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Undergraduate Student's Perspectives on E-learning during COVID-19 Outbreak in Sri Lankan Universities

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ABSTRACT

As education moves e-learning all over the world due to COIVD-19 pandemic, students spend more time on e-learning than ever before. This is also equally applied to the Sri Lankan education system. Thus this study examines the undergraduate students' perspectives on e-learning during the COVID-19 outbreak in universities in Sri Lanka. Primary data was obtained from undergraduate students in Sri Lankan university using a structured questionnaire via Google form. The perspectives on e-learning education during the COVID-19 pandemic was investigated using descriptive statistics and frequency analysis. The majority of the undergraduate students felt that the e-learning version of education saved travel time and cost of accommodation. Furthermore, the study revealed that the majority of students were happy with the e-learning form of education during the pandemic since it allowed them to finish their degrees faster and access the labor market without a delay. The biggest challenges with e-learning, according to the student responses, were internet access, device availability, visionary issues, technical issues, and stress. As a result of this COVID -19 pandemic, if higher education officials in Sri Lankan universities want to keep e-learning education on going, they must focus on offering cost-effective, high-speed data connections while minimizing technological hurdles. At the same time, it is important to update and revise the curriculum content according to this new mode of education since this is a completely new situation for all. There is relatively little research on students' perspectives on e-learning education during the COVID-19 pandemic in the Sri Lankan context and it will provide some important highlights to the researchers, parent and academics as well.

Keywords-- E-learning, Undergraduate Students, Internet, COVID -19 Pandemic

I. INTRODUCTION

COVID-19 pandemic spread all over the world in 2020 and adversely affected all aspects of the economy. Still, most of the economies are struggling with many issues such as unemployment, economic slowdown, low level of income, high level of government debt, decreased business in the services sector, and so on. Further, the entire world has been facing the unprecedented coronavirus health crisis for almost a year now. Over 133 million coronavirus cases have been reported and around 3 million people have died due to the COVID-19 pandemic worldwide. Not only that, the COVID-19 pandemic has interrupted education for 1.6 million worldwide over the past year (WHO 2021). In Sri Lanka, the government has decided to closed all educational institutions from 12 March 2020, including higher education institutions, 15 state universities, and around 40 other state and non-state tertiary education institutions.

Hayashi et al. (2020) stated that the temporary closer in tertiary education due to the COVID-19 could delay the creation of the leaders and skilled workforce the country dearly needs to successfully transition to upper-middle-income status. To reduce the adverse effects of the pandemic on education, higher education institutions searched for solutions using Moodle-based learning undergraduate systems (LMS). Further, during the outbreak, the Lanka Education and Research Network (LEARN) was connected to university web servers and used for e-learning education continuously via the Zoom platform. As such, e-learning education remains an important means for delivering tertiary education, especially to mitigate issues created by the pandemic period. At the same time, the interruption of teaching has delayed students' overall progress and resulted in a broader socio-economic impact.

Moving from physical learning to an e-learning system during this juncture can be considered as a radical change in the higher education system in Sri Lanka. Therefore, it is essential to understand the impact of this major sweeping from the traditional classroom to e-learning education in the higher education sector in Sri Lanka. When considering the above, this research aims to explore the undergraduate students' perspective on the shift from traditional system to e-learning mode and identify the implications since students are the main stakeholders in this education system. The students may have received a different experience in adopting such a

drastic change in a shorter period of time. Most of the higher education institutes already have completed two semesters of educational activities using this virtual platform. Before proceeding further, this is high time for us to examine the impact in terms of cost and benefits of the e-learning process from the undergraduate students' perspective. Thus, this research aims to identify the positive and negative impact of e-learning education during the COVID-19 pandemic in the higher educational setting in the Sri Lankan context as a developing country. The findings of the study can be supportive to the administrators in higher education institutes (HEI) and policymakers of HEIs who are planning to implement e-learning mode on a regular basis or as a hybrid mode in the future.

