Original Article

Students' intention on post COVID19 continuance of e-learning

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Abstract

Traditional teaching methods have changed as a result of COVID-19's prominence. For many teachers, the lack of traditional face-to-face training was effectively made up for by online learning. Under emergency management, online learning may support students and schools while also generating special opportunities. In reaction to the epidemic, educational institutions from many nations have introduced extensive online course options. Online education during a pandemic is distinct from regular online education. An investigation on emergency management-related educational reform can be done by surveying students in higher education institutions University students were polled to discover more about their intentions to keep learning online despite the outbreak. Using the task-technology fit model, expectation confirmation theory was broadened to examine if the technical support for promoting online learning assisted students in completing course learning assignments while pandemic was going on and led to a persistent intention to take use of E-learning in the nearby future. When creating eLearning platforms, governments must exercise caution because students' intentions to continue their e-learning may change as a result of unanticipated crises like COVID-19. Through the use of online surveys, data were gathered. The research hypotheses were validated with partial least squares method and structural equation modelling on a total of 513 valid replies. The findings showed that continuing intention was substantially explained by the entire research design. After the COVID-19 pandemic, specific recommendations are made regarding how higher education institutions may support online learning strategies.

Keywords: E-learning, Post pandemic, education, online education.

INTRODUCTION

The COVID-19 pandemic greatly impacted conventional teaching and learning strategies. More than 180 nations globally were forced to close schools as a result of the pandemic by July 2020. Online learning services are being reevaluated worldwide in an effort to meet the issues facing the world's educational system. [1]This is not how the targeted journal cites Bangladesh used online education to balance and improvise the learning system in order to mitigate the consequences of nationwide school closures and to halt the spread of the virus. However, the country faces issues deciding what to teach and methods of teaching, whilst considering how to develop the nations education infrastructure in an online environment. The Bangladeshi Ministry of Education makes a variety of teaching platforms accessible so that students can participate in online learning using their smartphones, computers and laptops.

The promotion of online learning is connected with users' willingness to continue in an online environment and their level of satisfaction [2] with its continued development. Use of web-based technologies by students and their acceptance of them are important components for online learning success, also the way that students use online learning will determine its acceptance or not forever, from the standpoint of Bangladeshi universities, online learning during the pandemic is considered emergency management, particularly in light of the fact that many university courses have switched from a low number of online courses to being fully online and that the course content is based primarily on online learning resources provided by the Ministry of Education. The pandemic, has strengthened interest and capacity in online learning for both students and academic institutions. Platform use will affect learning, [3] which in turn will influence whether online learning still continues to be used in the post-pandemic future.

Online learning and the pandemic

By the year 2020, numerous new developments in education made widespread adoption of online learning a possibility. It has to be noted that access is a significant issue, numerous problems still exist, such as the fact that some areas, particularly rural ones, lack Internet connectivity and that different family members have varying demands for the utilization of home based technology and devices. To give students the opportunity to[4] participate in and complete online coursework, innovative solutions have emerged. For instance, mobile hotspots have been provided, course materials have been physically mailed and shared on social media, and instructional presentations have aired on regional PBS stations[5] . Global specialists can now participate in online courses thanks to synchronous web conferencing tools like MS Teams, Zoom and Google Meet. Additionally, presentations may be recorded for asynchronous viewing by specific students at their convenience. The value of practical, experiential learning has also enabled innovations like virtual field excursions and virtual labs in the post-pandemic age.

Additionally, the COVID-19 pandemic will affect lesson planning and programme design in the future. The limitations imposed by the pandemic allowed educators a chance to consider fresh approaches to teaching and learning. [6]Despite the fact that rethinking instructional methods was forced, the experiences offered a unique opportunity to evaluate methods that were useful, flexible and affordable in overcoming the limitations of an online setting.[7] Increased heterogeneity in teaching and learning methods will call into question the validity of "seat time" as the basis for academic credits, as these activities are rarely instructionally required and do not adhere to psychological ideas of how people learn.

