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Lessons (to be) Learned? An Investigation of Online Learning during the COVID-19 School Closures in a Brunei Primary School

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Abstract

This study explores data gathered from Year 6 subject teachers and senior administrators at a public primary school in Brunei Darussalam regarding online learning and teaching, and the transformation challenges encountered when moving from classroom education to virtual-based learning during the COVID-19 pandemic. A mixed methods approach was used, and the findings revealed there was both student learning loss and gain in the 2020 primary national school assessment. Unequal access to technology deprived disadvantaged students while internet issues showed that students experienced slow connections and inadequate internet quotas for online learning. The most significant findings were that collegial support and collaboration helped to reduce teachers' anxiety levels, and that having digital competence was advantageous in successfully implementing technological teaching methods to support and advance education. Parental involvement in their children's education at home was equally important as in regular schooling. The limitations of this study were that the opinions of the senior administrators and subject teachers were based on their self-reflection on evaluation, analysis and action plan; furthermore, the mixed approach reduces direct comparison with other public primary schools. Such educational challenges facing students and teachers may lead to better understanding and future research and developments in improving educational systems.

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1. Introduction

COVID-19 pandemic is taking a toll on people's lives, where people face damaging complications in many aspects of human activity. The outbreak has negatively affected educational activities, leading to school closures (UNESCO, 2020). The social environment of schools means that they are crowded with people; thus, physical distancing reduces interpersonal contact and minimises the virus from transmitting from one person to another (UNESCO, 2020). Closing educational institutions was a proactive decision from the Ministry of Education of Brunei Darussalam (2021), and the closures have disrupted instructional learning. Teachers are compelled to pursue temporary solutions on different online learning platforms, and they face challenges in their teaching methods from classroom to virtual-based environment – consequently, the schools compensate for learning loss. The accommodation has led to myriad challenges, which left many teachers unequipped. Several empirical studies (Adedoyin & Soykan, 2020; Alves, Lopes, & Precioso, 2020; Aydin-Guc & Baki, 2019) have referred to the unavoidable transformation with shortfalls in teachers' competencies – content, pedagogical and technological knowledge. The transformation has uncovered limitations in how online learning is adapted in schools, and efforts such as free webinars and policy documents are constructed to support deficiencies (Teras, Suoranta, Teras, & Curcher, 2020). The challenges that teachers face in their teaching unfold quickly so that they need time and support to combine them into their practice, and they will experience challenges in designing their online pedagogies. However, teachers have pursued continuing professional learning throughout the school year and have shown their digital teaching skills in some range

but have been lacking in constructing their original content elements (Carlo, 2021; Crick, 2021; Seufret, Guggemos, & Sailer, 2020).

Brunei Darussalam's 21st Century National Education System (SPN21) emphasises digital skills, as these skills strengthen the quality and value of human capability in terms of economic, social and educational factors. Digital skills affect learner competence by producing dependable and practicable skills in literacy and numeracy – these include critical thinking and decision-making (Ministry of Education, 2021). However, there is an intensified recognition of the importance of formative assessment and its role in upgrading and enhancing teaching quality and student achievement.

According to UNESCO (2020), interrupted learning affects intellectual development and leads to disproportionate access to electronic learning, which influences students who are not accustomed to using the internet, are ill-prepared and lack resources which they need at home, or face academic disadvantages (Stiglitz, 2020). The Ministry of Education has implemented in classrooms a blended learning approach that provides face-to-face instruction while using multiple delivery media, which develops application-learned behaviours and presents online learning to the learners (Broadbent & Fuller-Tyszkiewicz, 2018). Thus, the transformation favours schools with an information communication technology (ICT) framework which employed digital learning platforms before the outbreak and which have been able to adapt teachers and students to utilise and increase the usability of and accessibility to educational materials and tools which meet the needs of diversified learners (Sanger, 2020).

