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Impediments and Enablers to Implement Digital Learning: A Focus Group Discussion of Malaysian School Educational Technology Leaders in The Wake of Covid-19

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Abstract

It appears that digital learning will serve as the primary vehicle for education given the rapid increase of technology in this digital era. However, despite numerous national plans made, school educational technology leaders still had to deal with many challenges. In the wake of Covid-19, impediments and enablers of digital learning seemed to accrue. Hence, this study attempts to identify the latest impediments and enablers in implementing digital learning. Focus group discussion (FGD) was conducted by using purposive sampling, where seven (7) school educational technology leaders who had teaching experience of more than ten (10) years and led digital learning in their schools were selected. Results of the discussion were then analysed using Atlas.ti. The content analysis of the focus group yielded seven (7) major themes of impediments, which were accessibility issues, time management, digital learning as a new norm, teachers' roles and skills, parental involvement, school administrations, and physical, emotional and mental health of the teachers, students, and parents. Meanwhile, for the digital learning enablers, four (4) major themes were identified, which were accessibility, empathetic learning, leadership, and the learning culture. This study draws implications for the digital learning guidelines or frameworks for the school educational technology leaders in planning any digital learning program which are more appropriate for K12 education.

Keywords: Covid-19, Digital Learning, Enablers, Impediments, Educational Technology Leaders

Introduction

According to the US Office of Educational Technology (2020), the definition of digital learning is "any instructional practice that effectively uses technology to strengthen a student's learning experience and encompasses a wide spectrum of tools and practices." However, a clear conceptual definition should be created since several of the terms like 'mobile learning', 'online learning', 'synchronous learning' and many more were depicted differently and carried very specific implications (Basak et al., 2018).

Thus, in the context of the current situation of Malaysia K12 education, 'digital learning' is taken as an encompassing term derived from 'blended learning' which according to Staker

and Horn (2012), it means “any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path, and/or pace” (p. 3).

Students in lower education now frequently use digital learning, which was formerly only intended for higher education (Haynes and Shelton, 2018; Shin et al., 2019; Smith, 2016; UNESCO, 2018a). As a result, this poses a significant issue for many school administrators and teachers, who find it difficult to keep up with the quickly changing trends and standards (Cavanagh, 2015; Smith, 2016). Although there have been many studies on integrating ICT into the classroom, most of them have focused on higher education, and little has been done in the way of digital learning at the lower levels of school. Besides, the rapid expansion of the digital world and the Covid-19 pandemic could alter this situation. The number of digital materials available for conducting classes has shaped how technology is integrated into primary and secondary schools, thus, creating new difficulties. For instance, web conferencing tools like Google Meet, Zoom, and Skype, which are seldom ever utilised by lower education students, were made available to teachers and students but opened up to issues like accessibility and more. Nevertheless, the adoption of digital technology, which had previously been voluntary but now become mandatory due to the Covid-19 outbreak, drove teachers and students to adopt it.

Hence, the permeation of digital technologies into the lower education level needs better planning and preparation. National strategies like the School Transformation Program 2025 (TS25) which aimed to transform school leaders, teachers, and students to be more competitive in this digital era and the National Education Blueprint 2017–2025 where leveraging the technology was positioned as one of the shifts, depicted the serious commitment from the government, but these strategies did not deny the truth that the path of digital learning in Malaysian schools was still arduous.

Consequently, the purpose of this study is to identify the latest impediments and enablers that emerged with the adoption of digital technologies in K12 education in Malaysia, especially after the Covid-19 pandemic when the whole nation has had a taste of fully online learning during the school closure.