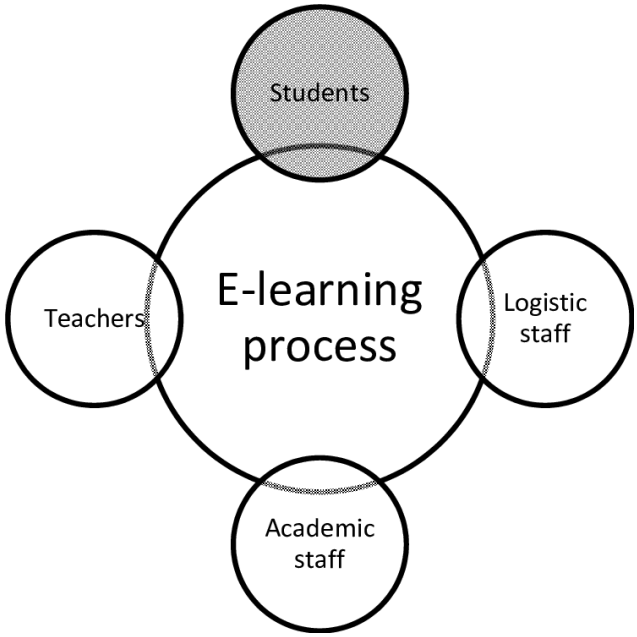

Figure 1: E-Learning Mechanism

Although the lines separating conventional desk-based learning and contemporaryonline learning continues to blur, the internet has accelerated this procedure. The transition to multi-channel teaching and learning (and subsequently more instructor prospects) is becoming standardised in light of the availability of improved frameworks and abilities that empower individuals to adopt multi-channel approaches. [8] New approaches to course delivery have emerged in light of the advance toward virtual learning, driven by a mixed-methods approach for teaching and learning. The utilization of various synchronous/asynchronous delivery methods to students of all age groups will surely continue to be a feature. Since instructors can uphold academic strategies whilst adopting a variety of delivery methods, a mix that has been upheld by of the previous generation of online instructors, future cycles of online education will not be confined to the practices of single education modalities.

Acceptance of Technology

When considering [9] how online learning is evolving, its promotion is influenced by users' propensity to continue using e-learning and by their satisfaction as either students or teachers. Student acceptance of e-learning technology and their desire to

use it will determine how well the methods will continue to be adopted and used. The success of online learning relies on student use of the technologies available. Though according to Bangladeshi universities, pandemic online learning is a form of emergency management, particularly in light of the fact that many university courses have moved to a fully online format. Throughout the pandemic, students have had to invest time learning how to use the online platforms and their' willingness to learn online has grown as a consequence of the pandemic. The utilization of online learning platforms has had a positive effect on the availability of technology and online learning resources, which will influence future use of online learning following the pandemic.

Literature Review

Online Learning Intentions

E-learning can take several forms, including web-oriented learning, blended learning, remote learning, etc. [10]All things considered, e-learning is generally understood to be the utilization of ICTs as the medium to assist learning or improve communication between students and instructors. The current e-learning arguments mostly center around three issues. First, e-learning has been seen as a solution for improved educational opportunities due to its ease of use and accessibility. In these settings, students can engage with instructors while learning without being in the same location. Student-centered flexibility is another intriguing component that is frequently highlighted[11] . Depending on their schedules, students can personalize their study timetable, showing that online learning prioritizes students and has the potential to become the norm in education. Last but not least, a number of researchers have concentrated on the psychological effects of e-learning on students. Asserting that e-learning helps to develop virtual communities that can serve as a setting for social interaction. However, it has also been noted that tchno-phobia and its related difficulties of environmental isolation can have a negative impact. In general, e-learning has a variety of effects on students, much like various online social communities.

In the past,[12] the expectation confirmation hypothesis was frequently used as the major justification for why people would keep using online learning. This strategy is widely used to describe and anticipate students' intents to keep studying. For instance, Lee discussed how the theory of planned behavior (TPB), and technology acceptance model (TAM), integrated expectation confirmation theory (ECT), and flow theory may all be used to account for learners' propensity to use online learning continually. Zhou [13]utilized social impacts to grow the anticipation affirmation hypothesis and supplanted apparent utility with learning results. The affinity of Bangladeshi undergrads to utilize massive open online courses (MOOCs) was the research issue for DeLone and McLean's information system (IS) success model and flow theory. They changed the original framework of the ECT by addition of two variables: the culture and attitude. Cheng looked into extended ECT and the ongoing use of online learning by nurses. Despite the fact that these studies showed that ECT's continued use of online learning has a solid scientific foundation, the higher education system actively promotes its use during the epidemic, which fosters an environment that is favorable to emergency management. It is crucial to discuss how the epidemic will impact China's embrace of online learning in the future.

Electronic education in post COVID-19 pandemic

The need for online based education has significantly expanded in post COVID-19 pandemic. Due to the pandemic, which has temporarily[14] forced campus lockdown, universities all over the world must rely on e-learning to maintain the educational system operating or at least accessible. Post COVID-19 epidemic has represented the economic advantages of online education. The entry of e-learning has made education more broadly available,[15] and the synchronous environment of learning is anticipated to minimize the barriers of distance by encouraging online interactions. In order to give instruction for more than 44,700 students post COVID-19 pandemic, Peking University began 4438 courses online. Students may receive their education from the comfort of their homes and dorms, without making groups claimed that online learning is a panacea for the COVID-19 dilemma.

