The Impact of Online Learning Facilities to the Effectiveness of Emergency Online Learning: A Case Study on NSBM Green University Town, Sri Lanka

K. T. Dissnayake[1], K. Peiris[2], M.Y.N Gunawardhana[3]

[1,2,3] *Faculty of Business, NSBM Green University, Homagma , Sri Lanka*
kasun@nsbm.ac.lk
kalni.h@nsbm.ac.lk
yasodha.n@nabm.ac.lk

ABSTRACT

Students and their learnings are what makes a difference mostly in characterizing the fate of a nation. Accordingly, this research paper addressed how effective emergency online learning as a case study on NSBM green university town, Sri Lanka. With the expectation of noting the research problem, the effectiveness of Emergency online learning compared to the traditional in-class learning specially during coronavirus crisis was examined. Research took quantitative aspect by conducting survey and taking 1517 students as the sample using simple random sampling technique. Data were analyzed using a descriptive analysis and a statistical analysis and it was found that the impact of online facilities used to convey the online learning experience was way below the moderate level while the relationship between the online facilities provided and the online learning experience of students was also on a moderate level giving out a vague attitude on the preference for the online learning concept. Moreover, it was concluded that it was not a quite effective initiation during the COVID-19 pandemic and the obstacle on the continuation of academic related tasks as the pandemic forcefully shutdown several activities especially in the educational sector.

Keywords – Online Learning, Emergency Online Learning, Online Learning Facilities

1. INTRODUCTION

Since the outbreak of novel corona virus (Covid19), this pandemic acted as the host of drastic changes in how institutes including companies, schools and universities operate and deliver their services (Wyse et al., 2020). By the beginning of year 2020, this pandemic demands on immediate hold of in-person education in order to comply with health and safety regulations (Chen et al., 2020). Forced rapid shift from traditional physical learning to emergency learning was brought up to safeguard both educators and students from the contagious nature of Covid19 virus (Schultz & DeMers, 2020) Thus, this epidemic called for the forced change on operating digitally and utilization of digitally driven teaching and learning platforms for organizational continuity (Beaman & Davidson, 2020). This adoption of online solutions in recent months has been unprecedented. In the short term, educators are applying a 'first aid' solution by switching entirely from in-person to remote instruction, a move that has been forced upon them by sudden mandatory campus closures (Kandri, 2020). Educationalists, with new development of this pandemic are now realizing that "remote learning" is a kind of primary level of research in the complex process of offering online education which have student engagement tools and teacher training in to it (Kandri, 2020).

1.1. Problem Statement

Amidst the COVID – 19 pandemic, as a strategy to continue education to secure the flow of delivery, emergency online learning was carried out by most of the higher educational institutes in Sri Lanka. So far, e-learning has been effective to the people that understood its value. It offers the chance to have great results for lower costs and sometimes for no costs at all. Despite these, due to the global pandemic situation that is faced by the community, online learning has become a savior in these arduous times. Education may have several purposes, and online courses help to fulfill it. Hence, this study intends to examine the effectiveness of emergency online learning compared to the traditional in-class learning, especially during coronavirus crisis in light of the impact from online learning facilities utilized on the student's learning experience during the pandemic.

1.2. Research Question

What is the impact from online learning facilities on online learning experience?

1.3 Research Objective

To identify the impact from online learning facilities on online learning experience

2. LITERATURE REVIEW

Main purpose of this section is to discuss the above declared research question with the support of past literature. Key terms, theories and models presented by the preceding researchers, that would assist in finding answers for the research questions will be utilized.

2.1. Learning

Learning is a change in human disposition or capability that persists over a period of time and is not simply ascribable to processes of growth (Gagne & M, 1984). Leaning consists of basic concepts such as act, reflex, instinct, experience, behaviour, sense, perception, attention and memory (Akdeniz et al., 2016). Act reflects to the performance. What is done by a person establish his or her performance. Reflex gives the meaning for the behaviours arises suddenly, in which those behaviours are inborn, quite immediate, and consistent and there should be a stimulus behind the action. Instinct implies an act that can be seen in all the members of a group that has been developed because of maturity not purely because of learning. Behaviours are both implicit and explicit (Akdeniz et al., 2016).

2.2. Online Learning

Online learning can be referred as a "wholly" online learning which uses the technology medium or context with which it is used (Rohsenow & O'leary, 1978). Online learning is mainly provided in two ways—in synchronous and asynchronous environments (Jolliffe et al., 2012). The time lag attributes of asynchronous learning unlike synchronous learning in online platforms take the advantage of accessing materials anytime and anywhere, ability to reach a greater mass at the same time, and uniformity of content. Online learning along with face-to-face learning is successfully used in industry as well as academia with positive outcome (Panigrahi et al., 2018).