Literature Review

ICT Infrastructure

According to prior studies, schools, teachers, and students confront numerous hurdles when integrating technology into the classroom. Infrastructure is the issue that Malaysian studies mentioned most frequently. Many studies have emphasised the significance of having well-equipped ICT tools and facilities in producing the desired 21st-century learning environment in Malaysia (Ahmad et al., 2020; Ghavifekr et al., 2016; Ghavifekr and Yulin, 2021; James Berok and Md Yunus, 2019; Ramli and Saleh, 2019). The availability of the ICT infrastructure has a direct influence on the adoption of technology. For example, a study by James Berok and Md Yunus (2019) revealed that teachers in a rural area in Tawau did not fully utilise technology in the classroom due to limited ICT access. Meanwhile, Ahmad et al (2020) discovered that although 65.4% of the 156 accounting teachers in Perak, Kedah, and Selangor felt that FrogVLE produced an interesting learning environment, 34.6% of them had never utilised it in their teaching due to the infrastructure at the schools did not support the use of the applications. Apart from that, a quantitative study conducted by Vien et al (2019) on Chinese Independent High School (CIHS) in Malaysia showed similar results in which an unstable internet connection became the major challenge when using ICT in the learning process.

Research conducted after the Covid-19 pandemic on digital learning continued to note the lacking of ICT infrastructure to be among the impediments to its implementation. Rahman et al (2021) asserted that the usage of personal digital devices like laptops and mobile phones was needed for online learning which had become a household problem for the parents to prepare these digital devices for their children. It seems that the responsibility to provide a complete ICT infrastructure for the learning, held by the government and schools before had become the burden of the parents. Nevertheless, a study by Mokhtar et al. (2021) discussed the resolution proposed by the MOE in ensuring the continuity of teaching and learning during Covid-19, in which teachers were instructed to use online platforms provided like DELIMA (Digital Educational Learning Initiatives Malaysia) and also WhatsApp or Telegram for the homework submission did not consider the limitations faced by both teachers and students on their access to the digital devices and internet connection.

School Organisational Issues

Many studies have proven that school leaders can influence the adoption of digital-integrated practices in the classrooms. The digital evolution requires school leaders to take proactive actions in providing space for technology to grow within the school context. A study by Omar et al (2019) on 376 secondary school teachers in Kedah showed that there is a strong positive relationship between principals' technology leadership and teachers' mobile technology integration in teaching. The study used two instruments, namely the Principals Technology Leadership Assessment (PTLA) which is based on ISTE National Educational Standards for Administrators (NETS-A) and Unified Theory of Acceptance and Use of Technology (UTAUT2). The study also identified the dimensions of the principals' technology leadership which visionary leadership, systemic improvement and digital citizenship were the most significant. Correspondingly, a qualitative study using the interview technique on six headmasters of primary schools in Johor found that the role of technology leaders was not comprehensive and the effort in ICT development was conditional (Wong and Daud, 2017).

Understandably, more recent studies started to reveal the role of communication technology in digital leadership. As in Shenanigen's Seven Pillar of Digital Leadership for Education, communication, public relations, branding, student engagement, opportunity, professional growth, and re-envisioning learning spaces were positioned as the areas that could be improved or enhanced (<https://www.teachthought.com/the-future-of-learning/digital-leadership/>). A study by Yusof et al (2019) conducted on 352 school principals in Malaysia developed a digital leadership measurement model that consisted of two dimensions, which were communication (five constructs) and school climate (four constructs). The five constructs under communication were virtual meetings, virtual discussions, virtual information sharing, online file sharing, and virtual communication while the four constructs under school climate were virtual teaching and learning supervision, virtual monitoring of students' performance, virtual promotion of development and professionalism, and virtual promotion of school goals. It can be seen that the study was in line with Shenanigen's Seven Pillar of Digital Leadership for Education. Another recent study was conducted by Saraih et al (2021) and the findings showed that exemplar Malaysian school principals integrating social media as their contemporary public relations conduit which suggested that digital leadership had expanded to a different setting than years before.

