

Investigating University Students' Satisfaction on Online Class: Bangladesh Perspective

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Abstract

In Bangladesh, though the concept of conducting online classes is relatively new, due to the ongoing lock down situation caused by the COVID-19 pandemic, many academic institutions have turned towards online platforms to conduct online classes. Given the novelty of experience, in this study, we aim to investigate university students' perception and satisfaction regarding online classes. Data was collected from 150 students from different academic institutions (public and private universities) through online forms and collected data was analyzed using SPSS software and Microsoft Excel. Three themes namely, e-platform quality, facilitating conditions and teachers' delivery quality emerged as the key factors relating to the students' online learning experiences. The study shows that e-platform quality and facilitating conditions are strong predictors of overall satisfaction of the students. It also shows that the students are somewhat satisfied with the e-platform and teachers' delivery quality but not with facilitating conditions. However, the satisfaction level varies across the students from urban and rural areas. Based on these findings, the theoretical contribution to the relevant literature and practical implications for academic institutions and policy makers have been articulated.

Keywords: *Online class, students' satisfaction, perception, factor analysis, Bangladesh*

1. Introduction

With the COVID-19 breaking out rapidly, billions of students across the world are being homeschooled in a bid to curb the spread (Strauss, 2020). Teachers and students are now using numerous online platforms to conduct their classes. In fact, educational experiences, in recent years, are not barred within traditional academic classes only, rather it is a combination of both online and traditional classes. Though this concept of e-learning is quite familiar and commonplace in the developed countries, the notion is still relatively new to the majority of the population in Bangladesh (Al-Mahmud, 2020). Nevertheless, many educational institutions in Bangladesh had to resort solely to this online education due to the recent outbreak of COVID-19 (The Financial Express, 2020).

Whether the use of this online education would continue post-pandemic mostly depends on students' overall perception and satisfaction on the performance of current online systems, since satisfaction is an attitude that comes from one's own experiences (Henning-Thurau and Klee, 1997) using the system. Given the backdrop, this study aims to investigate the

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perception and satisfaction of the students in online classes conducted by their respective academic institutions. The study also tries to identify how the overall satisfaction can be predicted by different influencing factors.

Considering the focus of the study, we have conducted literature review to understand the key factors that influence students' perception and satisfaction. Extant literature discusses different factors that affect students' perception regarding online classes. In a study, Liao et al. (2006) found that information system quality is one of such critical factors. They measured the quality of an information system in terms of accuracy, ease of understanding, usefulness, completeness, relevance, and whether the system was up to date. Again, Hammouri and Abu-Shanab (2018) stated that the perceived usefulness, perceived ease of use, system quality, information quality, and computer self-efficacy have strong influence on students' satisfaction. They also revealed that when the content of the system is readable, relevant, accurate, and easy to retain, and complete then students' satisfaction towards e-learning will be enhanced. In line with that, Lee and Kim (2010) claimed in a study that proposed content, accuracy, format, timeliness, and ease of use as the characteristics for information quality are the key factors affecting the students' satisfaction.

Shih (2004) defined that the system quality as the processing quality of an information system. This was measured in terms of ease of use, functionality, availability, flexibility, reliability and response time. According to Seddon (1997), system quality ensures whether the system is properly working without any bugs as well as the consistency of the user interface, ease of use, response rates, quality documentation, and sometimes, quality and maintainability of the program code. In a study, Hammouri and Abu-Shanab (2018) indicated a strong influence of system quality on students' satisfaction. Their findings indicated that when a system is useful, well designed, secured, easy to access, and easy to navigate then students' satisfaction will increase.

Again, Davis et al. (1989) in their proposed model- TAM suggested that two beliefs—perceived usefulness and perceived ease of use—are instrumental in explaining the variance in users' intentions. The degree to which a person believes that using a particular system enhances his or her job performance is defined as its perceived usefulness. On the other hand, the degree to which a person believes that using a particular system will be free of effort is defined as perceived ease of use. The research conducted by Majdalawi et al. (2014) claimed that the perceived usefulness and perceived ease of use have been found to be the factors that directly affect students' acceptance toward using the online learning management system (Moodle). They have also noted that the students use Moodle because of its perceived ease of use rather than its perceived usefulness. In a study, Chiu et al. (2005) reported that the perceived usefulness of e-learning courses of Taiwanese university students was significantly correlated with the level of satisfaction.

