Obstacles in Online Learning Faced by the Government School Students of Remote Areas in Batticaloa

Vanmathy R

Faculty of Graduate Studies, University of Sri Jayewardenepura, Sri Lanka

ABSTRACT

Everyone could see an unprecedented health crisis in the system of education during the pandemic situation of COVID-19 worldwide. That is, the transformation of the learning method from face-to-face into a digital version. Therefore, there are so many challenges that students faced while learning online and especially the students, who study in remote areas, were affected vulnerably when doing their studies online. In that respect, this paper examines and analyses the obstacles faced by government school students in remote areas during COVID-19 as they learned online. The data were collected from ten different schools, which are located in the remote areas, of five educational zones in the Batticaloa district. Thirty participants were randomly selected from each school and a questionnaire was distributed to collect data. Thus, a total of 300 questionnaires of participants were taken to analyze and point out the obstacles of online learning as faced by the students of government schools in the remote areas. The qualitative research method was used to accomplish the research objectives. The results indicated that the socio-economic status, limited experience of technology, lack of interconnection with teachers, not having a proper learning environment at home, ineffective feedback, unsatisfactory teaching methods, physical tiredness and lack of motivation affected online learning. Also, the article suggests recommendations to improve the online learning effectively for both students and teachers with the support of the Sri Lankan government.

KEYWORDS: *Online learning, Obstacles, Social economic status, Teaching methods, Technology*

Corresponding author: Remoshan V., Email:vremoshan@gmail.com

1 INTRODUCTION

Education is a tool that facilitates learning or gaining knowledge, skills, norms, beliefs, behaviors, habits and culture. It is conveyed from one generation to another and it plays a vital role to sustain and maintain a particular culture of the society. Further, education helps us to solve the problems and it guides us to take a better decision. At the same time education provides us with a better position in the society, a healthy environment in the job market, better financial status and a good family background. Hence, it is not a difficult task to create a better society around us with the help of education (Adedoyin & Soykan 2020).

According to the Sri Lankan context (before 1940), "Education" was only for the upper class and people of the upper caste. However, after several decades, it was changed and it became available for rich people and everyone else due to the arrival of free education. However, it is again available to the rich and wealthy since the introduction of online learning conducted using expensive electronic devices. What causes the actual movement of education from everyone to rich is due to the introduction of online learning because most of the students in remote areas could not learn online (Khashunika 2021). Therefore, online education has become an essential need to uplift education in this pandemic situation of COVID-19 (Ferri & Guzzo 2020). Thus, online learning is recommended to move forward in schools, colleges and universities all over the world; also, this system of education is supported by UNESCO for the purpose of avoiding the gathering of people in a particular place and to maintain social distance (Barrot & Rosario 2021).

In that respect, online learning is known as online education, e-learning, digital learning, and virtual education, web-based learning, distance learning and e-school or cyber-school. Online learning is a system of learning where we can learn in a virtual environment and it was introduced in 1990. The term online learning means the process of learning through the internet with the needed accessories, such as a computer, smart phone, an internet connection, a software application (Zoom, WhatsApp) and so on (Hujran et al. 2013). It is the most popular process of learning in this modern era and there are many online learning systems which are spread around the world to acquire knowledge from a distance via electronic media (Mallilli et al. 2020).

On the one hand, it is the new way of distance education in Sri Lanka and it started as a temporary solution to teach children due to the pandemic situation. However, it has been in function continually for nearly two years in our country. Also, the pedagogy of learning has moved from the traditional method to virtual class room and this transition has brought lots of barriers not only for the students but also for teachers, parents and school administrations (Srichanayachon, 2014). Although convenience has been resulted due to this online learning, there are obstacles faced by government school students, especially in remote areas of the country.

Additionally, the introduction to online learning drastically impacts the system of free education in Sri Lanka (Hayashi, 2020). The free education was implemented by the father of free education C.W.W. Kannangara in 1945 and it provided equal opportunities for all children from the age of five to sixteen to learn with all the facilities of schooling. Unfortunately, free education is not equal for every child in this contemporary era because of COVID-19. Therefore, this study explores the obstacles of students in remote areas in Batticaloa district at a time when online learning is functioning widely in Sri Lanka.