II. LITERATURE REVIEW

The COVID-19 pandemic has drastically questioned the customary mode of education. The challenges generated on education by the pandemic had to be identified by the educational institutions to take advantage of adopting a new system of e-learning. E-learning is completely different from traditional learning, thus the shift from conventional teaching in education to the e-learning mode required more attention to deliver required knowledge and skills properly. Adjusting traditional mode to e-learning teaching within a short period off time was the major challenge for HIEs specially for developing nations.

Tari and Amonkar (2021) examined the impact of COVID- 19 pandemic on Higher Education in India. They showed that the use of digital resources is essential but it should not create a digital division between rich and poor. Therefore, a discussion of the results highlighted that the e-learning platform should be prioritized for greater inclusivity, connectivity, and equitability. Further, they revealed that it is important to understand the experience and issues of the students on e-learning education and prepare accordingly for further design of the study to share benefits equally among students.

Lewis et al. (2021) indicated that due to COVID - 19 pandemic over 8.8 million schoolchildren in the UK have experienced severe disruption to their education. And with prolonged school closures and national exams cancellation for two consecutive years, created some negative impacts on students' lives and behavior. They explained that for some students education is the only way to come out of poverty, for others school is a haven for them. The study revealed that learning loss, reduced social interaction, isolation, reduced physical activity, increased mental health problems, and potential for increased abuse, exploitation, and neglect have all been related to school closures. Reduced future income and life expectancy are associated with less education in developing countries. It is clear that on the other hand, these are some of the benefits that can be achieved through education.

Miliszewska, (2007) found that the students face major hurdles with distant learning. According to him lack of face-to-face communication is one of them. This study indicated that physical education benefits the learning process via face–to–face communication and is giving a better opportunity to sharing knowledge and asking for help, not only that it is easier and more interactive. On the other hand, Bowen, (2012) revealed that e-learning may offer an advantage for individuals who are unable to attend traditional full-time face-to-face classes at university due to personal problems or financial difficulties. As stated by Rashid and Yadav (2020), shifting from face-to-face classes to e-learning systems has created the focus on using e- learning tools and platforms for effective student engagement to enhance the quality of education. But it may have limitations of accessibility and affordability for many students in the education system. Duraku Hoxha (2020) revealed that most of the students face some difficulties when attending e-learning due to many reasons like a distraction, the overload of assignments, doubts, and concern about their results, lack of organization, and time management. Further, they have discussed that the practical work which is one of the most important parts of the courses, is adversely affected due to the closure of the university and social distancing during this pandemic.

Allen and Seaman (2011) showed that e-learning education offers some benefits which are not available in face-to-face classes such as convenience and flexibility. Berenson, et al. (2008) pointed out that e-learning has different positive as well as negative characteristics than traditional classes. The physical class has space to judge student level of understanding and allows to change instructor's behavior accordingly. It allows observing the non-verbal behavior of students too. Students' issues, questions can be solved immediately to minimize the level of misunderstandings. Such spaces are not available with e-learning and the only way to communicate all matters are primarily based on texting. Muilenburg and Berge (2005) highlighted that e-learning decease motivation of the students. Berenson, et al (2008) showed that if e-learning courses are poorly designed, it leads to negative emotions like frustration, annoyance, and discouragement among students. Further, if students do not have the required skills to engage with e-learning again it can lead to creating some negative emotions. Cao and Sakchutchawan (2011) also revealed that students enrolled in the traditional mode were highly satisfied than e-learning courses. Song, et al. (2004) studied factors influencing e-learning effectiveness among graduate students. Results of the study revealed that e-learning effectiveness depends on two key factors, such as course design and time management. At the same time,

they revealed that lack of community and technical problems were most challenging for e- learners.

Miller (2016) showed that the environment of e-learning is an impersonal nature and students have to depend largely on their own. Further, this study revealed that most of the students do not have the technical skills which are necessary to navigate through e-learning. And lack of electricity and connectivity across all the places is becoming another issue relating to e-learning. Singh and Thurman, (2019) found that through e-learning systems and environments, students have the freedom to get connected with their instructors without geographical barriers. Dhawan, (2020) explained that e-learning provides opportunities for students to develop new skills and independent learning.

