assumed equal with a significant value of 0.405 at $p=0.05$. This means that the assumption of equal variances was not violated, and independent sample t-test may be further analyzed. Independent sample t-test was carried out to compare the student's results between the two-attendance groups. The hypothesis of Independent t-test is:

H_o = There is no difference in final exam marks between the two attendance groups

H_A = There is a difference in final exam marks between the two attendance groups

Table 06: Result of independent T-Test for comparison between two attendance groups

t-value	Degree of freedom	Significance (2-tailed)
6.42	106	0.000

Based on Table 06, it is observed that there is a significant difference between the final examination marks by students who attended the class more than 80% and those who attended the class less than 80%.

Table 07: Summary Statistics

	Greater than 80%	Less than 80%
Sample Size	29	79
Mean	28.83	13.87
Std. Deviation	12.71	9.92
Std. Error Mean	2.36	1.12

Students who are present in class more than 80% from their total contact hours have higher mean score (28.83%) compared to those who attended class less than 80% of their total contact hours as based on Table 07. To sum up, students with more than 80% class attendance scores much better in their final exam when compared to the students with less than 80% class attendance.

Discussion:

If the students in the class listen carefully, when they do not understand, then they try to ask the teacher to understand why or how the question was resolved, the students attending the class do much better than the students who did not attend the class. Although this study found a weak positive correlation between class attendance percentage and the final exam mark as seen in table 03 (R Square value is 0.244), it is not a cause and effect relationship. The collected data shows that, students who have good attendance in the class but have low marks in their final exams. Because of this, the researcher thinks that not all students are

equal in merit, there are some students who work hard but cannot produce good results. But they not lack merit, they have deficiency in practice. Intellect develops through long days of practice. Many again prefer coaching without having to take classes. Some of them are doing good results again and again; it is not the case that everyone can do well without taking classes.

As evidenced by the results of Table 06, class attendance affects final exam scores, where there is a final exam score compared between the two groups divided by classroom attendance percentage. After all, more than 80% of attendance students received good marks in the final exams, compared to less than 80% of attendance in the classroom. Therefore, author is concluded independent variable class attendance percentage is strongly impacted on dependent variable on Student Performance in final exam. Attendance matters for all students and this report has quantified the degree to which good attendance contributes to student success (Spradlin, T.2012).

Conclusion and Recommendation:

Absent students become inactive because of their lack of contact with the study. One of the biggest problems encountered when presenting to a team work or group, disorganization between them affects their work. Unable to update for their classes and assignments, they are not timely informed about the preparing presentation. Students performing poorly in class quizzes and mid-term exams also outperform the final exams. As a result, weaker GPA makes them mentally weaker and move away from studying. It has been found that absenteeism influences students' learning disability, their achievements in various exams and their ability to perform. It is necessary to apply strict measures to control the attendance of the students of the department and to arrange online attendance by restructuring the old attendance system so that the department gets immediate idea about the presence and absence of each student. The college administration needs to identify attendance barriers and take appropriate measures to address those obstacles through appropriate interventions, such as exchanging information between families and college, informing family members about absence and sharing the test scores with them. Attendance policy makers can provide stimulus or rewards such as recognition certificates and rewards or gift cards for good attendance students, so that students are interested in coming to class (Spradlin, T., Cierniak, K., Shi, D., & C hen, M., 2012). Teacher should strive to create a rich, engaging teaching system for students and a safe classroom environment, so that each student can attend the class with interest.

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