Different multiple delivery formats give rise to disadvantaged students with limited internet access and digital devices. The Ministry of Education has collaborated with Unified National Network (UNN), a telecommunication service provider, which monitors, allows exemptions and assesses broadband users when they reach their maximum internet quota, and with Datastream Digital (DST), a sales communication company, which introduced a subsidised student rate package that has a cheaper tariff for financially challenged students. Ministry of Transport and Infocommunication (2021) organised a donation drive by inviting members of the public to donate used technological devices, and subsequently a diagnostic was performed, and required learning applications were installed on all devices' systems. The Ministry of Education then distributed the devices to disadvantaged students. Although schools are adapting to the transformation, the fact remains that access to the internet and the availability of digital learning tools are primary requirements for any online teaching and learning strategy (Gray, Magdefrau, & Riel, 2021; Stiglitz, 2020).

Another avenue that accommodates student needs is educational broadcasting. The Ministry of Education has collaborated with Radio Television Brunei (RTB) which uses its broadcasting role to produce and transmit educational programmes, relays learning materials to those who do not have access to the internet, delivers teaching methodology, and allows viewers to observe broadcasts via multi-platforms.

Subject teachers need to use different delivery approaches for different students based on their individual living circumstances. One approach is to prepare a take-home package, which comprises a printed paper copy of learning materials. A parent collects the package on a specific day and delivers the finished work on another day of the same week. Parental involvement strengthens school-home communication, and it reinforces learning (Boonk, Gijselaers, Ritzen, & Brand-Gruwela, 2018). Conversely, parents may not give their children the support they need and this may lead to increased stress levels, resulting in a negative effect in the home environment on their children's ability to adapt to online learning (Tonks, Kimmons, & Mason, 2021).

The in-school learning process in primary schools was suspended from 11th March 2020 to 2nd June 2020. When the students returned to their respective schools, they came four times a week – Monday to Thursday, and stayed at home on Saturday. They received their online lessons on that Saturday while other students who had no access to the internet received their take-home packages on Thursday for their Saturday classes. In July, a further sanction was removed; thus, the students continued their lessons from Monday to Saturday, except Fridays and Sundays.

Nevertheless, the usage of educational technologies intensifies student-teacher, parent-teacher, and teacher-teacher relationships, and technological knowledge increases interests and competencies as well as improving digital skills. The integration of technologies is no longer a choice: it becomes a need for technological change, which embraces creativities and innovations in learning. Online education has become a new everyday online learning and more oriented in delivering quality education towards learning purposes for every learner.

2. Objectives and Significance

The objectives are to explore the experience of teachers in a public primary school regarding online teaching and learning, as well as to look into the causes of student learning loss in the pass percentage in the school-based assessments and primary national school assessment. Actions and reactions from all concerned parties are addressed so that the adaptation would carry through with ease and with subsequent impact on quality learning. As such, to achieve this study's objectives, the following questions are addressed:

1. What do the administrators and teachers do to provide the continuity of students' learning process?
2. What are the administrators and teachers' opinions of online learning?
3. What has affected the students' performance?

4. Have the students been adequately prepared?

The significance is that the findings might provide relevant information in strengthening teachers' competencies, in supporting teachers' teaching processes and student learning outcomes, and in providing new approaches for academic assessment.

3. Methodology

3.1. Design

This study employed a mixed methods approach via the collection of data through questionnaires, and the approach was to collect the data through questionnaires and unstructured interviews with open-ended questions; the data were integrated and analysed, according to frequently occurring common themes. Although the design was the most appropriate to be used for this study, the results cannot be generalised to other primary students and teachers in other public primary schools.

3.2. Participants

Interview data were collected from six people – the criteria were six teachers who worked at a public primary school. They were intentionally chosen, and during the coronavirus pandemic period, five of the teachers took part in online teaching as they taught Year 6 (aged 10-11), and the sixth teacher was the headmistress. Out of the five teachers, one teacher taught both Malay Language and Malay Islamic Monarchy.

