

The Impact of Post-E-Learning on Psychological Conditions in University Students

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Abstract- In the recent past, the whole world experienced the covid-19 pandemic as a widely spreading infectious disease. Therefore, the Covid - 19 has resultant rigorous social stigmas in this milieu. Starting from the smallest social institution; family and moving on to other social institutions relating to political, economic, religious, law and educational institutions, the Covid - 19 pandemic has delivered both negative and positive impacts. Generally, the use of newer technology for education purposes is highly motivated. However, the problem remains beneath the outcomes of e-learning. This exercise has focused on understanding how post-e-learning affects the psychological condition of university students. The research problem was, “what are the post-e-learning psychological difficulties faced by university scholars?”. The investigations were done on a quantitative methodology, where a survey method has been used as the research method. The sample was chosen from the convenience sampling technique under the non-probability sampling methods. When considering online lecturing, respondents have identified that they suffered from headache, unbearable temper, less fear, less physical pain, having proper sleep and, more lethargic after engaging in online sessions. But the most important finding is that the subjected sample thinks that these symptoms were not the results of mental instability, but physical disturbances. Bringing new challenges to sit for the examinations, as usual, not having online examinations, not concerning the endurance of the students, slight understanding about the technology (both lecturers and students) were new challenges that students have faced. It was suggested that giving a considerable interval, leave/vacation, or organizing mental relaxation sessions affiliated to the subject matters will enhance the mental easing of the students. Use of a pre-prepared and well-planned time table with clearly defined leaves and vacations could be used for the above. Another suggestion was that a practical experience could be delivered to the students by making out short video clips. Furthermore, the students can make such video clips align with the guided video or they can experience it practically and come up with a small briefing for a discussion. Therefore, either video or briefing could be used for future learning materials, and it will enhance the upcoming sessions for the junior batches.

Index Terms- Covid-19, Education, Post e-learning, Psychological conditions, University students

I. INTRODUCTION

Covid-19 has influenced society in various forms such as politically, economically and socially. Therefore, policymakers and decision-makers have taken immediate actions to overcome these effects. Some of the decisions directly influenced society and some show indirect effects. Some of the decisions are long term and some are short term. Likewise, some decisions either influenced humans' physical conditions or the psychological conditions while some have had physical and psychological impacts. E-learning for the education system in Sri Lanka is emerging as such a decision to mitigate the education unrest of the pupils. Therefore, as a decision of conducting learning sessions via an online platform, it can have direct/indirect or long-term/short-term or physical/psychological impacts upon the society.

Universities are paying attention to e-learning and its facilities because online platforms can present a human virtually whom they are unable to present physically. And also, by using the online platform, lecturing and evaluation can be done electronically (these ideas will be elaborated in advance). Thus, e-learning has become an easy solution for the current scenario. As mentioned above, the decisions which are taken from the stakeholders should identify psychological impact the use of e-learning can have upon humans because human psychology is playing a major part in human cognitive thinking. E-learning is no more a new practice to Sri Lankans as a majority of the educational accomplishments are covered online. E-learning did not begin with the Covid-19 pandemic situation because previously, it was used more or less at universities and private educational institutions. However, as e-learning has become a crucial necessity with the covid - 19 pandemic, major work has been done to understand its inheritance towards different social events. This piece of work tries to understand the effect of e-learning by addressing a research question; “what are the post-e-learning psychological difficulties faced by university scholars?” This work aims to understand the influence of e-learning from a perspective of the individuals/students who already studied through e-learning and who did their final examinations in the university system.