2.3. Emergency online learning

The adoption of online learning in a situation of emergency represents a need, but it has also stimulated experts, policymakers, citizens, teachers, and learners to search for new solutions. This is producing a shift from the concept of online learning to emergency remote teaching, which represents "a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances"(Charles Hodges et al., 2020). Due to the COVID-19 pandemic, many students around the world had to transfer from face to-face instruction to an online learning environment in the middle of the semester. People have limited information processing capacity, and there is potential that combinations of learning modalities can result in-cognitive overload, impacting the ability to sufficiently learn new information (Patricia Aguilera-Hermida, 2020)

2.4. Effectiveness of Emergency online learning

During the school closures, existing inequalities connected to different socioeconomic situations have increased mainly due to the following reasons like lack of resources, including access to educational technologies and the Internet and lack of physical spaces to carry out home-based learning among families from poorer backgrounds, who lack the basic skills to support their children, especially regarding secondary education (Ferri et al., 2020). There is some evidence that school closures can produce significant losses in educational achievement, in particular for disadvantaged students (Eyles et al., 2020). In the developed countries even, these factors have resulted in a large gap in how children have been learning during this emergency period (Bol, 2020). In developing countries, in which the majority of students do not have access to the Internet and adequate learning environments, such discrepancies are even more apparent (Owusu-Fordjour et al., 2020). Provision of more adequate e-learning platforms to increase access to the Internet and develop an interactive learning approach is suggested by many of the authors (Ferri et al., 2020)

3. METHODOLOGY

The approach of this study is quantitative approach while the type of study be analytical. The population of the research was considered as the entire student population in NSBM Green University Town. To deep dive into the study, research problems were discussed with technical aspect as well as with a comparison to the physical delivery of lectures by taking 1517 students representing all the three faculties in the university. Simple Random Sample was used as the sampling technique.

Data collection was done through a structed online questionnaire, containing 27 questions in which 26 are close ended and with only one question open ended to gain insight thoughts of the students. Data were analyzed using Statistical Package for Social Sciences (SPSS) by undertaking a descriptive analysis and statistical analysis to come up with comprehensive analysis. Below Hypothesis was developed to achieve the objectives of the study.

H_0: There is no impact from online learning facilities on online learning experience.

H_1 : There is an impact from online learning facilities on online learning experience.

Finally, prior to this research, approval was obtained from the management of National School of Business Management to collect data from the undergraduates. Upon the approval, the name of the institute was used as NSBM Green University in the research paper. No participant was forced to participate for the study and voluntary participation were appreciated while ensuring academic integrity during the documentation process.

3.1. Operationalization

Table 1-Operationalization

Variable	Indicators
Online Learning Facilities (OLF)	What is the internet connection you use for online learning (OLF1)
	How do you connect to online lectures (OLF2)
	Rate the internet signal strength during online lectures (OLF3)
	What was the platform used for online teaching (OLF4)
	Do you use 'Chat Option' to communicate with your lecturer (OLF5)
Online Learning Experience (OLE)	I experienced high video quality in online lectures (OLE1)
	I experienced high audio quality in online lectures (OLE2)
	Lecture materials were clearly visible (OLE3)

	I can easily communicate with the lecturer through online platforms (OLE4)
	Online learning is a comfortable learning method for me (OLE5)

4. ANALYSIS AND DISCUSSION

4.1. Reliability and Validity Analysis

4.1.1. Reliability

Table 2-Reliability

	Reliability Statistics
	Cronbach's Alpha
Overall	.850
OLF	.705
OLE	.834

Considering the overall reliability derived, the Cronbach's Alpha is at a level of 0.850 which is on a very satisfactory, acceptable level that the collected data using the questionnaire is of high reliability since it is above the threshold value of 0.7.

When considering the reliability value of the Online Facilities, the Cronbach's Alpha is at a level of 0.705 which is on a satisfactory, acceptable level that the collected data using the questionnaire is of high reliability since it is above the threshold value of 0.7.

The reliability value of the Online Learning Experiences, its Cronbach's Alpha is at a level of 0.834 which is on a very satisfactory, acceptable level that the collected data using the questionnaire is of high reliability since it is above the threshold value of 0.7.

4.1.2. Validity

Table 3-Validity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.902
Bartlett's Test of Sphericity	Approx. Chi-Square	7353.500
	df	45
	Sig.	.000

Furthermore, as per the KMO and Bartlett's test, the value 0902 indicates that the data collected for the study is suitable for structural detection and useful.

4.2. Descriptive Analysis

Table 4-Descriptive Analysis 1

Descriptive Statistics			
	N	Mean	Std. Deviation
MEAN_OLF	1517	3.3418	.69156
Valid N (listwise)	1517		

Considering the overall mean value of the online learning facilities, the independent variable, it is at a 3.34, which means a moderate level, that students are quite not satisfied with the online learning facilities, considering the minimum value being 1 and the maximum value being 4 according to the OLF scale items.