3.3. Data and Methods

Anonymity and confidentiality were assured and emphasised initially, and the study's objectives were clearly explained to the participants. They were advised on their right to decline participation, and their participation had no monetary payment. They signed a confidential consent form to show their agreement to participation in the study. The interview comprised a set of questions which was tested by giving them to two teachers from a different year class. The testing ensured that no question caused confusion or contradictions between questions in preparing the questions. One question was removed as it was ambiguous; both teachers agreed on other questions. The final set of questions was tested once more by giving them to another teacher from a different year class. The teacher agreed on the questions; no further question was removed from the final set. The questions were ready before the actual interviews started. Each teacher was interviewed. The testing venue was at the school library, and a ten-minute interview was recorded and transcribed.

The study comprised three parts: demographic information, that is the information concerning age, gender, educational level and experience of teaching in terms of number of years; data analysis, that is all questions were content analysed; and results and discussion, that is the study would provide a rich summary of findings and discussion.

4. Analysis and Data Interpretation

4.1. Demographic Information

4.1.1. Participants' Background

The participants' background shows the distribution by age, gender, educational level and number of years of teaching experience in Table 1.

Table-1. Participants' Background.

No	Code Teachers	Age	Gender (M/F)	Educational Level	Number of Teaching Experience in Years
1	T1	43	F	B. Ed in Primary Education	17
2	T2	44	F	B. Ed in Primary Education	18
3	T3	46	F	B. Ed in Primary Education	19
4	T4	54	F	B. Ed in Primary Education	28
5	T5	52	F	B. Ed in Primary Education	28
6	T6	53	F	M.A. Primary Education	22

Table 1 illustrates the distribution of teachers' backgrounds. The teachers were all female, and there was no male teacher teaching in Year 6 in 2020. The average age was 48.6; their educational background was equivalent to each other. Their average amount of teaching experience in years was 22. All the teachers were highly experienced, and they held an educational qualification in primary education. Five teachers (83.3%) held a bachelor's degree, while one (16.7%) held a master's degree. The length of teaching experience and the teachers' age influenced teacher technology integration. Those in their fifties were exposed to ICT due to their confidence in using technology devices and having technological knowledge while attending in-house learning sessions and other professional development activities. Those in their forties, conversely, were liable to integrate technology skills in their teaching practice, used technology devices extensively and had substantial technological knowledge, which was due to their social familiarity with ICT.

5. Results and Discussion

5.1. Results Analysis Reports

The data obtained were from the results analysis reports for 2018, 2019 and 2020, while the questionnaires and interviews with the subject teachers and administrators were analysed; the data were categorised into themes to reveal the findings.

Table-2. Year 6 Results Analysis Reports for 2018, 2019 and 2020.

Subject	PSR 2018	PSR 2019	2018/2019 Difference %	PSR 2020	2019/2020 Difference %
Malay Islamic Monarchy	100%	100%	0.0%	100%	0.0%
Malay Language	95.7%	100%	+ 4.3%	100%	0.0%
English Language	95.5%	84.2%	- 11.3%	100%	+15.8%
Science	91.3%	83.3%	- 8.0%	81.8%	- 1.5%
Mathematics	73.9%	61.1%	- 12.8%	68.2%	+ 7.1%

Table 2 shows the primary school national assessments' results analysis in 2018, 2019 and 2020 from a public primary school, and each year shows the pass percentage for each subject. The results were analysed according to subjects.

Malay Islamic Monarchy maintained 100% for three years, whereas Malay Language improved by 4.3% from 2018 to 2019, achieved a 100% in 2019 and stayed at 100% in 2020. English Language decreased by 11% from 2018 to 2019, whereas it improved by 15% and achieved a 100% in 2020. Science decreased by 8% from 2018 to 2019, with a further reduction of 1.5% in 2020, while Mathematics tailed off by 12.8% from 2018 to 2019, and increased by 7.1% in 2020.

Subject teachers delivered their lessons using either visual cues combined with audio, or text-based information. They adapted their teaching strategies, which created a student-centred environment where the students engaged with their teachers, and constructed knowledge. The challenges faced in Science and Mathematics were that the activities comprised experiential learning, which included reflection and hands-on experience, and the activities were not fully practised due to lack of resources at home, less guidance from students' parents and inattentive students. Another influential factor was due to lack of foster independence because not all Year 6 students were mature enough to be responsible for their learning. Thus, students needed scaffolding; students resorted to rote learning to pass their examinations, but with scaffolding from adults' supportive role, students could solve problems and learn with better understanding. The differences in time committed to online engagement and participation resulted in contrasting consequences. Monitoring students' performance and attendance are equally important.