II. LITRETURE REVIEW

Background of Covid - 19

Covid - 19 was primarily identified in the year 2019 in Wuhan, China. In January 2020, a corona outbreak was announced by the World Health Organization (WHO). According to the WHO, coronavirus is an infectious disease caused by a newly discovered coronavirus (World Health Organization: WHO, 2020). When investigating the Sri Lankan covid timeline, there are two main covid waves. The 1st wave was recorded in 2020. According to the website disease.lk, 1st Sri Lankan covid positive case was found on 27th January 2020; a 44-year-old Chinese woman. She has fully recovered and was released from the National Institution of Infectious Diseases on 19th February. The 2nd covid wave started in October of 2020. This wave created a cluster named Minuwangoda and Divulapitiya (covid-sl-timeline - disease.lk, 2020). At the moment of this study (March, 2021), there are 88,238 of total cases and 532 deaths in Sri Lanka while, 121,234,146 total cases and 2,682,212 deaths have been recorded world-wide (Coronavirus (COVID-19) - Google News, 2020). It implies the severity of this pandemic situation.

What is e-learning? A simple introduction to e-learning

Technology has created new horizons for human beings. New medicines, new communicable media, new machineries and so on. Thus, commonly it is called the technical era of human civilization. New technology was born due to the question "how". 303 million years ago, sharp tools were created to overcome the crisis; hunger ("History of Technology Timeline | Britannica," 2021). Therefore, technology is a human born cognitive skill. The critics have defined covid-19 as a crisis which is unparalleled to the world has experienced before. Therefore, to overcome its impacts, new technological inventions have intervened. Among the social institutions such as family, politics, law, religion, economy and education, Covid-19 has created crisis situations. When considering education institution, education for students is a major crisis that can be identified. To overcome this crisis, e-learning has emerged as an answer.

E-learning emerged with the intention of giving both practical and theoretical knowledge from a virtual form of participation. Therefore, both student and teacher participate in the classroom, face to face while they are not in the physical classroom. Thus, this electronic education system has been identified as a blended education system. E-learning (synonym: homeschooling) differs from blended education. E-learning has been developed by inculcating blended education and being self-educated via online. E-books, e-journals, and videos are such resources for e-learning. E-learning can also be defined as "a network enabled transfer of skills and knowledge, and the delivery of education is made to a large number of recipients at the same or different times" (What is E-learning? Definition of E-learning, E-learning Meaning - The Economic Times, 2020). Thus, e-learning has become an extraordinary challenge for the educationists, teachers, students and even for the parents because of its newness and strangeness to the user. Therefore, it is important to understand the impact of covid - 19 on learning.

Impact of covid - 19 on learning

Since textbooks are replaced by smartphones, tablet computers and laptop computers, it is not so far to replace a physical classroom from a virtual classroom totally. Azorín (2020), emphasizes that, covid - 19 has given a golden opportunity to understand what matters most in education. Furthermore, he explains that covid - 19 has made a transitional period of changing the physical classroom to a virtual classroom. He argues that the school system should rethink two states; a return to traditional education as usual or a transformation towards another education. Reason for the above transition is the traditional memorising education sub-system prevailing in the contemporary education system will be replaced by the interactive methods of education in near future. Therefore, evaluation of technology gets hand in hand with transformation of education for the betterment of the future scholars.

A research done by Shahrill, M., Petra, M.I., Naing, L., Yacob, J., Santos, J.H. and Abdul Aziz, A.B.Z. (2021), have found that blended education for the education system will change the prevailing system drastically. From the study a few findings related to the topic were summarised; firstly, structured blended learning ensures the highest quality of online education. Secondly, blended learning will open more opportunities. Thirdly, there will be more global classrooms and the exchange of online modules with international partner universities. These findings show that the use of e-learning in the education system have created new horizons for the students nationally and internationally while at the same time fostering a positive attitude among the users towards e-learning.

Can e-learning make equality between disadvantaged backgrounds and advantaged backgrounds? A study done by Chapman, C. and Bell, I. (2020), shows that to build equality on e-learning based education, it may take short term and medium or long term consequences.