1.1 The objectives of the current study,

- To explain the obstacles of online learning faced by the government school students in remote areas in the Batticaloa district.

- To provide suggestions and recommendations to overcome the obstacles to improve the online learning in the future.

1.2 The following research questions were proposed for the study.

1. What are the obstacles faced by the government school students of remote areas in Batticaloa district?
2. How can the students overcome the obstacles of online-learning in order to improve in the future?

2 LITERATURE REVIEW

This chapter focuses on existing literature which is related to this current study of the obstacles in online learning faced by learners nationally and internationally. Therefore, this section concerns the previous research in different categories of students from schools, colleges and universities.

Traditional face-to-face classrooms were changed into digital classrooms through the use of modern technologies. Although it was a very good environment for emergency teaching in this crisis of the Corona virus (COVID-19) in the whole world, there are many obstacles faced by government school students especially those who study at schools of remote areas and villages (Heng & Sol, 2020). In that respect, Hujran et al. (2013) who focused on the direct comments from students' evaluation and perspectives of the e-learning paradigm and tools clearly stated the challenges of online learning. The data were collected from nine students and, as the main data collection tool, an interview was used as a qualitative method. Also, they pointed out the several challenges, For-learning success such as, the of lack of awareness about e-learning, managing resistance to the new method of learning, non-continuous availability of e-learning, the role of the institute in determining students' use of tools in e-learning, supporting clear e-learning usage policies and designing e-learning platforms positively with a good social networking system.

Similarly, Rana & Lal (2014) examined the issues and challenges of e-learning and they analyzed the pedagogical, technical and organizational factors of e-learning. Also, they analyzed the wider set of socio-cultural factors and particularly they consulted the India research community with a number of research issues on interdisciplinary, access and inclusion, changes in mechanisms and technologies, convergence and interoperability as well as interactivity and social interaction. Furthermore, they indicated that India became a mature player for higher distance education in the Asian e-learning market.

On the other hand, a study conducted by Srichanyachon (2014), revealed the specific barriers and needs of online learners, especially the clarification of the barriers which are faced by the students while learning English through WebEx system. Also, he compared the students' barriers and needs with their background including gender, computer ownership and monthly income. In addition to this, he investigated the relationship among computer aptitudes and barriers with the needs of online learners. For this analysis, 211 undergraduate students were chosen in a fundamental English course and he collected data through a questionnaire. His results showed that students with high computer aptitude had fewer barriers to online learning than those with low computer aptitude.

A parallel study was undertaken by Ferri et al. (2020) who stated that the opportunities and challenges of emergency remote teaching based on experiences of the COVID-19 emergency

and the qualitative method was used to gather data in two ways: a thematic analysis and an Italian case study. That means they analyzed the data which were collected through the Italian case study and the discussion forum titled "Distance learning and emergency remote teaching – SPEAK OUT". Also, the results were categorized into three types: technological, pedagogical and social challenges.

In a related study, Adedoyin & Soykan (2020) argued that there are challenges and opportunities in this pandemic and online learning. Further, they discussed about the migration method of higher institutions for e-learning, students and faculty members into online learning and the opportunities also challenges due to covid-19. At the same time, they emphasized that online learning will be more sustainable with the experiences gained during this pandemic era. Contrary to Adedoyin & Soykan's findings, Mallillin et al. (2020) found the different transition of Covid-19 pandemic in the implementation and readiness of online learning for both teachers and students. They identified the difficulties faced by both parties on access to digital work, availability of technology, adequacy of technology, preparation for the effective online learning platform, access to link of internet and school practices in online teaching. They accumulated the data from hundred and fifty respondents by using a descriptive quantitative method. And the results indicated that online learning has many advantages for the students to learn anywhere and anytime through an internet connection and that also creates new

opportunities to share knowledge in this crisis of covid-19. Moreover, they requested to provide a better access to digital work, availability of technology, skills to handle the tools and materials and active involvement with better engagement to have an improved progress of online learning in future.