The suspension lasted only for 13 weeks, and the results revealed that a learning loss did happen in the first school-based assessment (SBA 1) in Science and Mathematics but that there was a learning gain in the second school-based assessment (SBA 2), and the other subjects' results were higher and attained a 100% rate.

Table 3 explains the period between first school-based assessment (SBA 1) and second school-based assessment (SBA 2), and the period between second school-based assessment and primary school assessment.

Table-3. Year 6 Results School-Based Assessment 2020 and Primary School Assessment 2020.

Subject	SBA 1 2020	SBA 1 / SBA 2 Difference %	SBA 2 2020	SBA 2 / PSR 2020 Difference %	PSR 2020
Malay Islamic Monarchy	100%	-5%	95%	+5%	100%
Malay Language	91%	+9%	100%	0%	100%
English Language	50%	+9%	59%	+41%	100%
Science	77%	-13%	64%	+17%	81%
Mathematics	36%	0%	36%	+32%	68%

5.2. The Period between First School-Based Assessment (SBA 1) and Second School-Based Assessment (SBA 2)

SBA 1 was tested on 1st March 2020 before the school closure, and the results were from face-to-face learning. SBA 2 was conducted after the students returned on 2nd June 2020, and the results were from virtual learning. The national examination for primary student attainment is called Penilaian Sekolah Rendah (PSR) in Malay or Primary School Assessment, and the Year 6 students (aged 10-11) sat for their national examination between 14th November and 23rd November 2020.

Malay Islamic Monarchy, in its two school-based assessments, shared a difference by five per cent and further improved another five per cent and stayed at a 100% rate, whereas Malay Language improved by nine per cent and stayed at a 100% rate at SBA 2 and primary school assessment, respectively. English Language increased by nine per cent, with a substantial leap of 41% and remained at a 100% rate, while Science tailed off by 13% and increased by 17% in SBA 2, and ended at an overall 81%. Mathematics remained the same at 36% in its two school-based assessments and recorded a significant improvement, with a marked rise of 32% at

primary school assessment. It stayed at 68% at its final result; the result had improved from an unchanged zero per cent to a 32% out of 68%.

The students experienced learning loss, during the suspension and the losses were evident across two subject areas: Science and Mathematics. Student-student and student-teacher engagements were at a minimum, and this was due to poor attendance and monitoring by parents; having parental support became critical to their children's progress in their online learning. After the suspension, the same subjects had gained some learning despite their overall percentages being from mediocre to unsatisfactory results. Science and Mathematics required a communicative instructional method that supported more active learning on the part of students in developing students' problem-solving and critical thinking and a more facilitative role for teachers. The language used in Mathematics and Science is a means of communication and an instrument of thought. In a classroom setting, students were expected to engage with their peers and teachers.

5.3. The Period between Second School-Based Assessment and Primary School Assessment

Measures were lifted, and schools reopened on 2nd June 2020. All schools provided prevention strategies that prioritised using masks correctly, using hand sanitisers and practising physical distancing.

Between the second school-based assessment and primary school assessment from 2nd June to 14th November, the teachers went back to face-to-face learning. The subject teachers assessed and evaluated their students' work, and the quality of learning relied on the teachers as the students' sources of information. The teachers were directly involved with their students in discussing content and presenting lesson content. The Examination Department at the Ministry of Education did not change or postpone the dates of the primary school assessment. Thus, the subject teachers had to prepare their students within a short period. Their preparation included having Friday and Sunday classes as interventions in providing additional support and matching the limited time to cover the syllabus, and the short period would likely impact the students' academic results. They claimed that they had completed their subject's syllabus and their students would be ready for their primary school assessment in November.

