



Issues and challenges in online learning of senior secondary students of the plantation sector schools in Sri Lanka – A research study

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Abstract

Online learning is seen as essential in this era, so all school students in the country have to engage in online learning whether they like it or not. This study attempts to identify the challenges and strategies to successfully address the concerns of Tamil medium students who are studying in grade 10 and grade 11 in Plantation sector schools in Sri Lanka in terms of digital access, digital literacy and e-readiness, delivery of online learning, and online overload. The study was conducted using quantitative and qualitative mixed research methods. A questionnaire based on the domains mentioned above, comprising 21, Likert-type items was prepared and administered to 450 students sample from plantation sector Schools in Central, Uva, and Sabaragamuwa Provinces in Sri Lanka. Data was also collected through focused group discussions with 20 teachers and 10 principals involved in online teaching in the same schools. According to data analysis, 63.7% of participants indicated that there are more challenges in access, 69.2% said that they face challenges in digital literacy and e-readiness, 53.65% showed that teachers do not have adequate pre-training to engage in online teaching and students have problems interacting with teachers and peers, and 68.15% students feel online learning as burdensome. Therefore, it is necessary to provide access facilities for learning online for the students in the plantation sector and it is essential to provide proper pre-training for teachers and students and create an appropriate environment to engage in online teaching-learning. Since students feel online learning is a burden, it is necessary to simplify and make these processes attractive, and further strengthening the online learning process is seen as essential.

Keywords: digital access, e-readiness, online delivery, plantation sector schools, secondary students

Introduction

Globally virtual learning activity is playing a very important role in today's era. Due to rapid technological development and the trend of globalization, the scope of learning activities of the students has greatly reduced. Due to this, students can feel that the facilities are available to carry out their learning activities in real-time. Due to this opportunity, the world is rapidly shifting to online learning. This change is also given importance in schools in Sri Lanka.

Sri Lanka is a country with many socio-economic geographical cultural features. The plantation area, considered particularly hilly, is an area engaged in the cultivation of the main export crops such as tea and rubber. They are mostly hilly and have high rainfall. It is also a cold region. Most of the people living here work in plantations. Also, they are seen as low-income earners. The houses they live in are seen as line dwellings with fewer facilities. Therefore, the students studying in this region are found to have limited learning and teaching facilities when compared to students from other regions in Sri Lanka. These students face various problems while engaging in online learning activities.

The sudden impact of a deadly disease called Covid -19, challenged the education system of the entire world and forced us to shift to an online learning mode.

This problem is also found in Sri Lanka. Online learning and teaching are being implemented in schools in Sri Lanka. However, plantation sector students face a variety of problems when engaging in online learning in this process. Therefore, it is necessary to identify such problems, propose

solutions, and help their studies. Various studies have been carried out in this regard. Education has been provided in many such as face to face, online modes. According to Harasim (1989), online education is a new domain of learning that combines distance education with the practice of face-to-face instruction utilizing computer-mediated communication. Online education has the following features: It provides a learning experience different than in the traditional classroom because learners are different, the communication is via computer and World Wide Web, participation in the classroom by learners is different, the social dynamic of the learning environment is changed, and discrimination and prejudice are minimized (Ascough 2002) (p.1).

The Government of Sri Lanka swiftly moved in to address the concerns of senior secondary students preparing for the G. C. E. Ordinary Level examination, due to start in December, by telecasting lessons for those students. However, the schools were not at all prepared for a distance learning mode, and hence innovation became an urgent necessity to reach out to the full student population. (Gamage, 2020) [3]. Even if online learning is implemented, infrastructure facilities such as a computer or smartphone, and Internet connection are essential to have that process.

More than 60% of households with school-age children have no Internet. (Gamage, 2020) [3] It is, therefore, doubtful whether all students involved in learning have these facilities. Even if the devices are available; telecommunication companies must provide Internet

connectivity. But many areas have not yet been provided with this facility.

Internet penetration in Sri Lanka has increased in recent years, but a digital divide between urban and rural areas persists. (Freedom House, 2019) This problem is especially prevalent in the plantation sector. Parents of senior secondary class students in these areas are tea estate labourers and low-income earners. The poverty rate is higher in the plantation sector than in parts of Sri Lanka (10.9% compared to 7.6% for rural areas and 6.7% nationally) (Living Wage Report Sri Lanka, 2015) Therefore, students studying in senior secondary classes in the plantation areas of Sri Lanka are seen as facing various problems and challenges while engaging in online learning. Hence, there is a need to help their learning by identifying such problems and challenges and proposing appropriate solutions to them.