Teachers' Roles & Skills

Research has found many schoolteachers do not possess sufficient digital skills to use in teaching. A study by Had and Rashid (2019) on Malaysian school teachers who taught English revealed that they were reluctant to use digital technology in class due to reasons like having no confidence and insufficient effective training and support that affected their digital skills. Meanwhile, Shafie et al. (2019) discussed the importance of teachers' TPACK (Technological Pedagogical Content Knowledge) in the teaching of 21st-century skills where not all teachers were well-trained to integrate technology and 21st-century skills. This is supported by Had and Rashid (2019) who concluded that teachers' reluctance in using ICT is the major barrier to technology integration in the classroom. Some showed enthusiasm but fell back to the traditional way during the implementation stage due to many factors. This was also proven by Yew Tee et al. (2018) who stated that teachers' practices in Malaysian classrooms seem to be against the growing knowledge society where they struggled using the pedagogy that cultivates more conducive learning.

On the contrary, many studies also found that teachers have high TPACK levels. Juwait and Siew (2022) found that the level of TPACK, commitment and motivation of 186 Physics teachers in Sabah who implemented online teaching and learning methods during Covid-19 was high. They also found that constructs like Commitment to School, Commitment to Teaching, and Commitment to Profession had a significant relationship and influence on the motivation to implement online teaching and learning. Othman et al. (2021) also notified that the study on 199 Chemistry matriculation lecturers showed that their level of practice and competency in e-learning was high after the Covid-19 pandemic.

Curriculum & Assessment

According to UNESCO (2018b), policy reforms should involve digital technology in the curriculum. Digital integration should be balanced between curricula that acquire factual knowledge with learning to use digital tools to seek information, solve problems and communicate ideas effectively. Burns and Gottschalk (2020) in an OECD report emphasised on giving supports for the teachers in building a modern classroom, including the curriculum reform and extension. The updated national curriculum can be the key resource to improve the digital use in the classroom, foster the digital skills and the health of the students as well. In Malaysia, the introduction of Classroom-Based Assessment (Pentaksiran Bilik Darjah, PBD) in 2017 required teachers to have high understanding of the curriculum, pedagogy, and assessment Saiful Abrar Zabidi and Hafizhah Zulkifli, (2021). However, many issues emerged. A study by Mohamad Hanapi et al. (2020) on schools revealed that teachers' readiness level was at a high level for knowledge, but moderate for skills and attitudes.

During Covid-19, schools opted for digital assessment which one of the digital assessment tools used during the Covid-19 was the E-portfolio. Fazlina et al. (2022) conducted a study to identify the teachers' knowledge, perceptions, and software recommendations on the use of E-portfolio and found out that the teachers' knowledge and perception were at a high level. Meanwhile, the software recommendations for using E-portfolio were moderately high. This indicated a positive response towards digital assessment tools in assessing students in the classrooms.

Physical, Emotional & Mental Health

Numerous studies have been done on the stress experienced by Malaysian teachers, which has affected their ability to teach and worsened their physical, emotional, and mental health.

A study by stated that techno-stress has become a critical issue among school teachers in Malaysia, especially among teachers who had low digital literacy. This study that was carried out at six schools in Selangor involving 173 school teachers revealed that a certain amount of techno-stress can add to the level of teachers’ commitment like techno-uncertainty and techno-insecurity.

Interestingly, a study by M. F. Hassan et al. (2019) showed that primary school teachers could control the level of role stress by having the ability to manage role conflicts, role ambiguity, and role overload. It was further discussed how the school's top management should encourage the whole organisation to uphold teamwork and how work needed to be delegated wisely according to the teachers’ expertise to ensure job satisfaction.

There were concerns about the health of students with disabilities too when integrating technology into teaching and learning. Rahman et al. (2021) reported in their study that it was important for the Islamic studies teachers with the students with disabilities during the Covid-19 pandemic to identify in prior the technique to be used before going online. It was considered crucial as students with disabilities came with different capability levels.