Science, Mathematics and English Language showed a remarkable increase in percentage from the second school-based assessment to primary school assessment. The subject teachers engaged with their students using dialogues by involving them in inquiry and construction of knowledge; these involvements encouraged and led to more varied and extended student contributions. By giving students control of their learning in their student-teacher and peer interactions, these engagements were possible by asking students to explicate further their explanation and that of other students. However, students tended to memorise Science and Mathematics concepts. Rote memorisation might be an effective method, but it would not support critical thinking because the latter promotes problem-solving, decision-making, language, and reasoning skills.

Table-4. Teachers using educational website applications or online platforms.

No	Website Application / Online Platform	Frequency	Percentage
1	Zoom	6	28.6%
2	WhatsApp	6	28.6%
3	Google Classroom	4	19.0%
4	YouTube	3	14.3%
5	Flocabulary	2	9.5%
	Total	21	100%

Table 4 shows which educational website applications or online platforms were used. These software applications added to online learning and teaching, and they assisted teachers in their teaching methods. The applications were used to create content, access content, and contribute to engaging students through a virtual learning environment where students learned through exploration and discovery. The subject teachers essentially used the software applications for their online delivery as well as continuously assessing and interacting with their students.

An agreed consensus among the teachers was that they chose a consistent management platform for their students to use and for themselves: they chose five software applications - Zoom, WhatsApp, Google Classroom, YouTube and Flocabulary. Using the same applications could also avoid needless disagreement among them and students' parents when the parents assisted their children's learning or navigated the applications for their children.

Zoom (28.6%) and WhatsApp (28.6%) were the most used. Zoom is a video communication platform that allows users to initiate audio and video conferencing, and the platform is compatible with most common computer and smartphone operating systems. WhatsApp is another communication platform, which facilitates messaging, voice calling, video recording/creating and sending and receiving documents, photographs and videos. This platform is compatible with any mobile operating system and works with personal computers and laptops as well.

Google Classroom (19%), YouTube (14.3%) and Flocabulary (9.5%) came third, fourth and fifth, respectively. Google Classroom creates new documents, shares videos and files between students and teachers,

and records students' marks. YouTube is a video communication platform. Educational videos are created and uploaded to the servers; YouTube supports student-teacher engagement by facilitating discussion and reflection and collaborating on a single or a group sharing project. Flocabulary is an educational learning website where songs intrigue and engage students' interests, and the songs create emotional links between students and songs.

Table-5. Ability to use online platforms.

Coded Teachers	Abilities to use Online Platforms
T1	I am comfortable using Google Classroom and Zoom.
T2	The ones I am using are all right and easy to use them.
T3	My skills get better after practicing and using the platforms every day.
T4	It becomes easy to use after my colleagues teach me.
T5	With many practices using google classroom, I am confident to use it for my lessons.
T6	I am confident my colleagues know how to use the websites. I prefer Zoom and I know how to use it.

Table 5 and subsequent Tables 6 to 8 are the teachers' own comments in their own words. Table 5 illustrates the teachers' abilities in using software applications for their lesson delivery and their interactions with their students. The teachers disclosed that they were confident and comfortable in their transition by using content-sharing and communication platforms after having some practice and being familiar with the features and functions of the applications. In this regard, they encountered digital inclusion in which they had access to technology and applied them in their instruction.

It was found that the teachers had some general knowledge of technology; however, none of them had previous experience in conducting online classes. On that account, they could not support student digital learning if they had no pedagogical experience in technology use. They had to continuously reinforce their existing skills, learn new skills, and strengthen their learning strategies to assist their students. Thus, the teachers had to maintain a continuing practice with technology as this secured a consequential effect in technology use. They also directed their mastery towards teaching methods, which reinforced their teaching and gave support to the flexibility of their online teaching-learning process.

Table-6. Awareness of help and limited use of online platforms.