Objectives and research questions

“Education is the most powerful weapon which you can use to change the world” (Nelson Mandela). For the children in plantation communities, learning online has simply not been viable. Children belonging to plantation communities have trailed behind their rural and urban counterparts concerning education. (Institute for Policy Studies and Institute for Social Development 2020). Senior secondary level students in Sri Lanka attend schooling for grades 10 and 11. These grades are very important because, after completing these grades they have to sit for the G. C. E. Orderly Level examination. This examination is necessary for various factors such as the acquisition of Career Opportunities, the Selection of proper stream in G. C. E. Advance Level, and other vocational studies in Sri Lanka. Admission to upper secondary school is extremely competitive with fewer places than interested students. (Justine D’Souza, and Thomas D. Moore, 2017). Hence, the plantation sector students face problems, such as understanding certain concepts that make learning complex, including practical and demonstrations by learning online. The Net is not right for all training. (Gary James 2002).

General objective

The major objective of this study is to explore the issues and challenges faced world that is rapidly shifting to online learning.

The following specific objectives were formed to achieve the study.

The specific objective of the study

1. To investigate the problems and issues with student support, flexibility, learning activities, access, and academic confidence
2. To explore the factors that make plantation sector students confident in online learning
3. To identify the resources to improve greater access for plantation sector senior secondary students in online environments
4. To suggest to improve the existing situation

Research questions

1. What are the major issues and challenges existing while engaging in online learning activities faced by the plantation sector Tamil medium senior secondary students?

2. What are the major challenges in online learning activities faced by the plantation sector Tamil senior secondary students?
3. What can be done to improve greater access for plantation sector senior secondary Tamil medium students in the online environment?
4. How to improve online learning in the plantation sector?

Literature review

The online learning teaching method announced in Sri Lanka due to the spread of Covid-19 is mentioned in the report “Impact of COVID-19 in the Sri Lanka education system” (AIESEC report- 2021). The impact of COVID-19 has created an opportunity for students to study online. Although this online education allows students to learn about new technology, it is less effective than direct education because students will not be under the teacher’s direct supervision. Furthermore, the main issue during taking online classes or lectures is poor networking due to this so many students and teachers are affected. Many poor students are unable to get an education properly due to the absence of smartphone, and laptop facilities in their homes during this pandemic situation. Thus, education reaches only a few students.

As well as this pandemic is provoking child employment. It directly affects the children’s life. COVID-19 has a negative influence on university students’ careers. It has increased the time taken for university students to receive a degree. Students or learners are prone to many health problems like visual impairment, laziness, and spinal pain as they engage in online learning mostly. And it stimulates some mental issues among students, teachers, and parents as well. In this pandemic situation, students interacting with their society become very poor. Also, students’ writing and reading skills and habits are declining these days. Relationship bonds are weakening because there is a situation where it is not possible to spend time with families despite being with them. The adage is that “setting up a school is more massive than setting up a thousand prisons”, this well illustrates the need for schooling.

Another study tells that Educators have traditionally expressed their doubt about the prospects of reproducing outcomes equivalent to traditional face-to-face instruction through online distance learning. (Paul Van Portfliet and Michael Anderson, 2018) This study quotes that, it is difficult to draw general conclusions about the efficacy of online learning as such, not least because it constitutes in significant ways a distinctive mode of learning when compared with real-world instruction. It is perhaps better, then, to look more specifically at questions such as the comparative strengths and challenges of moving to virtual schooling, the conditions which need to be in place for it to function well, and how this transition is experienced by learners with different capabilities. (L. Taylor, 2020)^[10]

(D. Jesuiya & C. Priyadarshani 2021) proposed that some aspects need to be taken care of to be successfully introduced online education in a country like Sri Lanka. This involves upgrading the infrastructure, enhancing Internet access, expanding rural areas, transforming teachers’ attitudes, etc. Schools and other educational institutions are required to provide exemplary teaching and guidance from both students and teachers for the use of online classes, which aims to enhance their convenience.