The above literature review revealed that due to COVID -19 pandemic, students as well as authorities of HEIs faced numerous difficulties as well as enjoy some benefits via e-learning education. In this context, this study is expected to find out the benefits they received via e-learning platforms and problems encounter by students via e-learning during this pandemic.

III. OBJECTIVES AND METODOLOGY OF THE STUDY

After reviewing the prevailing literature and current scenario of the country, the succeeding objective is formulated for the study. The objective is to examine undergraduate student's perspectives on e-learning education in universities of Sri Lanka during the COVID-19 outbreak.

The target population of this research was undergraduate students from one state university namely; University of Sri Jayewardeneura in Sri Lanka. This university is the largest public University in Sri Lanka in terms of the student population. In this study, we have employed the purposive sampling method to select the university, faculty and also respondent. The population of this study is the underguaduate students of the Faculty of Management Studies and Commerce. The Faculty of Management Studies and Commerce is the largest faculty in the university system in Sri Lanka and was founded in the 1960s and has a proud history and heritage as the Pioneering Faculty for Management Education in Sri Lanka. As the largest faculty in Management Studies and Commerce, it currently enrolls about 5,000 internal undergraduate students. The sample size of this study is about 1000 undergraduate students. The research is based on primary data and data were collected using a structured questionnaire via google form from the undergraduate students.

IV. RESULT AND DISCUSSION

Data analysis was done using descriptive statistics and based on frequency analysis to explore the positive and negative perspectives on e-learning education during the COVID-19 pandemic from February 22nd to March 22^{nd,} 2021.

As specified in the objective and the scope of the study, the results were given below. First, we have explained the demographic as well as selected characteristics. Secondly, the main challenges faced by students through e-learning education are presented. Finally, the benefits and problems of e-learning education during the pandemic period as stated by the undergraduate students are specified.

A total of 278 students responded to the questionnaire and 43 questioners were removed because of data incompleteness. For further analysis, 235 valid questionnaires were used.

Table I shows the respondents by gender, source of the internet accessibility, quality of the network that students used to enroll with e-learning educations, type of devices they used, and ownership of the device. The gender distribution of the sample was 31 percent (73) males and 69 percent (162) females. The majority of the students are getting internet access through smart mobile phones when they join e-learning education. About 25 percent of students had broadband internet accessibility. Only half of the students had stable and good internet connectivity which was 50 percent of the sample. Similarly, about 35 percent of students faced the issue of poor internet connectivity. About half of the respondents had at least a laptop or mobile phone while around 45 percent of undergraduate students were using more than one device such as a mobile phone and laptop to receive e-learning education.

Table I: Gender, Type of Device and Ownership

Gender	Male	73 (31%)	Female	162 (69%)	
Source of Internet Accessibility	Mobile Phone only	Broadband only	Dongle and Mobile	Mobile and Broadband	
No. of Students	110	58	27	40	
Quality of network	Excellent and stable	Good and stable	Poor	No coverage	
No. of Students	11	137	83	04	
Device	Desktop Computer + Smart Phone	Laptop + Smart Phone	Tablet + Smart Phone or Laptop	**Smart Phone only**	**Laptop only**
No. of Students	15	116	06	67	49
Ownership of the Device	Own	Shared with Family	Shared with Friends		
No. of Students	123	103	09		

Source: Author Compiled, 2021

In Table II, we present results of the reliability of the items based on the Cronbach's α value and descriptive statistics of the items. All items were found to be reliable. The Cronbach's α for these items was greater than 0.7 the threshold suggested by Nunnally (1978) for social sciences. The arithmetic means of the respondents' answers for each item are presented in Table II column 3and 4 below. There were 18 items and the mean value for each item ranges from the minimum value of 2.850 to a maximum value of 4.217. From this mean value, we conclude that undergraduate students of Sri Lanka perceived that e-learning education modes were not strongly acceptable. The highest mean value is indicated by saving traveling time. The majority of the students agreed that they use information technology during this pandemic period and the mean value is 4.022. The lowest mean value is indicated by the achieved academic quality and learning outcomes via e-learning education. The standard deviation of the items ranges from 0.8848 to 1.3130. The highest standard deviation is presented by the item of the likelihood of attending e-learning education in the future when the pandemic is controlled. Regarding these statements, students from faculties in-state university of Sri Lanka do have different viewpoints with e-learning education. The lowest standard deviation is indicated by the required skills of the students to attend e-learning education. The majority of the student's agreed that they have the required skills to join an e-learning platform.