Coded Teachers	Awareness of Help and Limited Use of Online Platforms
T1	I ask my colleagues for IT help because I need to prepare my lessons. I use only three applications - WhatsApp, Google Classroom and Zoom to deliver my lessons to my students.
T2	I use the help option and watch tutorials from YouTube. I know I should learn more applications. My colleagues and I help each other.
T3	I ask my friends. I know my skills are limited and I fear my attempts will be used against me.
T4	I do not know many applications. I do not know how to upload my lessons until my colleagues show me. I make many mistakes. My colleagues are helpful.
T5	After my colleague teaches me, I know what to do. I do not like using a webcam and recording my voice.
T6	I use Zoom and WhatsApp for my meetings and messages with my colleagues. I do not use other applications. I ask my colleague to help me and I share my knowledge with my other colleagues.

Table 6 describes an awareness of help and limited use of online platforms. The teachers had a previous early understanding of developing collegial support, and the senior administrators took a reflective stance by inviting an information technology teacher to conduct a learning session with the teachers on how to use the software applications. The in-house learning session showed that increasing teachers' confidence, motivation and commitment were effective and conducting a teacher professional development activity was the most suitable decision the school management had made. The support revealed teacher competence in using technologies, which depicted either a low or a high value in technological knowledge resources: teacher competence revealed teacher experience, reliability and responsibility with technology usage. The teachers' insecurities were related to stress, and there was a reluctance to be recorded as they feared that their faces and voices would be misused elsewhere.

Collaborative learning was the quickest way to continually encourage and upskill their existing skills through improving peer cooperation, thinking critically and promoting learning and listening. Listening provided a learning process that encouraged teachers to learn from each other. Satisfied teachers became more proactive and more engaging, which led to increased efficiency and effectiveness in their teaching-learning

process. The teachers needed to adapt their online teaching methodologies quickly as the classroom instruction underwent a paradigm shift to a virtual learning environment.

Table-7. Support from administrators and colleagues.

Coded Teachers	Support from Administrators and Colleagues
T1	I can depend on my colleagues.
T2	Sometimes I feel stressed and talking with my colleagues helps me to relax. They give me suggestions what to do with my lesson plans.
T3	My headmistress encourages me with her kind words.
T4	It becomes easy to use the applications after my colleagues teach me. They support me.
T5	I meet my colleagues every morning and we talk about what happened yesterday and what we will do each day.
T6	I make sure I see my colleagues every day and ask how they are.

Table 7 illustrates responses from senior administrators and subject teachers on support from administrators and colleagues.

These statements showed that the school support group was the teachers' main support resource and that the manifested collegiality and support among the teachers were in professional, emotional, intellectual and social terms. The resultant conversations offered a purposeful interaction, and an authentic and engaging dialogue was necessary for those who had difficulties with online teaching-learning challenges. Providing support and talk stimulated reflection and brought effectiveness to the learning process in which the experienced teachers supported less experienced teachers. It was significant because it built a support system which helped the teachers in developing and focusing on their learning process. Having a positive attitude led to an encouraging, supportive work environment where the teachers felt comfortable and could enrich their professional development among their peers. This influenced teacher practice, and led to progressing healthy relationships with colleagues, friends and family members.

Table-8. Parental Involvement.

Coded Teachers	Parental Involvement
T1	I give a take-home learning material to my students' parents. They come every Monday morning to collect and drop off the finished work on Thursday. The parents are committed to their children's education. They help their children to complete their homework. However, some parents do not collect the package and do not return complete work.
T2	A few students come online. During a Zoom session, my student's sibling disturbs and my student loses her concentration. There is no adult supervision. I email and also post materials and videos in Google Classroom. Very little work is returned and because of this reason, I provide a learning package so my students' parents will collect it, hoping my students will do their work. I think my students do not know how to use their computer and use the online applications. Where are their parents?
T3	I leave a message in WhatsApp informing parents to collect the learning pack but there is no news and they do not collect the pack. Sometimes parents collect a week later. My students come online but their attendance is not consistent. My students inform that they have slow connection and inadequate internet quotas during their online classes. Some students share their computer with their siblings so this affects the scheduled time and when they submit work.
T4	Some students come online late. I ask them to give me a reason. They say they oversleep. An addition information is they watch television late into the night, have not done their homework and their breakfast is not ready when they come online.
T5	My students submit their work late because they wait for their parents to come home and use their mobile phones. The parents help but there are times the parents cannot help due to lack of understanding of the work.
T6	Some parents call the office and complain about the school is not helping with their children's education. They ask for the teachers to come to their houses and provide tuitions. Some parents do not collect the learning package weekly; some parents complained that they do not have access to the internet as they do not register for a Wi Fi at home and their mobile phones cannot use by their children as they need their mobile phones for work. Some parents have a PC at home but no connection to the internet.