Additionally, Heng & Sol (2020) explained the key challenges of online learning during Covid-19 and they proposed some advices to enhance online learning. They indicated that this digital transformation of education initiated many challenges for educators, students, school administrators and parents especially in Cambodia with technical, economic and social factors. Also, they highlighted that online learning should be developed by the government support and investment to improve the platforms of learning through the internet.

Furthermore, Barrot et al. (2021) analyzed the challenges of online learning faced by students in this crisis of Covid-19 and how they managed to overcome. The findings of the study are the challenges of the learning environment at home, technological, literacy and competency, quality of learning experience and students' mentality. Additionally, they discussed about the impacts of classroom practice, policy- making and technical aptitude enhancement.

Similarly, there are studies which were done nationally on online learning especially on its challenges. Therefore, Rathiranee (2013) did a research about the challenges in online learning towards the better learning environments based on the Bachelor of Business Management (BBM) degree programme which is conducted in the virtual environment by the University of Jaffna, Sri Lanka. For the purpose of her study, a qualitative analysis was used with interviews, discussions and the observations. Also, she completed the study with 90 external students in 2nd and 3rd years of BBM online degree programme. Further, she found the challenges; which were mostly faced by the students; they are: students support related to the students' interaction, content development, technical support service; challenges on flexibility related to timing and choices of assignment; teaching and learning; access related to the infrastructure facilities and connectivity; and academic confidence which is important for the better outcome of online learning. In her conclusion, she recommended that the tutor or mentor should come forward with attractive teaching strategies that suit the learners, rich organization and infrastructure facilities should be provided and the access and electricity problem should be considered in order to provide a better virtual learning environment.

On the other hand, Hayashi et al (2020) discussed about online learning in Sri Lanka's higher education institutions during the Covid-19 pandemic situation. According to their study, there are issues in online education which are widely conducted especially for tertiary level student such as poor internet connection, traditional curriculums and pedagogy, lack of students' engagement: lack of training for blended learning and usage of electronic device with fewer facilities. The

study suggested giving free data and laptops because the most of the student use smart phone for their online learning with mobile data but it is difficult to complete their assignments successfully by using mobile phones, which has limited facilities, which is why laptops should be provided for students.

Another body of research by Khashunikaet et al (2021), examined the challenges and opportunities in online education in Sri Lanka during the Covid–19 pandemic period. For the purpose of this study, a qualitative method was used and semi - structured interviews were chosen to collect data. Also, undergraduates and faculty members of the university of Kelaniya participated in this analysis; thus, there were 14 respondents totally from the six faculties from the university. The results revealed three main challenges: inadequate e – learning facilities, resistance to change and inadequate skills in e – learning pedagogy. It also revealed four opportunities namely; flexible learning, global and local exposure, good time for blended learning modes and a platform for creative problem solving.

Furthermore, Hettiarachchiet et al (2021) explained the student's satisfaction with online learning during the Covid – 19 pandemic and the study was based on the state universities in Sri Lanka. They collected data from 1376 undergraduate students of humanities and social sciences of three universities in Sri Lanka. They indicated the three perceived challenges of e – learning, learner motivation and interaction which are related to the student's satisfaction from online learning.

They also noted that most of the participants (nearly 75%) prefer live sessions in order to interact with lecturers. Additionally, they suggested that the appropriate training should be provided to the students to enhance the online learning skills.

All in all, in addition to being a supportive learning platform during COVID-19 crisis situation as indicated in previous studies, online learning also posed numerous challenges for students who study at the schools, colleges and universities. Most of the studies were conducted for college and university students in state universities and institutions in Sri Lanka and there are a few of them related to the school students. However, the present study explores the obstacles in online learning faced by the government school students of remote areas in Batticaloa.

3 RESEARCH METHODOLOGY

The present study adopted a qualitative research method to address the research questions. In that respect, this chapter leads with the methodology part which was used to accomplish the research objectives through the categorization of research design, the population of the study, data collection tools and the data collection procedures.

This analysis involved 300 government school students as the sample of the study from ten different schools in Batticaloa district to collect primary data. Thirty students were randomly selected for this study from each school (30×10=300 participants) from both genders. The participants, who study at the remote area

schools, were asked to fill and submit a questionnaire as a tool of this study. The students were chosen from grade 10 & 11 who have been engaged in online learning for nearly 6 months via zoom classes.