Table 5-Descriptive Analysis 2

Descriptive Statistics			
	N	Mean	Std. Deviation
MEAN_OLE	1517	3.4022	.62555
Valid N (listwise)	1517		

Also, when considering the overall mean value of the dependent variable, the online learning experience, it is at a moderate level considering the minimum value being 1 and the maximum value being 4. Therefore, it too denotes that the students stand on a vague attitude regarding the satisfaction level of online experience and preference towards it.

4.3. **Correlation Analysis**

Table 6-Correlation

Correlations			
		MEAN_OLF	MEAN_OLE
MEAN_OLF	Pearson Correlation	1	.604**
	Sig. (2-tailed)		.000
	N	1517	1517
MEAN_OLE	Pearson Correlation	.604**	1
	Sig. (2-tailed)	.000	
	N	1517	1517

According to the correlation analysis conducted as per the above table, the correlation value between the Online Learning Facilities and the Online Learning Experiences falls onto a value of 0.604. Which denotes that, the relationship between these two variables (independent and dependent respectively) are having a positive moderate relationship at a 0.604. When considering the Sig. (2-tailed) value being at 0.000, it denotes that the relationship between Online Learning Facilities and Online Learning Experiences is a significant level as it is below the 0.05 significant level threshold. Furthermore, it denotes that no matter where the level of online learning facilities is, the average amount of students in the considered sample have not experienced a satisfactory level of online experience.

4.4. **Regression Analysis**

Table 7-Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.759[a]	.576	.574	.38835
a. Predictors: (Constant), MEAN_OLF				

As per the regression analysis conducted, the R-Square value is at 0.576 which means online learning experience, the dependent variable of the students is explained by 57.6% by the independent variable, online learning facilities at a moderate level.

4.5. **Hypothesis Testing**

Table 8-Hypothesis Testing 1

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	40.531	1	40.531	268.740	.000
Residual	29.862	198	.151		
Total	70.393	199			

Dependent Variable: MEAN_OLE

As per the above ANOVA statistic, it indicates that there is a significant relationship existing between dependent and independent variables since the *p*-value is lesser than the 0.05 threshold.

Table 9-Hypothesis Testing 2

Coefficients					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model	B	Std. Error	Beta		
1 (Constant)	1.333	.135		9.848	.000
MEAN_OLF	.642	.039	.759	16.393	.000

Furthermore, as per the above coefficients table, since the *p*-value of 0.000 is lesser than the 0.05 threshold, it denotes that there is a significant effect from online learning facilities on the online learning experience. Hence, the linear regression model can be developed as below based on the multiple regression result.

$$\text{Online Learning Experience} = 1.333 + 0.642_{\text{Online Learning Facilities}}$$

It defines that there is a 0.642 moderate impact from online learning facilities on the online learning experience when online learning experience changes by one unit.

5. DISCUSSION

According to Ferri et al (2020), rise of the COVID-19 epidemic required institutes to move for online learning in an unexpected rapid way. Same does happen with NSBM Green University, where emergency online teaching and learning was adopted to have the smooth flow of academic activities of the undergraduates.

According to the analysis carried out, it was evident that the impact of online facilities used to convey the online learning experience was below the moderate level. Owusu-Fordjour et al., 2020 also argued that in developing countries, in which the majority of students do not have access to the Internet and adequate learning environments, such discrepancies are even more apparent. The technological challenges are mainly related to the unreliability of Internet connections and many students' lack of necessary electronic devices (Ferri et al., 2020).

The relationship between the online facilities provided and the online learning experience of students was also proven to be at a positive moderate level during the study on Effectiveness of Emergency Online Learning: A Case Study on NSBM Green University Town, Sri Lanka. It was also concluded that academic decline will likely occur but may be tempered by the increased use of practice tools and may impact grades and schools differently (Wyse et al., 2020).

6. CONCLUSION

As per the research study conducted on the impact of online facilities provided at the university to convey the online learning experience, considering the necessity of conducting online lectures due to the COVID-19 pandemic situation and in order to retain smooth continuation of academic activities at the university, the impact has not been on a satisfactory level where according to the analysis, it clearly denotes that the impact was way below the moderate level while the relationship between the online facilities provided and the online learning experience of students was also on a moderate level giving out a vague attitude on the preference for the online learning concept. And also, there could have been more other factors involved due to such low-moderate impact such as; students not being able to engage in other student development activities like clubs and societies, students missing the university life, having less ability to make further clarifications especially related to analytical scenarios occurring during module lectures, physical and mental straining due to continuous hours of lecturing via the online platform (i.e. eye straining, muscle pains in the back and shoulders, other related ergonomic issues) etc. Also, as per the study, considering the overall mean values of online facilities and the learning experience, even though online lecturing would help to retain the continuity of academic work at the university, the effectiveness of this methodology of online teaching and learning, in the case of the NSBM Green University, we can conclude that it was not a quite effective initiation amidst this pandemic situation and the obstacle on the continuation of academic related tasks. Moreover, even though this method could be a success in foreign countries hence the students are more exposed to the online learning facilities and experiences according to previous studies brought in as literature to this study, but considering the Sri Lankan context and in the case of NSBM Green University, this online teaching and

learning practice has not been a successful one when especially considering the online learning experience experienced by the students who is the main target audience of this study