Bisht, R.K., Jasola, S. and Bisht, I.P. (2020), have examined the "Acceptability and challenges of online higher education in the era of COVID-19". From this study they have identified that the use of an online system for assignment submission was considered as an easy task for a majority. Students have faced minor issues related to online education the reason for which was financial unaffordability for the students to buy a laptop or a smartphone. From their in-depth analysis (chi-test), it has found that the null hypothesis, "difficulty level of video viva is independent on gender" is accepted at 5% level of significance. The study reveals that students felt less difficulty and low pressure in online examination as compared to regular examinations. Further, the study shows that the majority of the students have been studying on a regular basis and feeling comfortable with online mode. Internet connectivity and lack of interaction with friends and faculty members are reported as some challenges and concerns of online education.

Through the above identified previous researches it can be concluded that e-learning has created a demarcation between advantaged and disadvantaged families. Buying a smartphone or a laptop to fulfil the least requirement for e-learning is the major

pretext between the two states. However, the covid - 19 has become an era of replacing physical classrooms to virtual classrooms where blended and electronic facilities are empowered. The new system of education will enhance opportunities nationally and internationally. Therefore, not only students but also other stakeholders have identified e-learning as a positive aspect of studying.

Human psychology and psychological (mental) disorders

As humans, every person should have experienced at least a single mental frustration in his lifetime (Kankanamge, Sugath., 2016). It may seem as a subjective explanation till the reader ends this paper. To understand psychological frustrations and disorders some definitions were taken as below.

Mental disorders (or mental illnesses) are conditions that affect your thinking, feeling, mood, and behavior. They may be occasional or long-lasting (chronic). They can affect your ability to relate to others and function each day (Mental Disorders, 2013).

Mental illnesses are health conditions involving changes in emotion, thinking or behavior (or a combination of these). Mental illnesses are associated with distress and/or problems functioning in social, work or family activities (Ranna Parekh, M.D., 2018).

By combining the above-mentioned definitions, a simple definition can be formulated as follows.

Mental disorders/illnesses are affecting humans by different situations they faced or by different problems that are unavoidable (ageing, neurological failures etc.). It changes a person's thinking pattern, behavior, attitudes and the way of responses resulting in damage for the actor/patient.

Mental disorders can be identified as neurotic disorders, psychotic disorders and psychosomatic disorders. Neurotic disorders are well known as simple psychological distress. According to the WHO, and Mental Disorders, (2013), some simple psychological distresses were identified for the resource purposes, as follows.

Depression is characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, tiredness, and poor concentration. People with depression may also have multiple physical complaints with no apparent physical cause. Depression can be long-lasting or recurrent, substantially impairing people's ability to function at work or school and to cope with daily life. At its most severe, depression can lead to suicide (Mental Disorders, 2013).

Bipolar disorder typically consists of both manic and depressive episodes separated by periods of normal mood. Manic episodes involve elevated or irritable mood, over-activity, rapid speech, inflated self-esteem and a decreased need for sleep. People who have manic attacks but do not experience depressive episodes are also classified as having bipolar disorder (Mental Disorders, 2013).

Schizophrenia is a severe mental disorder, known as the cancer among mental disorders (Subhasinghe, A. Wijekoon, 2010). Symptoms of schizophrenia usually start between ages 16 and 30. Men often develop symptoms at a younger age than women. People usually do not get schizophrenia after age 45. There are three types of symptoms:

1. Psychotic symptoms distort a person's thinking. These include hallucinations (hearing or seeing things that are not there), delusions (beliefs that are not true), trouble organizing thoughts, and strange movements.
2. "Negative" symptoms make it difficult to show emotions and to function normally. A person may seem depressed and withdrawn.
3. Cognitive symptoms affect the thought process. These include trouble using information, making decisions, and paying attention (Schizophrenia, 2020).

Dementia is usually of a chronic or progressive nature in which there is deterioration in cognitive function. It affects memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement. The impairment in cognitive function is commonly accompanied, and occasionally preceded, by deterioration in emotional control, social behaviour, or motivation (Mental Disorders, 2013).