Student satisfaction can be influenced by support services for system users. Research shows that system quality, service quality, and self-efficacy all increased satisfaction levels. However, service quality contributed more to satisfaction than the other two

variables. This underlines the importance of effective and timely support provided to assist instructors in using web-based learning systems (Wang & Wang, 2009). Some studies have found it to have a significant positive effect on satisfaction in e-learning context (Poulova and Simonova, 2014; Roca et al., 2006; Tajuddin et al., 2013; Xu et al., 2014).

Henning-Thurau and Klee (1997) viewed general satisfaction as an outcome of experience. Existing literature shows that social context influences peoples' satisfaction level (Irshad and Wahid, 2017). They found that the satisfaction level varies between urban and rural teachers regarding their job issue. Jung (2014) noted that satisfaction is one of the most desirable outcomes when implementing new technologies and services. Satisfaction have also been examined by previous studies in various educational settings including e-, m- and u-learning as a key outcome of technology use (Ramayah and Lee, 2012). Indeed, satisfaction has been defined from many perspectives, such as educational service quality, information quality which might affect the perceived satisfaction (Ramayah and Lee, 2012). Butt and Rehman (2010) defined it to be regarding the teacher's expertise, environment, and classroom facilities whereas Looney et al. (2004) defined it to regarding system flexibility, efficiency, and convenience. Several studies have reported the importance of usefulness and ease of use on student satisfaction (Rahman et al., 2015; Lim et al., 2007).

Again, social context might be a critical issue for a student to be satisfied with the e-learning. For example, students who are from countries technologically advanced and where ICT is well integrated in the education systems, will be easily satisfied with their e-learning environment. On the other hand, the developing countries have enormous challenges and a unique social context that differs from developed countries (UNESCO, 2014). Developing countries struggle with lack of ICT infrastructure and equipment, frequent power failure, lack of ICT skills, lack of funds, shortage of qualified teachers and so on (Andersson, 2008; Khan et al., 2012). Students may not have necessary device for e-learning, neither may they be able to purchase data frequently for their online classes. Furthermore, in most cases, the infrastructures such as electricity, telephone connectivity, internet highway and good roads are restricted to urban areas and thereby influencing the trend of access to technology being restricted to urban areas, because a large number of the population are living in rural areas therefore have no access (Oroma et al., 2012). As such, the social context of such a resource-constrained environment may have influence on students' satisfaction on e-learning.

Following the extant literature, in our study, "availability of required features for online class, ease to learn and use, ease to communicate with teachers and classmates, availability of support services, ease to retain information, flexibility to run the platform, security of personal data, effectiveness and ability to enhances performance, suitability of place for doing classes attentively, availability of necessary device, easy to buy data, availability of internet facility, teacher's ability to deliver lectures, usage of electronic features and engaging students in e-learning environment" have been considered as the variables to determine the impact of these factors on student satisfaction regarding online learning experiences.

2. Methodology

To fulfil the overall objectives of this study, we adopted a quantitative approach. To collect data, survey was conducted amid lock down in May 2020. The survey respondents were students of different universities (both from private and public) in Bangladesh. Due to the COVID-19 outbreak, the link of the questionnaire developed using Google form was circulated among the students of different universities of Bangladesh by using online social platforms. As such, the sampling was non-probabilistic and samples selected were judgmental based on convenience (Etikan et al., 2016). We structured the questionnaire having 24 items in various format such as single generalized question, multiple choice question, demographic questions and 5-point Likert Scale (1 indicates strong dissatisfaction while 5 indicates strong satisfaction respectively) statements. Validity of the questionnaire was examined in the stage of item generation from the extensive review of the literature. A total of 195 questionnaires link were administered. 150 completed questionnaires, of those who have used online class platform recently, were processed for the analysis.

The data analysis was done using IBM SPSS Statistics 20 Software and Microsoft Excel. Descriptive statistics (mean, standard deviation, percentage) was used to find out the overall satisfaction of the students and to explore whether the satisfaction level regarding e-learning varies across students between rural and urban areas. Factor analysis and reliability tests were used to identify the underlying dimensions which can reliably measure the independent variables. Finally, regression analysis was used to develop a model on how the independent variables affect the dependent variable.

3. Results

Our analysis shows that 36% of the respondents are from the public university and the rest of the percentage (64%) are from private university (Figure 1(a)). The analysis also shows that among the respondents 53% are attending the online classes from urban area whereas 47% of the respondents are currently in rural area (Figure 1(b)).