Table 1
Summary of Literature Review

Key points	Sources
ICT Infrastructure	(Ahmad et al., 2020a; Ghavifekr et al., 2016; Ghavifekr & Yulin, 2021; James Berok & Md Yunus, 2019; Mokhtar et al., 2021; Rahman et al., 2021; Ramli & Saleh, 2019; Vien et al., 2019)
School Organisation	(Omar et al., 2019; Saraih et al., 2021b; Wong & Daud, 2017; Yusof et al., 2019)
Teachers’ Roles and Skills	(Had & Rashid, 2019; Juwait & Siew, 2022; Othman et al., 2021; Shafie et al., 2019; Yew Tee et al., 2018)
Curriculum & Assessment	(Burns & Gottschalk, 2020; Fazlina et al., 2022; Mohamad Hanapi et al., 2020; Saiful Abrar Zabidi & Hafizhah Zulkifli, 2021; UNESCO, 2018a)
Physical, Emotional & Mental Health	(M. F. Hassan et al., 2019; N. Hassan et al., 2019; Rahman et al., 2021)

Methodology

Participants

A total of 7 teachers who led the digital learning initiatives and programs from schools in Selangor and Perak participated in a 90-minute focus group. There were 1 male secondary school teacher, 5 female secondary school teachers and 1 pre-tertiary teacher. Ages ranged from 28 to 45 years old. All the participants had 10 years and above of teaching experience in secondary and pre-tertiary schools.

Table 2

Demographic of the participants

Participant	Gender		Years of Teaching Experiences	Position
A	Female	F	16 years	Head of Science Computer Unit in a matriculation college
B	Female		19 years	Teacher in a secondary school in Perak/Malaysian Teacher Youtuber
C	Female	F	16 years	Senior school assistant (Penolong Kanan) of a secondary school in Selangor who monitors the school's digital implementation
D	Female	F	13 years	Digital Learning coordinator in a secondary school in Selangor
E	Female	F	14 years	Program Coordinator for School Digital Program in a secondary school in Selangor
F	Female	M	15 years	Educational Technology Icon of Selangor/Digital Learning Coordinator in a school in Selangor
G	Male	F	13 years	Digital Learning coordinator in a secondary school in Selangor
*H (*withdrew from the discussion)	Female	F	14 years	Data & ICT teacher in a primary school in Kedah (Guru Data)

Sampling Procedure

The participants were chosen using a purposeful sampling strategy. Two criteria were set in selecting the participants, 1) having more than ten years of experience in teaching primary, secondary or pre-tertiary schools in Malaysia and 2) developed, coordinated, or led the schools in the digital learning initiatives and programs. (Krueger and Casey 2015) stated that five to eight participants were the optimum number for a non-commercial topic. A smaller group was preferred since it enabled each participant to provide more in-depth views. Fewer people should be hired when people had more knowledge of strong opinions about the subject (Hennink 2014; Mishra 2016; Nyumba et al., 2018). Since this study was intended to understand the experiences of digital learning leaders when implementing digital learning and also was conducted among teachers who had vast experiences in digital learning, having seven participants was considered a good number.

Materials and Procedure

Participants attended one session of a focus group. All the participants were contacted through emails on the details of the focus group, invitation letter, and permission letter from

the Universiti Teknologi MARA and the Bahagian Penyelidikan & Perancangan Dasar, Kementerian Pendidikan Malaysia. The focus group was conducted through Google Meet and the meeting link was given a day before the meeting. Both Bahasa Malaysia and English language were used interchangeably during the session. Semi-structured questions were prepared. The session was recorded by the researcher.

Data Analysis

The interview transcript was analysed using ATLAS.ti 9.0 software, conducting a thematic analysis to provide an in-depth analysis.

Results and Discussion

This study aimed to explore the school educational technology leaders' experiences, impediments and enablers in implementing digital learning. After analysing the interview transcript, the qualitative analysis revealed seven major themes for the impediments to implementing digital learning and four major themes for the enablers in executing digital learning.

Impediments in Implementing Digital Learning

Theme 1: Accessibility Issues

Among the challenges mentioned by the participants was the accessibility issues which mainly were 1) access to the internet, 2) access to technological device and 3) access to digital learning materials and platform. These problems mentioned have become one of the main reasons that halted digital learning execution.