In this particular study, a questionnaire was used as the primary tool for data collection and this questionnaire was prepared focusing on both open-ended questions and close-ended questions. Moreover, the questionnaire was divided into two parts to find out the common obstacles of online learning faced by the students and to consider the suggestions for improving online learning in future. Also, the questionnaire was distributed (physically) directly to the students, and then the 300 questionnaires were collected back and analyzed with coding.

4 RESULTS & DISCUSSION

This section leads the major findings which were derived from the analyses of data and those findings are related to the students' perspective according to their experience of online learning.

According to figure 1, it clearly displays the most common challenges faced in online learning by the students of the remote areas' schools in Batticaloa during the pandemic situation of Covid 19. Therefore, the challenges are explained below.

4.1 Socio economic status

Socio economic status of a student is the most important factor which negatively affects online learning in the country, especially in the

remote areas of Batticaloa district, Sri Lanka. Considering the financial situation of the students, who study at the government schools which are located in the remote areas in Batticaloa district, most probably are very poor with the average wages of 15000/- (according to the survey) monthly income for the whole family. The truth is that most of the families from remote areas in Batticaloa district do not even have three meals per day because of this pandemic situation of Covid-19. In addition, they lost their livelihood due to the crisis with continued lock down. As a result, the parents are not able to spend their money for their children's education; because if the students want to learn online, they should have a smart phone or a computer with an internet connection.

Therefore, they need to buy the accessories to use for their online learning and they should pay for the internet connection. Thus, they want to pay out more money for these facilities of online education and it is so expensive for them in their poor economic background (Barrot et al. 2021). Therefore, the parents of the students of the remote areas are unable to spend money for buying smart phones and laptops or computers; also, they are unable to pay for their kids' mobile data which connects the smartphones to the internet.

According to collected data, figure 2 shows 98 families from the selected samples earn an average salary between 14000/- and 16000/- and 80 families earn between 11000/- and 13000/-. Twenty-three families wage is about

less than 8000/- and only 09 families have more than 20000/- per month.

4.2 Poor networking system in the rural areas of Batticaloa

Additionally, the availability of continued network is always questionable for remote areas which are geographically poor for the internet connection. Even though there are many telecommunications in Sri Lanka such as Dialog, Airtel, Mobitel, Hutch, Etisalat and Sri Lanka Telecom; more than 65% of students use Airtel network, 28% of the students have Dialog, 4% of them have Mobitel and others have rest of the networks mentioned here. However, these provided networking systems do not have a proper coverage in the rural areas in Batticaloa where the people face tower issues for appropriate network. In the questionnaire the students mentioned that most of the students climbed up the mountains and trees to get the needed network for their online learning (Hujran et al. 2013). Therefore, the students faced so many obstacles to access e-learning due to the poor connection in their residential areas during the COVID-19 pandemic period.

4.3 Technology

Learning through the internet has been the newest dimension of education for the past two years in Sri Lanka as a developing country, due to Covid-19. Because online learning almost depends on the electronic devices with an internet connection, the learners should have an adequate knowledge to handle these digital devices. However, the students from remote areas don't have such experiences of technology which is essential for online learning. Further, most of the students straggle with insufficient mobile data during the lessons. At the same time, they have a limited experience to access the tools with internet connection especially in the rural areas. Moreover, there is an indisputable truth which can be observed in the schools of remote areas, that most of the schools still don't have an ICT lab, an activity class-room, a computer unit and an internet connection which are used by the students. In the survey more than 75% of students indicated that the teachers apart from the ICT teacher do not have a proper knowledge about handling the e- devices and the applications which are available in the virtual classroom; thus, many times their classes were discontinued in the middle of the session and they could not be reconnected again due to the inability of the teachers to access the software and tools while conducting online classes.
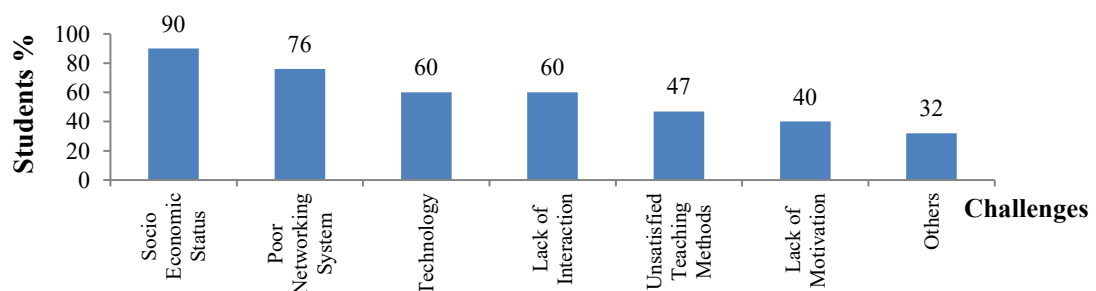