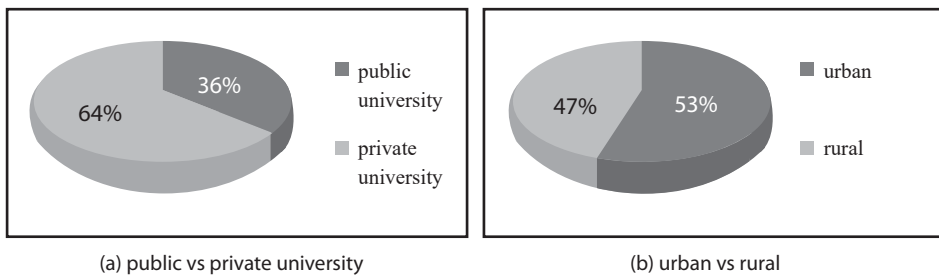


Figure 1: Respondents' ratio

In this study, the overall satisfaction level is considered as the dependent variable and 15 independent variables are used to measure the factors affecting the overall satisfaction level of the students. We have analyzed these 15 variables using principal component analysis with a varimax rotation method to determine the underlying dimensions. This produced a Kaiser- Meyer-Olkin value of 0.951 and the Bartlett's test of sphericity reached

statistical significance ($p < 0.001$), supporting the factorability of the correlation matrix. The factor analysis has initially suggested that there is only one underlying factor within these variables with the cut-off Eigenvalue of 1. The cumulative percentage of explained variance was 61.118%, which means that this could explain only 61.118% of the variation. To increase the cumulative percentage of explained variance to at least 70%, we have increased the number of factors to three. The identified three factors (e-platform quality, Facilitating conditions and Delivery quality) could explain 72.268% (Table 1) of the variation of factors affecting the overall satisfaction level of the students.

The factor-1 (**e-platform quality**) includes 8 variables (i.e., has required features for online class, easy to learn and use, easy to communicate with teachers and classmates, availability of support services, easy to retain information, flexible requirements to run the platform, security of personal data and it is effective and enhances performance) that measure the overall quality of the platform used. The Eigenvalue of this factor is 9.168 and it explains 30.774% of the variance (Table 1). This seems to be the most important factor among all and the factor is highly reliable ($\alpha = .926$).

Table 1: Number of items and factor loadings for students' satisfaction

Items	Number of Items	Factor loading		
		e-platform quality	Facilitating condition	Teacher's delivery quality
Has required features for conducting class	1	.601		
Easy to learn and use	2	.544		
Easy to communicate with teachers and my classmates	3	.743		
Support services are available whenever required	4	.721		
Easy to retain information	5	.721		
Flexible requirements to run the platform	6	.799		
My personal data are secured	7	.661		
It is effective and enhances performance	8	.661		
I have a suitable place for doing classes attentively	9		.724	
Necessary devices (mobile/laptop/pc)are not a problem for me	10		.684	
Buying data is easy for me	11		.790	
Internet facility is easily available at my place	12		.657	
Teachers can engage students effectively	13			.593
Teachers can use features appropriately	14			.694
Teachers delivery was easy to understand	15			.554
	Eigen value	9.168	.900	.772
	Explained variance (%)	30.774	25.309	16.185
	Total Variance			72.268
	α	.926	.905	.757

Note: Factor loading is considered above 0.4

The factor-2 (**Facilitating conditions**) includes 4 variables (I have a suitable place for doing classes attentively, necessary device is not a problem for me, buying data is easy for me and internet facility is easily available at my place) that measure the easily availability of data, internet facility and necessary device as well as suitability of place. The Eigenvalue of this factor is .900 and it explains 25.309% of the variance (Table 1). The table-1 also shows that this factor is highly reliable as Cronbach's alpha(α) = .905.

Rest of the factor-3 (**Teachers' delivery quality**) includes 3 variables (teacher's ability to deliver lectures, to use of electronic features and to engage students in e-learning environment). The Eigenvalue of this factor is .772 and it explains 16.185% of the variance (Table 1). The Cronbach's alpha for the factor is .757 which implies that the factor is reliable.

After finding out the three principle factors (e-platform quality, facilitating conditions and teachers' delivery quality) from factor analysis, we considered these three factors for the rest of the analysis.