- ***Access to internet***

"The biggest problem I faced is the internet connection. This is the main issue that the government needs to solve. I have been waiting for the Unifi to get to my housing areas for two years but to no avail. I do not know anymore which internet providers should I use to get a strong connection. Just imagine, 50mbps to be shared with 2900 students. Pity them!" (Mrs A)

- ***Access to the technological devices***

"One more thing that I noticed happened among teachers and students is the access to gadgets or computers. They are not enough, hence students' attendance cannot be 100%, and not even 90%." (Mrs C)

- ***Access to digital learning materials and platforms***

"GCR (Google Classroom), can be regarded as new. Instructions received were also inconsistent. This year, 2021, Form 1 students were having problems getting their ID earlier due to the transition from primary to secondary schools. They can only fully use the GCR in March (already late). This happened at the national level whereby everybody was waiting for the APDM updates." (Mrs D)

Theme 2: Time Management Issues

The adoption of totally online learning during Covid-19 presented a difficulty to the participants in this focus group in terms of time management, which was a frequent theme addressed by the participants. They claimed that issues with the schedule and the

inappropriate amount of time set aside for the classes had a big influence on the student's dedication to learning, observance of attendance requirements, and overall health.

- ***Clashes of timetable***

“As a teacher and a mother with many children, we have to arrange the time and they have to wait for their turns. All of them can't have online classes at the same time. What I can see now is most of the online classes are conducted in the morning. At the same time, I, as a teacher also have to conduct my online class. So, my kids have to take turns. The rest have to wait and watch the Google Classroom recorded version later.” (Mrs C)

- ***Inappropriate time allocation***

“As we can see nowadays, even kinder garden children do online learning for hours. This also happened to primary school students, not forgetting the religious school KAFA...for me whose child is special, I do concern about screen time. We should not give them gadgets for too long because it will interfere with their senses. That is my opinion as a mother with a special needs child.” (Mrs F)

Theme 3: Digital Learning as New Norms

The implementation of the new learning process as the new norms was the third difficulty that the participants highlighted. They went into detail on the adoption of digital learning that they saw in their schools, which had an influence on the instructors, students, and parents, particularly during the Covid pandemic when the schools chose for online learning.

- ***Adoption difficulties among the students.***

“There were those who could not accept the changes, so during the pandemic, they quit the learning. They did not come to school, like in matriculation college, I have student who lives in Mukah, and she did not attend my Google Meet class at all.” (Mrs A)

- ***Digital incompetency among the students.***

“A lot of students did not know how to use ‘live chat’, ‘Google Meet’, so I had to spend some time to teach them.” (Miss B)

- ***Familiarising with the new teaching applications***

“Before, using Google Meet in the teaching is almost impossible, unlike applications like Kahoot! dan Quizziz.” (Mrs A)

Theme 4: Teachers' Roles and Skills

Some participants also commented on how the roles of teachers changing in this digital transformation process whereby mastering ICT skills seemed to be mandatory.

- ***Diversity in the teachers' roles and skills***

“Now, teachers' roles are not just teaching the content, but need to be a motivator as well. I have to give positive feedback to motivate the students.” (Miss B)

- **Digital competencies among teachers**

“Now teachers are not just to be good at content knowledge, but we have to be good at IT as well. Also, as language teachers, we have to be good with the new terms of technology. So, it is challenging I must say and I salute all the teachers out there.”
(Miss B)

Theme 5: Parental Involvement

Another common issue raised by the participants was the involvement of parents in their children’s learning process. They opined parents should involve in the learning process too by giving support to students and teachers.

- **Understanding from the parents**

“Parents need to play their roles too. Do not blame schools. Do not tell off teachers that they do nothing. Parents need to understand the situation faced by the teachers. They do not have to make unnecessary issues viral. So, I think everybody needs to work hand in hand together.” (Mrs A)

- **Parents’ initiative**

“The DELIMA portal is complete for parents and students. They can find lots of things to learn. It’s all on your initiative. Like me, I teach my kids how to use Gc correctly and I noticed my kids can master it pretty fast.” (Mrs D)

Theme 6: School Administrations

All the participants agreed that school administrators impacted the digital learning implementation process, in both positive and negative ways. They mentioned the characteristics of school leaders that could halter or help in the digital learning implementation process. For example, some school leaders were described as ‘too rigid and pushy’ and had trust issues with the teachers.