The above writers further say that one of the biggest challenges of rural students is 'No Smartphones or Notebook' and network difficulties often contribute to the dilemma for rural teachers. Teachers need to observe the change in their roles, i.e. from merely being a conduit of information to the planner of the instructional method, one of the major problems facing teachers in rural areas. Students are often said to be spoon-fed in conventional classroom schooling, but online courses need a learner-centered atmosphere that allows students to be self-motivated. Teachers ought to invest every effort into improving student mindsets. Schools or governments must periodically carry on training and learning projects for teachers as well as students to accomplish this aim. The study also revealed that e-learning has a more important role to play in the future, but it will not replace conventional face-to-face education in the classroom. It is very tricky to make a full transition to online learning. The advantages resulting from e-learning, however, should not be overlooked. As such, it is important to consider and take corrective steps to resolve the barriers that fall in the way of embracing online learning.

(Navaratnasamy Karthikeyan & Saman Thushara Priyadarshana, 2019) is worth exploring in their research, particularly in the area of student support in online learning, in line with recent advances in new technology and the changing needs of students. The new paradigm of integrating online learning into open and distance education is the way forward confronted by open universities. Further, they said that in-depth study in this area is inevitable to better understand the theory and improve the practices of open, distance, and online learning. (Muhammad Anshari, Yabit Alas and Nor Azmah Hi Mohd Yunus, 2016) are revealing important information regarding Internet-based activities and online learning in Brunei. This survey indicates that there is a trend away from traditional face-to-face learning towards online learning. They perceive that online learning offers benefits such as reduced traveling time for students and flexibility in their schedules. Online learning is convenient, as it can be undertaken anywhere and anytime through a simple click of a mouse or touch of a finger. Further, they said, online learning systems are very efficient, as learning via the Internet or apps only requires access to a website. The majority of participants are young and highly connected Internet users who like to use online media, although they are unsure about the effects of online learning on their study performance. Online learning systems present opportunities for students who are unable to leave their jobs, but can still enroll in online courses, and students who live a long way from the learning institution they wish to attend.

Methodology

Research design

The mixed method was used since the scope of the study entails both quantitative and qualitative aspects of research. This study followed various steps including the construction of the tool. Selection of the sample and the sample design, applying the strategy, data collection, and use of appropriate statistical techniques for scientific analysis. In educational research, quantitative researchers view human behavior as regular and predictable (Johnson & Christensen, 2008).

Sample

The theoretical population for this study included principals, teachers, and students of the schools. Purposive sampling was used for selecting 1AB and 1C schools in the plantation sector. Grade 10 and 11 Tamil medium students were selected. Questionnaires were provided to the students. An objective-type test consisting of 21 items was constructed for this study. Item validity by item analysis and reliability by the split-half method was used. Cronbach's alpha coefficient was used to measure the reliability of the instrument in this study. A focus group discussion was conducted with the principal and teachers. The sample of participants was selected as shown follows.

Table 1: Sample details

Details	Amount
Students	450
Teachers	20
Principal	10

Data collection

The survey instrument was used for this study. Data collection was done in the following ways.

The questionnaire was issued to the students. Questionnaire supported to analyze the perceptions of students. Focus group discussion was conducted with the principal and teachers. It was supported to find the issues and challenges the senior secondary Tamil students faced in the plantation sector. Before the survey distribution, a pre-notification was delivered to participants through the particular school principal to provide an introduction and some background for the study.

The questionnaire consisted of five Likert scale statements. (strongly agreed 5 points, agreed 4 points, neutral 3 points, disagreed 2 and strongly disagreed 1 point) and the items of the questionnaire contain four domains digital access, digital literacy and e-readiness, delivery of online learning, and online load.

The qualitative aspects were conducted with focus group discussion. In the discussion, there were ten principals and 20 teachers who conducted online classes.

Data Analysis

Data analysis was done through descriptive statistical techniques using SPSS software.

According to the data analysis, 56.0% of grade 10 students and 44.0% of grade 11. Among them, 67.9% of female and 32.1% of male students were subjected to this study.

Furthermore, 55.3% of students live in Estate areas, 30.4% live in rural areas and 14.3% of students live in urban areas. 58.3% of students were from Central Province, 22.3% of students were from Sabaragamuwa Province and 19.4% of students were from Uva Province have participated. Among them, 18.33% of students participated from the Badula district, 58.53% from the Nuwara Eliya district, and 23.23% from the Ratnapura district. According to these data, the reason for the large number of participants from the Central Province and Nuwara Eliya District is that there is a large number of plantation people living in the area.