Figure 1. The challenges faced in online learning by the government school students of remote areas in Batticaloa

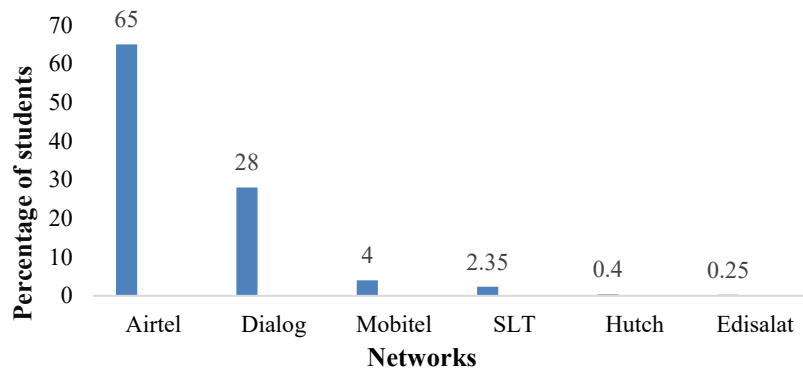**Figure 2.** Monthly Income of selected 300 families in the rural areas in Batticaloa

Figure 3. Usage of Telecommunication Networks in Batticaloa, Sri Lanka

4.4 Lack of interconnection

Another problem identified through the analysis is the lack of interconnection with the teacher and their classmates. What causes this issue is that the traditional face-to-face learning system is transferred into a digital version in the process of online learning. Hence, only the images can be seen through the display of their electronic gadgets and the real classroom setting cannot be experienced when the students learn online. Sometimes the students are not given opportunities to speak during the lessons, although they have doubts and questions regarding the subjects.

Furthermore, the students get bored because the video camera is not switched on by the teacher while they are in front of the screen, so automatically the students lose their involvement and many times they leave from the classes. Similarly, they are not able to connect with their friends who were in the traditional class room and they feel everything as untouchable properties from their teacher to exercises are given by the teacher. The virtual setting particularly does not provide the space for students to share their ideas and opinions with their peers even though there are options for creating groups to discuss the subject matters in group or pair work. However, since the teachers have very limited knowledge about the usage of technology relevant to the online platform, these features are not used. Hence, the lack of interconnection is the biggest trouble faced by the students in the process of online learning (Hang & Sol 2020).

4.5 Poor learning environment at home

Learning environment is a necessary part of schooling to engage all students in a particular place in order to create the learning mentality; likewise, it is an unavoidable aspect for online learning as well. More than 90% of the participants mentioned that even though they have a house to live in the rural area, there is no such separate place for the studies, like a study room. According to the survey, the students, who live in remote areas, sit under the trees and study their lessons with the cooperation of good weather. However, it is not a suitable setting for when they learn through the internet, because they need a proper place to keep their accessories with the right sitting position in order to get a stable internet connection and they don't want unwanted noises from their surroundings like vehicle noises or honking noises, sales people's sounds made by for example fishermen, grocery men, and coconut shell collectors.

Simultaneously, there are so many noises coming from the inside of the house such as younger siblings' noises, parents' conversation, television/radio sounds, dog barking and so on which makes it difficult for the students to concentrate on lessons as they study inside the house during the rainy season. Hence, it is so hard for them to create a positive environment for online learning. The appetizing smell of the food being cooked in the kitchen also interrupts them as they learn online from home. This happens so, snice the students in remote areas have small houses with limited infrastructure facilities and they don't have separate places for

cooking and studying.to live especially in the remote areas (Adedoyin & Soykan 2020).