REFERENCES

Akdeniz, C., Bacanli, H., & Baysen, E. (2016). *Learning and teaching : Theories, Approaches and Models* (Z. Kaya & S. Akdemir (eds.); 2nd ed., Issue June).

Beaman, A., & Davidson, P. M. (2020). Global service-learning and COVID-19—What the future might look like? *Journal of Clinical Nursing*, *29*(19–20), 3607–3608. https://doi.org/10.1111/jocn.15369

Bol, T. (2020). *Inequality in homeschooling during the Corona crisis in the Netherlands. First results from the LISS Panel.* https://doi.org/10.31235/osf.io/hf32q

Charles Hodges, Stephanie Moore, Barb Lockee, Torrey Trust, & Aaron Bond. (2020). The Difference Between Emergency Remote Teaching and Online Learning | EDUCAUSE. In *EduCause*. https://www.academia.edu/42679104/The_Difference_Between_Emergency_Remote_Teaching_and_Online_Learning

Chen, E., Kaczmarek, K., & Ohyama, H. (2020). Student perceptions of distance learning strategies during COVID-19. *Journal of Dental Education*, *July*, 1–2. https://doi.org/10.1002/jdd.12339

Eyles, A., Gibbons, S., & Montebruno, P. (2020). *Covid-19 school shutdowns: What will they do to our children's education?*

Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations. *Societies*, *10*(4), 86. https://doi.org/10.3390/soc10040086

Gagne, R. M., & M, G. R. (1984). The condition of learning. *Gagne R M. Domains of Learning. Interchange*, *2*(21), 1–8. http://garfield.library.upenn.edu/classics1984/A1984SQ70000001.pdf

Jolliffe, A., Ritter, J., & Stevens, D. (2012). *The Online Learning Handbook: Developing and Using Web-based Learning - Alan Jolliffe, Jonathan Ritter, David Stevens - Google Books*. Kogan Page Limited . https://books.google.lk/books?hl=en&lr=&id=qCnQ67frpS8C&oi=fnd&pg=PP2&ots=wUE8KIR7bN&sig=9v0cXHWMXuMUfrbogCKmtHtqrYc&redir_esc=y#v=onepage&q&f=false

Kandri, S.-E. (2020). *How COVID-19 is driving a long-overdue revolution in education*. https://www.weforum.org/agenda/2020/05/how-covid-19-is-sparking-a-revolution-in-higher-education/

Owusu-Fordjour, 1i, C., Koomson, C. K., & Hanson, D. (2020). European Journal of Education Studies THE IMPACT OF COVID-19 ON LEARNING-THE PERSPECTIVE OF THE GHANAIAN STUDENT. *European Journal of Education Studies*, *0*(0). https://doi.org/10.5281/zenodo.3753586

Panigrahi, R., Srivastava, P. R., & Sharma, D. (2018). Online learning: Adoption, continuance, and learning outcome—A review of literature. *International Journal of Information Management*, *43*(July 2016), 1–14. https://doi.org/10.1016/j.ijinfomgt.2018.05.005

Patricia Aguilera-Hermida, A. (2020). College students' use and acceptance of emergency online learning due to COVID-19. *International Journal of Educational Research Open*, *1*, 100011. https://doi.org/10.1016/j.ijedro.2020.100011

Rohsenow, D. J., & O'leary, M. R. (1978). Locus of control Research on alcoholic populations: A review. I. Development, scales, and treatment. *Substance Use and Misuse*, *13*(1), 55–78. https://doi.org/10.3109/10826087809039264

Schultz, R. B., & DeMers, M. N. (2020). Transitioning from Emergency Remote Learning to Deep Online Learning Experiences in Geography Education. *Journal of Geography*, *119*(5), 142–146. https://doi.org/10.1080/00221341.2020.1813791

Wyse, A. E., Stickney, E. M., Butz, D., Beckler, A., & Close, C. N. (2020). The Potential Impact of COVID-19 on Student Learning and How Schools Can Respond. *Educational Measurement: Issues and Practice*, *39*(3), 60–64. https://doi.org/10.1111/emip.12357