Table 2: Learner’s responses towards access to online learning

Item No	Item Description	strongly agreed		agreed		neutral		disagreed		strongly disagreed	
		Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
1	At home, I have at least my own smartphone or tab or laptop or desktop so I can engage in learning without any problems	26	6.1	16	3.7	14	3.3	248	58.1	123	28.8
2	I have access to a fast internet connection at my home to continue online learning activities without any interruption	1	.2	18	4.2	36	8.4	257	60.2	115	26.9
3	There is ample space for my learning activities at home so I can attend online classes without any disturbance from my family members	15	3.5	14	3.3	40	9.4	247	57.8	111	26.0
4	I can access a hardware engineer or technician to fix my digital devices to repair	70	16.4	125	29.3	59	13.8	90	21.1	82	19.2
5	The storage capacity of my digital devices is quickly filling up due to the digital media shared by social groups and various mobile apps installed for my learning.	116	27.2	124	29.0	53	12.4	78	18.3	53	12.4

Based on the digital access domain, only 10% of students have access to devices and engaged in online learning without any problem. 3.3% of the students chose the statement undecided as they have access to a device in some way. However, 86.7% disagreed with this statement. This shows the lack of devices among the students. 4.34% can get fast internet without any interruption. 88.1% rejected the statement that they can get fast Internet without any hindrance to learning. This shows that there is no fast

Internet facility for online learning activities. Next, only 6.9% have enough space in their home for online learning. As 4.34% have chosen undecided, it can be assumed that they are getting space somehow. But 83.8% of students are found to have inadequate space at home for online learning. Next, only 40.3% find that they are unable to fix their virtual devices’ faults. 59.7% indicated that they fix devices in some way if they break down. And 56.2% of students have problems with the storage capacity of their devices.

Table 3: Learner’s responses towards digital literacy and E-readiness

Item No	Item Description	strongly agreed		agreed		neutral		disagreed		strongly disagreed	
		Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
1	I find it difficult to search for relevant useful and quality learning materials from the vast amount of information available on the Internet	87	20.4	127	29.7	49	11.5	106	24.8	56	13.1
2	I face difficulties in switching from direct learning in the classroom to online learning	111	26.0	168	39.3	50	11.7	66	15.5	30	7.0
3	Direct classroom learning differs from online learning and both require different skills	41	9.6	247	57.8	52	12.2	60	14.1	23	5.4
4	do not have enough digital knowledge and skills to use online learning tools for online learning	210	49.2	132	30.9	30	7.0	34	8.0	19	4.4
5	I am concerned about my privacy and security issues on the Internet	210	49.2	132	30.9	30	7.0	34	8.0	19	4.4

50.1% of those engaged in online learning had no problem finding quality e-learning documents, in the domain of digital literacy and e-readiness. It can also be observed that 31.9% of students face problems in finding them properly. Also, when the classroom changes from direct learning teaching activities to online learning activities, 66.6% of students are confused, 11.0% of students follow their learning activities to some extent and only 22.5% of students accept the changes and engage in learning. Also, based on the statement that online learning to teach is

different from live classroom teaching and both require different skills, 67.4% of respondents agree with it and only 19.5% of respondents think that different skills are not required. It is also known that only 12.4% of respondents have sufficient digital knowledge and skills to use different tools during online learning and 80.1% of respondents do not. Also, it can be seen that 80.1% of students are very concerned about the issue of privacy and security while using the Internet.

Table 4: Learner’s responses toward delivery/ transaction of online learning

Item No	Item Description	strongly agreed		agreed		neutral		disagreed		strongly disagreed	
		Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
1	Teachers are at risk in teaching through online platforms due to a lack of prior training	55	12.9	122	28.6	106	24.8	82	19.2	47	11.0
2	I can engage in online learning and do not need help or technical assistance to access learning and teaching activities provided by my teacher.	47	11.0	49	11.5	47	11.0	161	37.7	119	27.9
3	I get many opportunities to interact with my teachers and peers as teaching and learning take place simultaneously	109	25.5	161	37.7	50	11.7	63	14.8	43	10.1
4	I have ample opportunities to interact with my teachers and	74	17.5	138	32.7	63	14.9	91	21.6	56	13.3

	peers as teaching and learning take place at different times										
5	Online learning is just as effective as classroom-based online learning	11	2.6	47	11.1	45	10.6	222	52.4	99	23.3
6	By engaging in online learning, I have been able to fully acquire the skills for each subject	132	31.6	125	29.9	58	13.9	56	13.4	47	11.2

Under this domain, 41.5% of teachers carry out their teaching activities without any prior training and 30.2% of teachers carry out satisfactory teaching activities without any prior training. And only 20.5% say that they do not need any help or technical assistance for the teachers' learning and teaching activities. 65.6% of the respondents said that pre-training and technical facilities are required. It is also known that 63.2% of the students have the facilities to communicate with the teacher and peers during synchronized online learning and teaching process and

24.9% of the students have very little access to these facilities. Also, 50.2% said they could interact with teachers and peers while 34.9% said they did not have the opportunity to interact with teachers and peers when online learning took place during asynchronous hours. 75.7% of respondents said face-to-face learning is better and only 13.7% of respondents said online learning is better. 61.5% of respondents said that face-to-face learning activity helps them develop their skills and 24.6% of respondents said that they can develop their skills through online learning.