4.6 Unsatisfied teaching methods

There are two process which take place when we consider the term online learning: learning and teaching. Thus, the teachers take part in a momentous position in the process of learning and teachers are the indispensable characters in any type of education, especially in online education. Because they are the one who leads the process of online learning in a particular time for a specific period, they should be more effective and their teaching methods should be creative in between the allocated time. Therefore, the teachers must change their teaching methodology in a different way from traditional classroom to virtual settings since they are not familiar with using digital devices and they don't have that much of adequate knowledge even to schedule meetings in the Zoom application.

Similarly, the pedagogy used by teachers is not satisfactory to get the students' attention which is very important for the learning process to get effective outputs through the virtual environment. Since the teachers have a limited competency for this new atmosphere without proper training, they continually follow their conventional ways of teaching. The materials too, which are used during the lessons, should be authentic and appropriate according to the students' grade. The teachers have a lack of awareness about the teaching aids and activities that are utilized in the lesson specifically while conducting online sessions. Therefore, it is difficult to do effective teaching because of

their limited skills and students also get into trouble due to these incompetent teachers and their methods (Ferri et al. 2020).

4.7 Lack of motivation

Lack of motivation is another problem faced by the students especially in remote areas because they need to be and study at home due to this crisis environment of Covid-19. Thus, parents have a bigger responsibility to encourage their children for online learning, but the parents who live in remote areas, do not have enough skills to support their smart working process in the virtual environment while they also do not know how to assist their children when handling digital devices with an internet connection in the online learning process. Moreover, those parents are not well-educated and very poor in language competency in using modern technology. So, it is very difficult to get any motivation from the parents (Mallillin et al. 2020).

Furthermore, the students get too tired because of the heavy home-work given by the teachers while too many worksheets are also given to take notes for all subjects. Thus, they feel tired when using electronic devices for a long time and they get body pain (especially in eyes & shoulders) and headaches. That is why they feel physical discomfort while learning online continually and most of our students are ready to avoid online learning due to heavy loaded paper work rather than the eye-catching activities (Barrot et al. 2021).

Moreover, most of the students form these low economic families (approximately 40% of the selected sample) go to work in order to reduce the burden of financial issues in their family. Thus, this situation makes the students leave their studies especially from the online learning platform.

5 SUGGESTIONS

This section discusses the suggestions which were derived from the survey. Hence, these suggestions will assist the teachers and the students to succeed the learning online.

5.1 Giving ownership to the students

Teachers should provide opportunities for the students to have some ownership while learning in the virtual classrooms in order to make them conscious and alert about what they study and where they are in the lesson. Moreover, the students also like to do some activities related to the given lessons for self-assessments that should be corrected on the spot and the students should be provided with feedback; also, the students should be asked orally about what they understand (at least in a sentence) from their learning. At the same time, the teachers can guide the students to utilize the white board, chat and participate in discussion or comment while giving the space for their thinking.

5.2 Interaction with the students

Interaction between the teachers and students, and also among the students, is the most important key element to have an effective hybrid teaching. So, the teacher can turn on his/her video often while class is going on and the teacher can ask the students to turn on their videos while doing class activities to interact with them.

Furthermore, the students can be asked to discuss about the lessons among them and ask questions as a group task so that the teachers can use the break out rooms for their free discussion that the students should be observed by the teacher during their conversation. Hence, the teachers play as facilitator to assist them in discussions.

5.3 Encourage the students to participate in lessons

The teachers should encourage the students to actively participate in lessons during virtual teaching through Google forms, online exams and summarizing the previous lessons. Also, the students should be motivated by giving pre-reading materials for more clarifications about the upcoming session. As well, the teachers may ask to submit a short report after the completion of each unit.

5.4 Mixed content delivery method

The teachers should use some modern techniques to get the student's attention with the lesson through the screen sharing of video clicks, images, graphics and audio content which are related to the lesson, because most of the students are bored to just sit and hear the lesson without watching some sort of interesting things on display during the class. Thus, the teachers have the responsibility to make the class interesting for their curiosity with the pre-planned lessons.