Methodology

Post-COVID, the aim of the study is to investigate, (1) if students intended to continue utilizing e-learning in higher education and (2), if so, what specific effects are anticipated. The background to the study focused upon Bangladeshi university students' widespread adoption of e-learning following the COVID pandemic (spring semester of 2021). [16]The study utilises empirical

data, collected through online surveys. An online survey was developed and the link shared with university students who took part in e-learning in the spring semester of 2021 via WhatsApp.

The questionnaire was disseminated at universities in 6 major cities—Dhaka, Chattogram, Comilla, Rajshahi, Barishal,and Natore—that encompass the north, south, Centre, and west of Bangladesh in order to guarantee that the participants were fairly represented. Additionally, to reach people outside of the aforementioned regions, the questionnaire was also made available online via WhatsApp. The first portion of the questionnaire includes a succinct explanation of the study's objectives and a declaration that makes it clear that all the data collected will be kept confidential and used independently for research.

The questionnaire comprised three sections, (i) sociodemographic characteristics featuring questions related to gender, age, place of stay, and academic year, (ii)general anxiety disorder to gauge the severity of general anxiety. [17]The students are given the following two difficulties throughout the post-COVID-19 period of e-learning and asked how frequently they bothered them: (1) Having anxiety or being nervous; (2) preparing to enroll in online classes The two questions are graded on a 4-points scale as follows: never (score 0), rarely (score 1), frequently (score 2),

Results

ANOVA Evaluation

To know if the GAD will affect students' interest to continue with their online schoolwork, the responses were separated into 2 groups: the anxious group and the non-anxious group. The students who self-reported a complete GAD2 score were then put in the anxious group, while the others were put in the non-anxious group. A complete GAD2 score of at least 3 may be viewed as having a specific degree of general anxiety.

Overall, 369 (72%) out of 513 respondents announced having some level of general nervousness. This finding affirms different investigations that Stray is a significant issue during the pandemic. The consequences of the ANOVA examination are introduced in Table 1. For each measurement, the non-anxiety group's mean score is lower than the anxiety group's mean score. The 5-point Likert scale was used to represent that the degree of PU, PEOU, ATT, and CI in the non-anxiety group are higher than those in the anxiety group, going from firmly concur (1) to emphatically deviate (5). Besides, the intergroup contrast is biggest for PU (0.457) and smallest for PEOU (0.321), recommending that anxiety might influence PU more emphatically than PEOU.

Table 1: Tabular view of ANOVA

		Non-anxiety Group *(N* = **145) Mean**	**SD**	**Anxiety Group** *(N* = **368) Mean**	**SD**	
						***P* value**
PU	PU1	2.279	1.042	2.756	0.936	0.000***
	PU2	2.411	1.132	2.866	1.012	0.000***
	PU3	2.376	1.056	2.811	0.968	0.000***
PEOU	PEOU1	2.022	0.972	2.371	0.891	0.000***
	PEOU2	1.855	0.932	2.123	0.816	0.001***
	PEOU3	1.763	0.925	2.115	0.861	0.000***
ATT	ATT1	2.131	1.038	2.461	0.901	0.000***
	ATT2	2.055	1.083	2.458	0.914	0.000***

	ATT3	2.001	0.876	2.314	0.868	0.000***
CI	CI1	2.013	1.052	2.412	0.974	0.000***
	Cl2	2.022	1.138	2.431	1.035	0.000***
	CI3	2.096	1.184	2.487	1.046	0.000***

TAM outcomes

TAM is frequently used in e-learning to determine students' intentions. Empirical data for two of the the non-anxiety groups and the anxiety groups are entered in the modelling, and the outputs are given, to see if the TAM model is appropriate for use in e-learning in the wake of the COVID-19 pandemic.