Panic disorder, is an anxiety disorder characterized by re-occurring unexpected panic attacks. Panic attacks are sudden periods of intense fear that may include palpitations, sweating, shaking, shortness of breath, numbness, or a feeling that something terrible is going to happen (Wikipedia Contributors, 2021).

Obsessive-Compulsive Disorder (OCD) is a mental illness that causes repeated unwanted thoughts or sensations (obsessions) or the urge to do something over and over again (compulsions). Some people can have both obsessions and compulsions. OCD isn't about habits like biting your nails or thinking negative thoughts. An obsessive thought might be that certain numbers or colors are "good" or "bad." A compulsive habit might be to wash your hands seven times after touching something that could be dirty. Although you may not want to think or do these things, you feel powerless to stop (Fields L., 2003).

Personality disorder is a type of mental disorder in which you have a rigid and unhealthy pattern of thinking, functioning and behaving. A person with a personality disorder has trouble perceiving and relating to situations and people. This causes significant problems and limitations in relationships, social activities, work and school.

"In some cases, you may not realize that you have a personality disorder because your way of thinking and behaving seems natural to you. And you may blame others for the challenges you face. Personality disorders usually begin in the teenage years or early adulthood. There are many types of personality disorders. Some types may become less obvious throughout middle age" (Personality disorders - Symptoms and causes, 2016).

Eating disorders are serious conditions related to persistent eating behaviors that negatively impact your health, your emotions and your ability to function in important areas of life. The most common eating disorders are anorexia nervosa, bulimia nervosa and binge-eating disorder. Most eating disorders involve focusing too much on your weight, body shape and food, leading to dangerous eating behaviors. These behaviors can significantly impact your body's ability to get appropriate nutrition. Eating disorders can harm the heart, digestive system, bones, and teeth and mouth, and lead to other diseases. Eating disorders often develop in the teen and young adult years, although they can develop at other ages. With treatment, you can return to healthier eating habits and sometimes reverse serious complications caused by the eating disorder (Eating disorders - Symptoms and causes, 2018).

In order to create a hypothesis to prove that there is a relationship between above common symptoms and frustration of university students, a few common symptoms were taken and generated a comparison between pre-e-learning and post-e-learning among the university students. Thus, by using the below mentioned methodology, findings and conclusions were taken to interpret the outcome.

III. METHODOLOGY

The investigations were done on a quantitative methodology, where a survey method has been used as the research method. The sample was chosen from the convenience sampling technique under the non-probability sampling methods. The sample was limited to 100 participants, where all the participants were final-year students who faced the final examination recently (within covid - 19 regulations of their universities). For the data collection, a google form-based questionnaire was generated.

IV. FINDINGS AND OBSERVATIONS

The sample consisted of a majority of females (57%) than male students. Out of them, the minimum numbers were occasional attendees (10%) and the average of the sample had missed some lectures (30%) but the majority have attended lectures regularly (60%). The reason for the above was their intention to have a high-rank pass and their desire to learn (76%).

The majority of the sample's intention was positive towards e-learning. But when compared to the normal lecturing to the online lecturing, it has no significant difference between physical and virtual lecturing scenarios. The reason can be identified in the comprehensive and comparative analysis as shown in figure 1. However, after online lectures, respondents have identified that they have felt lethargic (28%) and they have suffered from unbearable temper (27%) and headache (33%). But when comparing the results with physical lectures, online lectures have given them less fear (51%), less feelings to be lonely (70%), but the students are thinking that they are having a proper sleep (67%) than usual. Most important fact is that none of the sample representatives had not felt an urge to attempt suicide which was

2% of the sample at the beginning. Nevertheless, the most important point was that the majority of the university students think that these symptoms were not the results of mental instability, but physical disturbances or less refreshness. They have felt freer with the use of e-learning at the very beginning but with the time, headache, eyesight aching, unable to concentrate for the work, were experienced due to the digital screen. Furthermore, after sitting in front of the screen, they had faced posture-related issues as well.