Table 5: Learner’s responses toward the online load

Item No	Item Description	strongly agreed		agreed		neutral		disagreed		strongly disagreed	
		Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
1	I find it easier to face exams after online education	29	6.8	62	14.5	72	16.9	167	39.2	96	22.5
2	In some cases, there is a need to sit for a long time due to continuous online classes. It makes me tired and depressed	126	29.5	189	44.3	35	8.2	46	10.8	31	7.3
3	Online learning from home gives me the freedom and flexibility to learn at my own pace and the willingness to engage in continuous learning through online education.	38	8.9	70	16.4	65	15.2	148	34.7	104	24.4
4	Online learning has a sense of isolation as I cannot interact directly with my classmates	137	32.1	188	44.0	33	7.7	42	9.8	26	6.1
5	If I can't cope with this Online learning system, I feel to left from it	136	31.9	171	40.0	90	21.1	24	5.6	6	1.4

Under this domain, 69.7% of students face difficulties in facing online exams after engaging in online learning. 21.3% of students reported having no problems. And 78.3% said sitting for long periods while participating in online classes was tiring and depressing. Also, only 18.1% of students report that they can learn in online classes without any problem. Also, 59.1% of students do not want to engage in online learning from home. This can be said, in the problem of access to online learning for students. It is also known that 76.1% of students feel isolated in online classes as they cannot interact directly with their peers. And 15.9% did not express such sentiments. 71.9% of students could not cope with the online learning system and wanted to leave it and only 7% of students willingly accepted this learning process.

Findings

Communication and Infrastructure

As most of the plantation areas are found in hilly areas, residences and schools are found in the low areas between them. Teachers and Students who carry out their learning and teaching activities in such a situation have difficulties in receiving signals at school and home. Thus there are problems in conducting online classes continuously and learning in online classes. A similar situation is also seen in the information and communication technology laboratories found in schools. Also, if there are two or more school-going children in a family, parents face financial difficulties in providing computers or smartphones for online learning. Students and teachers are found without appropriate pre-training to carry out learning and teaching activities in online classrooms.

Home and adequate space for learning

As already mentioned here, most of the families in the plantation sector live in line-style dwellings with insufficient space. Therefore, the students of Plantation School mentioned that they do not have enough space to study in online classes. And if two or more children are going to school in such families, the space problem is seen as an obstacle to engaging in the full learning process in the present classes. Likewise, proper use of devices such as computers is seen as an obstacle to engaging in online learning.

Weather conditions

As the plantation areas are hilly, the climate is cold and often rainy. Because of this, connections are often interrupted and it affects online learning. As a result, teachers and students are unable to continue their learning and teaching activities. Also, the computer and smartphones used by teachers and students are prone to damage quickly due to moisture, so this is also a hindrance to online learning and teaching activities.

Discussion

According to the study, 63.7% of participants indicated that they face challenges in accessing online learning. Devices and fast Internet access are essential for successful online learning. This finding is consistent with a study by Riksiha Binumak and Anita Priyadarsani *et al.* (2020) said devices and a fast Internet connection enable online learning by more than 70%. The article, Sri Lanka online education goes to 80% Students, despite dissatisfaction, also confirm it. Also, an article published in Transform with JKIT *et al.* (2023) states that poor signal quality and lack of adequate

electronic devices at home make online learning activities difficult.

According to the survey results on the domain of e-literacy and e-readiness, 69.2% of the participants were found to be less knowledgeable to participate in online learning. But this is an important factor in engaging in online learning. Online learning cannot be engaged without e-literacy and e-readiness. This is consistent with Pirashanthan *et al.* (2021). The study mentions that e-literacy and e-readiness are essential for viewing recorded videos and submitting assessments easily and quickly.