Our analysis shows that the students have a neutral perception with their online learning experience (mean 3.0575 and Std. deviation 1.4189). Among the factors affecting the overall satisfaction level, the students seem to be satisfied with teachers' delivery quality (mean 3.9671) while they are found to have somewhat dissatisfaction with facilitating conditions (mean 2.5317). However, their perception regarding e-learning platform is just about neutral (mean 2.8640) indicating they are neither satisfied nor dissatisfied. Table 2 shows the mean value and standard deviation of students' overall satisfaction and satisfaction level for each of the key factors.

Table 2: Descriptive statistics

	Number of items	Mean	Standard Deviation (SD)
Overall Satisfaction		3.0575	1.4189
e-platform quality	8	2.8640	1.1616
Facilitating condition	4	2.5317	1.1963
Teachers' delivery quality	3	3.9671	1.2264

Our analysis also shows that the opinion on satisfaction level regarding online classes vary at least to some extent for all three factors between the students who are accessing online classes from rural area and those who are from urban area. However, it is found that the mean satisfaction level of both the urban and rural students are almost similar for both e-platform quality and teachers' delivery quality (Figure 2(a) and Figure 2(c)) and the ANOVA test also suggests that there are no statistically significant ($p=.657>0.05$ and $p=.204>0.05$) mean variances between these two groups for those factors. But it is found that there is a significant ($p=.032<0.05$) difference of satisfaction level between urban and rural students on facilitating conditions (Figure 2(b)).

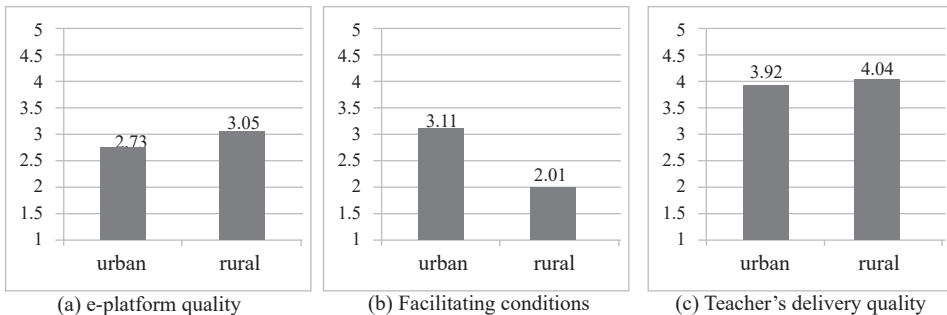


Figure 2: Students' satisfaction level for three different factors: urban and rural perspective

Table 3 shows that 78.6% of the variation in the overall satisfaction level can be explained by the group of independent variables. The difference between R square (78.6%) and the adjusted R Square (78.2%) is very trivial. It indicates that the sample size for this study is big enough and the independent variables are meaningful predictors of the dependent variable.

Table 3: Regression model

	Model		
	B	S.E	B
e-platform quality	.665***	.091	.544
Facilitating conditions	.455***	.094	.365
Teachers' delivery quality	.018	.064	.016
R Square			.786
Adjusted R Square			.782
F			178.771*

Note: Mean Satisfaction, *p<0.05, **p<0.01, ***p<0.001

The F-test (Table 3) indicates a good model fit. Hence, the statistical properties are good and the estimation results were credible. The ANOVA test suggests that it is statistically significant (significance level < 0.001). Hence, the model is strong enough to predict the linear relationships between the group of independent variables and the student satisfaction levels.

According to Table-3, regression coefficients of the e-platform quality and the facilitating conditions are 0.665 and 0.455 respectively, and their respective statistical significance levels are less than 0.001. This means that there are statistically significant influences of the aforementioned two variables on the overall satisfaction levels of the students. Consequently, a unit change in the e-platform quality and the facilitating conditions will lead to changes in the overall satisfaction levels by 0.665 and 0.455 units, respectively. In addition, e-platform quality is identified as the strongest predictor of overall satisfaction since the standardized coefficient (β) for three-platform quality is higher than that of the facilitating conditions. However, the coefficients for the teachers' delivery quality (0.018) is not statistically significant at the 0.05 level since the p-value ($p=.774$) is greater than 0.05. Thus, we could not conclude that the overall satisfaction can be statistically explained by the Quality of teacher's delivery of lectures in the online platform.