- **Too rigid and pushy**

“My school administrator is fine, but for other schools, administrators are too pushy. All the teachers are made compulsory to do online classes, no matter what. Like my school, we are given flexibility. If the teachers could not follow the timetable given, we still can change it. Meaning to say, administrators could not be too rigid.” (Mrs G)

- **Lack of trusts**

“Some matriculation colleges that I know make it compulsory for the teachers to invite their Head of Unit into the Google Meet, that is terrible!” (Mrs A)

Theme 7: Physical, Emotional and Mental Health of Students, Teachers and Parents

Another issue raised by the participants was a lack of empathy in the digital learning execution has an impact on the physical, emotional, and mental health of the students, teachers, and parents.

- **Lack of empathy**

“We can see how packed it is the learning timetable for the primary school children. For example, English subject is given direct four hours, from 8 am to 1 pm. This gives

pressure on the parents and the students. Supposedly, when we do online learning, the learning process should be more flexible.” (Mrs F)

- **No consideration of special needs students.**

“As a parent with special needs kid, with autism, and has to do online therapy (it is difficult). For special need kid who learns kinesthetically, online learning is strenuous for them. How could we instruct a hyper kid to sit quietly in front of the computer, and one hour to boot? So, yes, it is an arduous task for the parents and the teachers too. Even the teachers said “I have to prepare extra” because they need to make students remain interested and seated in front of the computer.” (Mrs F)

The enablers in implementing digital learning

Theme 1: Accessibility Needs

With the concerns mentioned earlier, the participants again stated that to have a successful digital learning implementation, accessibility issues should be tackled urgently. Two main accessibility issues discussed were access to the internet and access to a digital device.

- **Good access to the internet**

“For me, the most important thing is the internet connection. The biggest problem in matriculation college is the internet. This is the main issue that the government needs to solve.” (Mrs A)

- **Access to own good quality digital device**

“During the Covid-19 pandemic, the government introduced the policy of free mobile phones to students of the B40 group. However, I think this policy should be extended to M40 with many kids. All children need their gadgets. On the government's part, they should provide a better quality of gadgets. This is because the applications need a bigger storage capacity. Even for the laptops, those with Celeron, when conducting Google Meet, they tend to lag. This brings many problems.” (Mr E)

- **Access for the teachers to get good digital learning materials**

“Teachers in Malaysia need to be hardworking and creative in searching the access for themselves and the students (cannot depend on KPM). For example, if you are an employee of a private company, you are provided with laptops and internet/phone allowances. However, teachers do not get all these. We have to find our own access.” (Mrs G)

Theme 2: Empathetic Learning

Participants also stressed on how learning should be conducted empathetically by identifying the challenges faced by the students physically, emotionally, and mentally. It was mentioned that students and teachers should be supported accordingly in terms of time allocation, flexibility and learning schedules.

- **Acknowledges the challenges**

“We should not treat online learning same with the learning physically at the school. We should think of children’s emotional being with the surroundings. Like the children

of kindergarden, primary school and even religious school program, we should be aware of how much time they should be online.” (Mrs F)

- **Support the special needs children**

“.....for me whose child is a special need child, I really concern on their screen time. We cannot give them gadget for too long because it can disturb their sensory.” (Mrs F)

- **Ensuring inclusivity in the teaching**

“There are parents who contacted me to inform that their children could not join the Google Meet on that day due to overlapped timetable with the other siblings. So, what I did was to send the lesson-of-the-day personally to the students in form of worksheets or slides. We will try to help all the students who came to us to tell their problems.” (Mrs C)

Theme 3: Leadership

From the discussion, school leaders are regarded as the important figures in ensuring a conducive environment for digital leaning implementation. There were some characteristics of good leaders mentioned by the participants like ‘supportive’, ‘easy’, ‘not forcing’, ‘flexible’, ‘visionary’, ‘not rigid’ and ‘having trusts in teachers.