Table 8 shows the opinions of teachers regarding parental involvement.

The teachers' statements showed mixed results – parental involvement showed full and less support towards their children's learning. Some reasons were that students did not have access to technology and internet connection; students came from low-resource backgrounds; students had poor time management skills, digital skills and internet literacy; parents had limited education; parents academically engaged less with their children; parents found difficulty with the subject matter when trying to assist their children; and negative contextual cues were identified, such as a student's sibling was disturbing the student's concentration, a student was inattentive and was watching something in the background, a student did not have his breakfast, and a student woke up late as he was not used to his scheduled online class. Parental involvement was essential because the support from them imparted guidance and motivation with meaningful impacts on their children's social development and academic success. However, not all parents involved themselves in their children's academic learning due to some hindrances.

6. Conclusion

It can be concluded that young students may not be fully responsible as regards participating in online learning even though they must take personal responsibility in their learning. The role of parents at home is crucial because they influence their children's learning and development; thus, home-based learning during the 13-week suspension became a critical period for all concerned parents, students and teachers.

Teachers' level of preparedness for online pedagogy is diverse. The rationale for increasing teachers' competence in using technologies is that academic satisfaction directly affects the confidence level in the transition process, and the confidence level challenges teachers in applying, analysing, evaluating, and creating new ways of teaching-learning. Continuing professional development is essential for professional (and personal) growth because teachers need to be engaged in and committed to their learning progression to keep their skills and knowledge current in managing educational change and innovation.

During the suspension, delivering online content and knowledge was one main lesson objective; the pandemic proved that change is possible, and it is apparent that a readjustment to our educational curriculum is needed so that students can improve their digital skills, which become digital capabilities through activities and practice. The teachers' roles in using ICT tools are essential, and they assimilate their pedagogical uses of information communication technology.

After the suspension, we need to scrutinise how differential digital media is used, how different behaviour alters and influences digital inequalities, how student and teacher readiness is prepared as regards blended learning, and how student assessment is evaluated through blended learning suites. There are patterns of increasing and decreasing uptake, and they are related to socio-demographic variables, access to technology, digital skills, student engagement and student academic attainment.

People with low-resource backgrounds, low digital skills and internet access insecurity are disadvantaged as they fail to take up technological communication, and immediate areas of concern need action and further research. Through cooperation with societal stakeholders and the government, we need to address these existing inequalities as the disparities are becoming more important, while we face continuing problems, which will lead to greater inequality of opportunity.

7. Recommendations and Suggestions

It is recommended that schools are encouraged to adopt formative assessment, which focuses on procedural learning, during the pandemic. Rather than taking a summative view of an end-of-year examination, students should be encouraged to learn progressively. There should be a continuity in strengthening quality educational resources to conduct virtual educational activities, and the resources include web and broadcast technologies. Pre-service teachers should be encouraged to do their teaching practice partially in an online learning environment. This is to bridge academic preparation and practice; it also familiarises the teachers with using technology tools to support their future pedagogical activities. In contrast, in-service teachers are encouraged to attend continuing professional development programmes regularly. This is to improve their internet literacy skills and to adopt a more comprehensive educational philosophy. School leaders should undergo crisis management programmes and learn technological leadership skills, because skills and knowledge learned have become indispensable during the pandemic. All teacher training institutions should merge lessons about online learning into their curriculum with the aim that future educators are knowledgeable about how online learning fits into the curriculum. These are necessary to consider what to do in another pandemic.

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