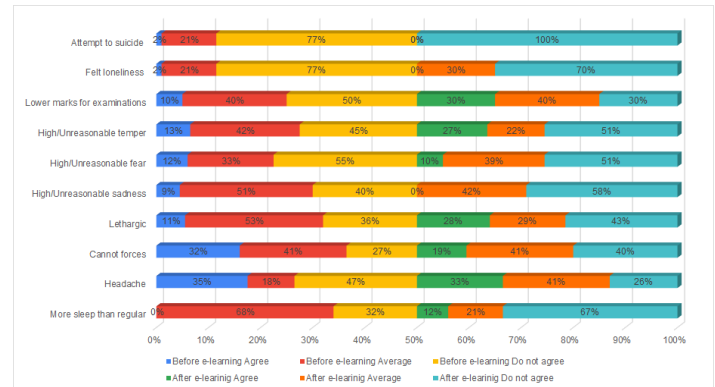


Figure 1: A comparison between online lectures and physical lectures by several psychological conditions of the university students

Even though students have seen e-learning as a successive method of studying, they have faced several challenges with it. New challenges regarding examinations was the major challenge that they have faced. Not having online examinations, more marks for written examinations and less for online based assignments were among the major challenges. Another challenge is that, not concerning the endurance of the students on online lectures. It has resulted in feeling lethargic to attend lectures and to concentrate on the same lecture constantly. The lack of sufficient technology literacy (both lecturers and students) is also a challenge that they have faced. It has resulted in postponement of some lectures in their lecturing period, which has made them nervous as well. The frequent power failures and limited internet access (limited Wi-Fi access in home) were new challenges they have faced when attending the lectures. On the other hand, students were not able to find new sources for the reference as they had limited internet signals and access to the library facilities.

However, when considering the effect of covid - 19 on a sociological perspective, the relationship between students and their colleagues have been negatively influenced. The subculture of a university is unique to its environment. However, with the effect of covid - 19, university students could not attend physically for the lectures and interact with other junior batches, teachers and friends. Not only that but also, they were unable to participate in the students'-based societies to develop their skills. Nonetheless, lecturers tend not to know their new students. Therefore, the interaction between these groups have created a vacuum of interaction.

It was concluded that, the e-learning has not affected drastically on student's psychological conditions but it has affected their

physical conditions such as pain in back, eye site itching and posture disorders which were common discomforts that they have felt.

V. SUGGESTIONS

It was suggested that giving a considerable interval, leave/vacation, or organizing mental relaxation sessions affiliated to the subject matters will enhance the mental easing of the students. Use of a pre-prepared and well-planned time table with clearly defined leaves and vacations could be used for the above. Another suggestion can be introduced to enhance the practical experience through virtual platform. It is that practical sessions could be delivered to the students by making short video clips. It can be used for arts subjects; such as drama, music and arts. And the students can make similar video clips align with the guided video or they can experience it practically and come up with a small briefing for a discussion. Therefore, either video presentation or virtual briefing could be recorded and used for future learning materials. Thus, it will enhance the upcoming sessions for the junior batches, and it would be a new experience for all the academia.

VI. CONCLUSION

The final conclusion of the study is drawn from the students' points of view. Students see e-learning as a huge step in their academic life. Some of the students were unable to participate in the lectures as a result of being less cognitive on technology. Common understanding is the technological literacy in Sri Lanka is at a low level. and the rural and urban gap has resulted in the knowledge distribution. These facts may have resulted the above. However, the technological milieu has given fair education for all without considering the disability (mental or physical), education level, family status, or economic status of a student. Nevertheless, it can be concluded that the online mode is quite acceptable amongst students with some concerns. Another positive aspect of the study is that the students have been using many online applications for learning and career aspects as well.

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