- **Visionary**

“Yes, school principals definitely need to have their own vision in implementing digital learning. First is the school principal, then teachers will be the implementing agents.” (Mr E)

- **Flexible**

“Administrators should not be too rigid.” (Mrs G)

- **Supportive & Trustful**

“Administrators should be supportive and have trust in teachers.” (Miss A)

Theme 4: Learning Culture

Another needs and recommendations mentioned in this discussion was on the learning culture that should be inculcated to enable digital learning implementation.

- **Be updated with the current interests of the student**

“In 2018, we found a weakness with Facebook. Why? Students nowadays are not interested in using Facebook anymore. They are more into Instagram. This new generation are not keen on using Facebook, so we move to Instagram Live.” (Mr E)

- **Be committed**
“It wouldn’t work if only the students are so motivated to learn, but teachers are not providing the platform for them to join.” (Mrs C)
- **Be supportive**
“I can conclude that ‘buddy-support-system is very important for the teachers to support each other.” (Mrs B)
- **Be proactive**
“These are our own initiatives. If it involves programs which the international partners come to Malaysia, then we will ask for the administration’s permission and will go through the Ministry of Education. But if do online activities like Skype session with schools from Lebanon, Doha, Vietnam..we didn’t ask.” (Mrs G)

Table 3

Summary of Impediments and Enablers in Implementing Digital Learning

THEMES		SUB-THEMES	
IMPEDIMENTS	Theme 1: Accessibility	<ul style="list-style-type: none"> • Access to internet • Access to internet • Access to the technological devices • Access to digital learning materials and platforms 	
	Theme 2: Time Management	<ul style="list-style-type: none"> • Clashes of timetable • Inappropriate time allocation 	
	Theme 3: Digital Learning as a Norm	<ul style="list-style-type: none"> • Adoption difficulties among the students • Digital incompetence among the students • Familiarising with the new teaching applications 	
	Theme 4: Teachers’ Roles & Skills	<ul style="list-style-type: none"> • Diversity in the teachers’ roles and skills • Digital competencies of the teachers 	
	Theme 5: Parental Involvement	<ul style="list-style-type: none"> • Understanding from the parents • Parents’ own initiative 	
	Theme 6: School Administrators	<ul style="list-style-type: none"> • Too rigid and pushy • Lack of trusts 	
	Theme 7: Physical, Emotional & Mental Health	<ul style="list-style-type: none"> • Lack of empathy • No consideration on special needs students 	
ENABLERS	Theme1: Accessibility Needs	<ul style="list-style-type: none"> • Good access to internet • Access to own good quality of digital device • Access for the teachers to get good digital learning materials 	
	Theme 2: Empathetic Learning	<ul style="list-style-type: none"> • Acknowledges the challenges 	

	<ul style="list-style-type: none"> • Supports the special needs children • Ensuring inclusivity in the teaching
Theme 3: Leadership	<ul style="list-style-type: none"> • Visionary • Flexible • Supportive and trustful
Theme 4: Learning Culture	<ul style="list-style-type: none"> • Be updated with the current interests of the students • Be committed • Be supportive • Be proactive

Conclusions

The results from the study shed some insights on the impediments and enablers in implementing digital learning at the lower education context, especially in the wake of Covid-19. The study found that a lot of long-standing obstacles, including accessibility challenges, teachers' digital competency, school administrations, and leadership, were to blame for impeding the adoption of digital learning. The issues with internet connections, limited access to digital devices, and limited access to digital learning resources and platforms have not yet been resolved for teachers and students. The study did, however, also show that the criteria for impediments and enablers to implement digital learning were in fact shifting. With the rapidly evolving technology and the Covid-19 pandemic, several new requirements evolved, such as the necessity of "parental involvement" and the acceptance of "digital learning as the norm." Additionally, it was mandated that teachers play a wider variety of roles and that learning activities be carried out with greater empathy, with a focus on the physical, emotional, and mental health of both teachers and students.

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