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Table II: Reliability Statistics and Descriptive statistics

	Cronbach's Alpha	Mean	Std. Deviation
Academic quality	.891	2.850	1.1343
Learning outcomes	.888	2.967	1.1216
Travelling time	.892	4.217	.9158
Boarding place & travelling cost	.890	3.819	1.1457
Like to attend online in future	.888	3.056	1.3130
Availability of Internet access	.886	3.319	1.0897
Internet costs - affordable	.889	3.056	1.1082
Have required skills to attend e-learning education	.888	3.639	.8848
Structure of online Modules	.887	3.375	.9447
Communication – students & lecturers and Concentration	.889	3.119	1.0367
Help to complete the degree without a delay	.887	3.761	1.0172
Less extracurricular activities more time on education	.890	3.319	1.0664
Can play videos repeatedly and easy to learn	.891	3.872	1.0451
Time-consuming because live meeting always	.898	3.811	.9340
More time consuming to download and repeat	.897	3.672	.9808
Make feel free & time passes quickly	.892	3.447	.9803
Use information technology more than before	.892	4.022	.9729

Source: Author Compiled, 2021

Table III shows the majority of respondents revealed that they are facing many challenges during e-learning education. It is quite common for many respondents that they are not in a position to look at the screen of the device for a long time because it is boring and stressful. Another main challenge for students through this e-learning is that more students are suffering from vision-related issues. The third challenge is the technical issues faces with e-learning education since this e-learning mode is a completely new concept for students. This is mainly because of the low quality of devices, low memory capacity, slow working conditions, virus attacks, etc.

Table III: Challenges Facing during e- Learning

Type of Challenge	No. of Students	As % of Resondents
Looking at the screen is boring and stressful	185	79%
Difficulty in online continuous assessments	105	45%
Poor quality of video collaboration software	66	28%
Technical problems	118	50%
Vision Related Issues	158	67%

Source: Author Compiled, 2021

According to Table IV majority of the students agreed that e-learning education provides numerous opportunities for them. The first important opportunity they received via the e-learning platform is the time saving due to learning from home. Second, they revealed that through e-learning education they get more training and are given more exposure to information technology (IT). During the COVID outbreak, students had a chance to use IT knowledge in several ways such as enhance the quality of presenting continuous assessments using IT, share new knowledge via zoom technology, use social media for education, etc. As a third point, the majority of the students agreed that they had a chance to study recorded videos repeatedly and clarify the subject's related matter which they were unable to study during the live sessions. This opportunity was nonexistent with the traditional face-to-face classes. This is the third important benefit; they receive via e-learning during the COVID -19 pandemic. In addition to the above opportunities, undergraduate students of the state universities, Sri Lanka agreed that traveling and accommodation costs were also drastically reduced with e-learning education. The next important expectation they highlighted was the completion of the degree without much delay and entering into the job market which is very competitive in this part of the world. Undergraduate students have revealed that this is one of the most important advantages they have received due to the adoption of this new mode of study. Although they agreed that they can enjoy several benefits, the majority of the students do not wish to continue e-learning education after the pandemic. Only 44 percent of students agreed or express their willingness to join e-learning after the pandemic and the details of this viewpoint of the students are given in Table II.