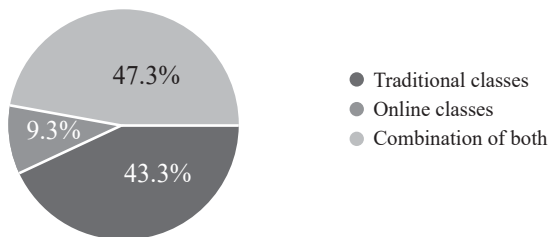


Figure 3: Preference of students: Traditional vs. Online classes

Our analysis shows that most of the students didn't agree that they will consider taking a whole course online (Figure 3). They would rather prefer the traditional classes (47.3%) or maybe a combination of both traditional and online methods (43.3%).

4. Discussion

The study shows that, students overall have a neutral feeling with their online classes, though in some context their satisfaction varied between rural and urban perspective. This finding is consistent with the extant literature (Irshad & Wahid, 2017). The study also reveals that both the e-platform quality and facilitating conditions have significant effect on students' satisfaction level whereas the effect of teacher's lecture delivery has insignificant effect. However, the study reveals that though the teacher's performance on online platform does not significantly affect on students' satisfaction level, students are found to be the most satisfied with teacher's performance in online platform followed by e-platform quality. The study also shows that students are not satisfied with the facilitating conditions. However, e-platform quality has been found to be the strongest predictor to predict students' overall satisfaction regarding online classes and it is found that students' satisfaction level is almost neutral regarding e-platform quality. As such, it is quite obvious that, the students have neutral opinion regarding their satisfaction on online classes. However, there are high-level of disagreements among the students regarding their satisfaction level (Std. deviation: 1.4189). This is more likely because an individual's satisfaction level depends on both his/her internal expectations, the actual performance of the online teaching facilities and social context as well. In addition, although, students' overall opinion on perceived satisfaction is neutral, the effect of facilitating conditions cannot be ignored as it is also a strong predictor (as $\beta=.365$) to predict the students' satisfaction level. Moreover, the study found that students' satisfaction level on facilitating conditions varies significantly between the students who are accessing online classes from rural area and those who are from urban area. This might be attributed to the fact that students accessing the online classes from rural area may not have adequate ICT infrastructure, required devices or suitable place to access the class comfortably. On the other hand, students accessing from urban area are in better position leading to relatively high satisfaction on the facilitating conditions. This finding is consistent with the existing literature (Oroma et al., 2012). We also found that for e-platform and teachers' delivery quality, students' level of satisfaction does not vary significantly in terms of their location of access (urban and rural).

4.1 Theoretical and Practical Implications

While the existing literature (e.g., Lee and Kim, 2010) focuses on different factors that influence students' satisfaction on e-learning, our study adds to that literature by exploring which factors have more influence (i.e., e-platform, facilitating conditions and teachers' delivery quality respectively) on the satisfaction level. From the developing country perspective, it also adds to the literature (e.g., Khan et al., 2012) that, in this context, the facilitating conditions are more important than teachers' delivery quality. The study also offers practical implications for academic institutions and policy makers. To enhance students' perception and to increase the level of satisfaction, the academic institutions should focus on improving the e-platform and facilitating conditions as they can significantly

improve the overall satisfaction level of the students. At the same time, they need to enhance or at least maintain the delivery quality of the teachers to sustain students' satisfaction level on this factor. The academic institutions and also the policy makers should critically consider facilitating conditions, specially for the students accessing online classes from rural areas. They should take necessary measures so that the facilitating conditions (internet facility, data buying capacity, suitable place for accessing class and devices required to access the classes) improve to make students satisfied and capitalize e-learning facilities at the maximum level.

The findings of this study are limited to the fact that the respondents are from the private and public universities for which it might not be generalized for entire Bangladesh. Further study could be undertaken including students from schools and colleges. Also, the demographic variables could be considered to unearth whether those variables have any impact on students' satisfaction regarding online classes.

5. Conclusion

This study identified three critical factors relating to the students' online learning experiences, namely, e-platform quality, facilitating conditions and teachers' delivery quality. Among the three, e-platform quality and facilitating conditions have been found as the strong predictors of overall satisfaction of the students. In addition, the study found that students are somewhat satisfied with teachers' delivery quality while they have neutral feelings regarding the e-platform. However, they are found to have somewhat dissatisfaction with facilitating conditions. The study shows that the satisfaction level significantly varies across students from urban and rural areas.

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