5.5 Accountability and responsibility

Most of the students try to lose their accountability in the hybrid teaching mode by hiding themselves and they are not ready to understand their responsibilities. Hence, they easily ignore the sessions by not attending the classes. Therefore, the teachers and parents should guide the students to engage with classes, also they should make sure about their participation not just passing their time and be alert to get the feedback from the students.

6 CONCLUSIONS

Online learning has become a global trend during the spread of Covid-19 in the whole world and the system of education has been changed in various ways. Particularly, it has transferred from face-to-face traditional classroom to a virtual one. Further, the infrastructure of education has fully changed in to a digital version due to this pandemic situation caused by the corona virus. Somehow this online education helps to uplift the lost education as a temporary solution especially in the developing countries like Sri Lanka.

When we consider the online education in Sri Lanka, schools were instructed by the Sri Lankan government to follow the online learning system without providing any single facility which is needed for online learning especially in areas like Batticaloa in the eastern province. That is why our students face so many obstacles when they learn online, especially the students who study in remote areas in Batticaloa district. Therefore, the obstacles have risen related to the socio-economic status, poor IT technology, lack of interconnection, poor learning environment, unsatisfied teaching methods, lack of motivation, health issues and so on.

Overall, the government of Sri Lanka plays a major role in online learning, because the government has more responsibilities to improve the children's education for the development of our country in future. Thus, all the facilities which are essential for e-learning should be provided by the government of Sri Lanka, such as electronic devices (computer, tap, smart phone) with strong internet connection to do their studies successfully. Also, webinars should be conducted for the teachers to enhance their computer literacy and technical skills, and then effective teaching can be done by the teachers. Moreover, trainings and orientation programs should be arranged for the students, who study at the remote areas' schools far away from cities, by the zonal education office in Batticaloa.

Finally, everyone (teachers, students, parents) should understand the crisis situation and come forward to promote online learning in a better way.

ACKNOWLEDGMENT

REFERENCES

Adedoyin, OB & Soyka, E 2020, Covid-19 pandemic and online learning: the challenges and opportunities, Interactive *Learning Environments*.

Barrot, JS, Llenares, II & Rosario, ISD 2021, Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines, *Education and Information Technologies*.

Ferri, F, Grifoni, P & Guzzo, T 2020, Online learning and emergency remote teaching: Opportunities and Challenges in emergency situations, *Institute for Research on population and social Policies, National Research Council, 00185 Rome, Italy*.

Heng, K & Sol, K 2020, Online learning during COVID-19: Key challenges and suggestions to enhance effectiveness, *Cambodia Education Forum for Education*.

Hujran, OA, Aloudat, A, Hennawi, HA & Ismail, HN 2013, Challenges to E-learning success: The student perspective, International Conference on Information, Business and Education Technology.

Hettiarachchi, S, Damayanthi, B, Heenkenda, S, Dissanayake, D, Ranagalage, M & Ananda, L. Students satisfaction with online learning during the COVID – 19 Pandemic: A study at state Universities in Sri lanka (2021), Sustainability 2021, 13, 11749.

Khashunika, J, Lakmal, P & Kaushalya, Y (2021), Challenges and opportunities in online Education in Sri Lanka during the Covid – 19 Pandemic: Evidence from the University of Kelaniya, International Journal of Educational Research & Social Sciences.

Mallillin, LLD, Mendoza, LC, Mallillin, JB, Felix, RC & Lipayon, IC 2020, Implementation and readiness of online learning pedagogy: A transition to Covid-19 pandemic, European Journal of Open Education and E-learning studies, Vol.5, no.2, 2020, ISSN:2501-9120.

Rana, H, Rajiv & Lal, M 2014, E-learning: Issues and challenges, *International Journal of Applications* (0975-8887) Vol. 97, no.5, July 2014.

Srichanyachon, N 2014, The barriers and needs of online Learners, *Turkish online Journal of Distance Education* – TOJDE, Vol. 15, no. 3 (5), ISSN 1302-6488