Quality Education is academically essential to produce dynamic and productive members of society and the economy. Table IV shows the undergraduate students' perception of e-learning education concerning academic quality. Students are not happy with the quality of e-learning. It is clear that the majority of the students do not agree with the statement like "*Quality of e-learning education is same as the face- to –face classes*".The students firmly believe that the level of accomplishment and outcome of the program via e-learning is different compared to the traditional classroom. However, one-third of the students agreed on internet charges are affordable while the majority felt that the internet charge is expensive for them. It may be the fact that public university students are a heterogeneous group that comes from a wide range of social and economic backgrounds. There is another disagreement regarding the space given to the level of communication and interaction during the e-learning lectures. Students feel that e-learning is not always interesting due to a lack of interaction which hinders the group behavior. It is understood that due to technical issues and connection issues, it is very difficult to conduct e-learning sessions smoothly through this platform in this part of the world. According to the response, it is clear that more than 50 percent of students have unstable internet access in their locations. Therefore, students face difficulties and interruptions throughout the e-learning education process.

There is an ambiguity on the modules of e-learning classes where about 50 percent of students agreed with the standard of the module while others did not. This pandemic situation has created a panicky environment for all of the stakeholders in the higher education system including lecturers. The academia did not have adequate time to respond to the changes and revise the course modules to match the new mode of study. Another disagreement is that due to this virtual platform, it is easy to arrange meetings. But on the other hand, students notice that it is time-consuming. Not only that students revealed that downloading the recorded lectures takes more time than anticipated with technical problems and slow connectivity.

Table IV: Frequency Distribution of Responses on Benefits and Challengers of E- Learning

Response	1*	2*	3*	4*	5*	4+5*
Quality of online education same as the face-to-face	10.6	30.2	31.2	20.9	6.8	**27.7**
Accomplished outcomes via e-learning same as the face-to-face	9.4	25.1	33.2	25.1	7.2	**32.3**
Cost savings (Boarding place, traveling cost, etc.)	6.1	6.4	20.3	33.9	33.3	**67.2**
Reduces travelling time	4	3.4	13.2	37	46	**83**
Like to attend e-learning classes in the future when the pandemic is controlled	14.9	15.7	25.1	31.9	12.3	**44.2**
Internet access in the area	6.7	15.6	29.7	35.3	12.8	48.1
Internet costs are affordable	11.7	15.6	36.4	28.3	8.1	36.4
Have required skills to attend e-learning	3.6	6.1	23.9	45.6	20.8	**66.4**
Modules of online classes are well organized	4.4	10.8	36.1	40	8.6	48.6
Communication between students & lecturers are adequate and concentration at higher level	8.3	16.9	35.6	32.8	6.4	39.2
Help to complete degree without a delay	2.6	8.9	22.1	42.2	19.1	**61.3**
Less extracurricular activities and more time on education	6.1	15	30.2	36.2	12.5	48.7
Recorded videos can download any time repeatedly so it easy to understand the lecture	2.1	6.8	16	43.1	31.9	**75**
Time-consuming because of live meeting always	9	5.1	24.3	43.4	26.4	69.8
More time consuming to download and repeat the same materials	2.6	5.5	28.1	44.7	19.1	63.8
E -learning make feel free & time passes quickly	3	43	31.1	11.9	11.1	**23.0**
Use information technology (IT) more than before	9	6	15.7	43.8	33.6	**77.4**

Source: Author Compiled, 2021
1* = Strongly Disagree 2* = Disagree 3* = Neutral 4* = Agree
5* = Strongly Agree 4+5* = on average Agree

V. CONCLUSION

The New COVID-19 pandemic makes drastic changes in the educational sector all over the world and there is no exception in Sri Lanka as well. The new normal education environment has given many obstacles and the higher education sector needs to have a more innovative approach to meet the expectations of the undergraduate students of state universities of Sri Lanka. without taking much time most of the state universities in Sri Lanka were able to shift from face-to-face learning to e-learning from home though it is a completely new concept and a process. Management faculties were also compelled to adopt and enforce the e-learning mode since no other alternative stands out as the best. The administrators, academics staff, and students were forced to adopt the new system due to the closure of all education institutes during the lockdowns and travel restrictions. Academics, start to search and learn new approaches, modes to deliver the knowledge effectively and efficiently to minimize the damage to the university students. Since most of these are a completely novel approach to the Sri Lankan education system, this study was aimed to examine the undergraduate students' perspectives on e-learning education during the COVID-19 pandemic since the researchers believe that we have been in the system long enough. This is high time to unearth factors in the e-learning education system and support administrators, policymakers, and academia to revisit the process of e-learning education.