According to data collected from students and focus group discussions, 53.65% indicated that online learning was not delivered systematically and that there was insufficient pre-training. Delivering is a very important factor for learning, without that the learning process will not succeed. Therefore, the content should be properly presented when teaching and learning take place online. The study, Asian Journal of Distance Education – Volume 15, (2020) confirmed the fact that teacher and student-directed capacity-building and pre-training programs greatly help in online learning.

When learning is perceived as a burden, learning does not take place. According to the study, 68.52% stated online learning to be burdensome. Hence, we should provide online learning more efficiently, more attractive, and more strengthen. An article published in the electronic journal confirms it. This is referred to in the e-paper Daily FT, Covid – 19 and online education in Sri Lanka: Can we do it better? as “Online education is all about SMART Content. Students need to be able to grasp the key concept without being overwhelmed with content. Just like excessive content is a major ‘turn off’ in any presentation deck, the same applies when it comes to online learning as well, irrespective of the type of platform used.”

Recommendation and suggestions

1. Generally, signal facilities are very less in plantation areas, so to address these, with the help of government, private companies, and donors, telecommunication towers in mountainous areas should be implemented to provide continuous and low-cost signals to schools and residences.
2. Introduce free or low-cost data packages to the teachers and students of the plantation area for their learning and teaching activities.
3. Provide facilities for teachers, and students to get computers, laptops, tab, etc. for their learning and teaching activities free of charge or on hire purchase or at low cost as affordable to their economic conditions.
4. As most of the people live in houses with limited space in the plantation areas. Actions are being taken to provide houses with adequate space for the teachers and students living there for their learning and teaching activities through government, private, or donors.
5. Provide pre-training to students and teachers to engage in online learning teaching activities.
6. Providing training or appointing technicians to troubleshoot technical faults in the electronic devices they are dealing with.
7. It is necessary to make arrangements to provide more storage facilities to store the learning material that the students need when they carry out their learning activities online.
8. Teachers and students engaged in online learning activities must ensure their privacy and security while using the Internet.

Limitation

This study was carried out limited to the plantation sector only. Therefore, coverage of the whole country is necessary to get more clarity about the online learning status in the country. Similarly, the population of the study included only students in grades 10 and 11. Also, only Tamil medium students have been included in this study. This should be explored to include students from other languages as well.

Research Cap

It can be known through practice and various studies, online learning is very essential in this era. Therefore, it is essential for the students studying in the plantation area to familiarize themselves with the online learning system. According to the research, students feel isolated in online learning and try to leave out of it. Therefore, it is recommended that there is a need for research to identify the correlation between the problems faced by students in engaging in online learning and the effective handling of online learning tools.

References

1. Boggitt D. Lockdown Learning. Retrieved May 20, 2021, from Cranleigh: <https://www.cranleigh.org/our-school/academics/lockdown-learning>, (2020).
2. Castro MD. Efficacy of online learning courses for higher education institutions using meta-analysis. *Education and Information Technologies*,2021;26:1367–1385.
3. Gamage S. What did we learn about distance education during the lockdown? *ADVOCATA*, (2020).
4. Gillett-Swan J. The Challenges of Online Learning. *Journal of Learning Design*, 2017;10:1.
5. Hansson PM. Towards e-learning for all in Sri Lanka – progress and problems in some selected Sri Lankan 21st-century initiatives. *ResearchGate*, 2011.
6. Justine D’Souza C. A. Education in Sri Lanka. *WENR*, 2017.
7. Kebritchi M. Issues and Challenges for Teaching Successful Online Courses in Higher Education: A Literature Review. *Journal of Educational Technology Systems*. 46.10.1177/0047239516661713. 4-29 (2017).
8. Kitnasamy MV. It is time to change the narrative - Measuring the devastating impact of COVID-19 on the education of children in tea plantation communities in Sri Lanka. *Progress Report 2018*. Ministry of Plantation Industries, (2020).
9. Slack NI. E-Learning Challenges Faced by Academics in Higher Education: *Journal of Education and Training Studies*. Sri Lanka. *FREEDOM ON THE NET*,2019;3:5
10. Taylor JL. Online Distance Learning: A Literature Review, (2020).
11. Yogendrarajah R. Challenges in Online learning toward a better learning environment, 2013.
12. A Case Study on Bachelor of Business Management (BBM) Online Degree Programme at the University of Jaffna, Sri Lanka. *ResearchGate*.
13. Pirashantha M. Experiences in Online Learning during Covid-19 Pandemic in a College of Technology in Sri Lanka, an article, *International Research Symposium*. The University of Vocational Technology - Sri Lanka (2021).