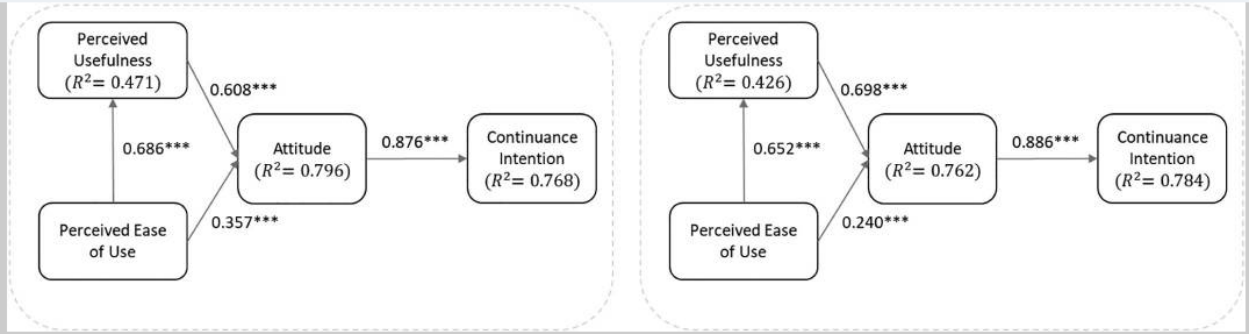

Figure 2: Outcomes of TAM

Comparatively, the non-anxiety group's r-square value for the PU and ATT is larger than the groups of anxiety r-square value for CI in terms of explanatory ability. Despite a little variation, both models have shown that TAM may well explain students' intentions to engage in online learning.

Discussion

The discussion is presented in the 4 sections. Studying the inter-group differences in between the anxious and non-anxious group is first important in order to better understand how general anxiety level affects e-learning intention. It is followed by more description of the influence process. The theoretical and practical implications are presented in subsections three and four.

Real-world applications

For practitioners, the study has three main consequences. First of all, the study added a processed picture of anxiety to the TAM model, in contrast to other studies that concentrated on computer anxiety. The model's connections are verified, highlighting the need for colleges and universities to incorporate anxiety factors from both internal and external settings into their e-learning intentions (e.g., anxiety of computer, stress of academics, fear of disease). Therefore, avoidance typically results in anxiety becoming worse over a period of time. Instead, higher education institutions should make minor adjustments to limit its adverse effects.

The influencing mechanism, on the other hand, demonstrates that worry is likely to amplify the PU-intention effects, indicating that raising PU is one of the most successful methods for keeping students in e-learning while they may be subjected to anxiety.[18] It is highly recommended that instructors restructure their curricula for online delivery with a more student-centered approach to enhance PU. This could be a method for really focusing on students who might be encountering anxiety issues to prevent further complications/issues. This is true even though the study offers no factual support for the idea that PU or intention directly contribute to the reduction of anxiety.

Implications

This study's first innovation is the incorporation of a thorough viewpoint on anxiety to provide nuanced understanding of student intentions regarding e-learning in the post COVID-19 pandemic world. The research focused on the requirement to incorporate anxiety from various sources, like afraid of the disease, stress of academic, and lack of social interaction into the TAM model in order to provide a more advanced view of students' e-learning intention, even though computer anxiety is typically thought of as an antecedent for e-learning intention.[19] The research also identifies a mechanism by which anxiety affects a person's intention to engage in online learning, in keeping with the TAM model. It is anticipated that the mechanism of influence can be expanded to explore the impact of anxiety of various data system acceptance given the TAM's extensive applicability in other information system applications. The study further increases our theoretical knowledge of how those who experience environmental anxiety use of technology.

Global outlook

In response to the COVID-19 pandemic, it is imperative that technology, administrative procedures, and the infrastructure supporting access and delivery of online learning quickly adapt. Even though there are still access issues, many assets have been saved, and formal methods have been created to assist students with gaining admittance to course materials, work with correspondence among teachers and students, and deal with the organization of web-based learning. The upcoming age of online students has a make way in front of them as extra open doors for extended admittance to and valuable open doors for online training have been laid out.

Prior to the pandemic, [20] the fundamental goal of distance and online education was to provide those who couldn't otherwise enroll in a traditional, location-based academic programmes access to education. The target audience and the larger learning ecosystem altered when the objective changed to facilitating instructional continuity. It will be interesting to see if emergency remote instruction is still used in the next generation of schooling when the COVID-19 pandemic is no longer a threat. Online learning will undoubtedly reach new audiences, though. The flexibility and learning possibilities that evolved out of a need will potentially make it challenging to distinguish between classroom-based education and online learning.

Future Scope

There are various limitations to this study. First, by combining the numerous sources of anxiety, the study provides a model examination of the effect of anxiety on online learning. The purpose of e-learning, however, may be affected differently depending on the cause of the anxiety, which might be internal (such as computer anxiety or academic stress) or external (such as virus fear or a lack of social interaction). Therefore, it is urged that future studies examine the effects of each type of anxiety separately to provide a more in-depth understanding of their significance. Second, despite the GAD-2's claims of having acceptable sensitivity and specificity in measurement of generalized anxiety disorder.

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