In the study, the majority of students agreed that the e-learning version of education was reduced the traveling time and cost of accommodation. This is in line with the finding of Liaw et al. (2007) who revealed that students were agreed that e-learning provides motivation for self-studies and it saves time for self–study.

Moreover, the findings of the study showed that the majority of the students were satisfied with the e-learning mode of education during this pandemic because it helps them to complete the degree without much delay and enter the job market to sooner. Similar to this finding, Abbasi et al. (2020) and Al-Fahad FN. (2010) reported that students were preferred e-learning in the future to reduce the calendar lag caused during the COVID -19 pandemic.

During this pandemic time, universities start to provide most of the facilities via an online platform such as library facilities, soft skill development programmes, help desks, and recorded lectures via Learning Undergraduate System (LMS) to their students. Thus, students are happy about these facilities. Further, they agreed that they are exposed more to information technology during the outbreak which is a required skill in searching for job opportunities especially in developing countries. Similar findings were confirmed by Sriyalatha and Kumarasinghe (2021). They showed that internet and other acilities such as devices, technical skills have positive impacts on online learning during the COVID -19 pandemic. All these points are considered positive facts on e-learning education during this challenging period. Contrary to that, the students of the Management faculties in the state universities pointed out that some problems associated with the e-learning mode.

In the sample of undergraduate students, 77 percent revealed their dissatisfaction with e-learning education since it is an exhausting task to sit and listen to a screen for a long time. Pourghaznein (2015) reported the same in his findings that students are more preferred the traditional learning environment to a virtual platform where students and teachers are physically absent. They also disagreed with the quality of e-learning education since the digital platform does not give the same as face–to–face education and filed to achieve the learning objectives as same as a traditional learning environment. Nearly 56 percent of students disagreed to continue e-learning platforms even after the COVID pandemic. The cost of internet facilities is one of the highlighting points of the study and the fact is closely connected with economies where still most families are living in a self-subsistence lifestyle. Students in state universities are from different economic and social backgrounds, all students do not have the luxury of equal access to the resources. Most of the undergraduate students of state universities revealed it as an additional comment in the survey questioner. Further, the students were not able to engage in part-time jobs for a secondary income during the outbreak. The majority of the students are unhappy about the interchange of ideas, two-way communication, and concentration level of digital lectures. The students highlighted that limited internet access and poor connectivity challenged the knowledge transferring process during e-learning education mode. The above fact is a crucial issue especially in rural areas where the infrastructure for inormation technology is still not up to the standered in Sri Lanka as a developing country. A similar finding has been reported by Hampton et al. (2020) in their study using a sample from Michigan State University's Quello Center. According to their study, truncated performance is inevitable with poor quality internet connectivity. The study revealed that suburban and rural area students are more economically vulnerable and plausible to have more negative impacts on digital education since the low quality of internet access and devices. The study conducted using sample students of Management faculties given the fact that students were reluctant to face a screen for a long time since it is boring and stressful.

MANAGERIAL IMPLICATIONS

According to the student response, it is clear that the major problems via e-learning were internet connectivity, availability of devices, visionary issues, technical problems, and stress. Therefore, if the administrators of the higher education sector intended to continue e-learning education, they have to pay attention to providing cost-effective, high-speed data services, and minimize technical issues associated with the e-learning mode to enhance the effectiveness of e-learning education on state universities in Sri Lanka. There should be a proper schedule and curriculum for e-learning sessions considering notional hours of education without overloading students which leads to stress out them. We would like to highlight that administrators do need to revisit the education policy and curriculum to promote e-learning among students as a prevention mechanism to face a similar disaster in the futuer. At the same time, in advance training programs should be introduced to enhance the awareness of lecturers on e-learning evaluation systems, interactive communication, handling the stress of students in e-learning education.

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