

Readiness and Challenges in Implementing Digital Learning

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Abstract

This paper presents a comprehensive literature review related to Malaysian primary school teachers' readiness and challenges in implementing digital learning. Digital learning is a practice of teaching that integrates technology to create meaning learning experiences among students. This paper explores the current state of research in this area and identifies research gaps for future investigations. The literature highlights some deep and significant understanding of challenges faced by the teachers in digital learning. The findings suggest that more studies should be done to investigate the predicaments and problems that the teachers faced analysed thematically in applying digital learning. Further research is needed to provide insights for future research and education policy development. Overall, this paper serves as a foundation for future studies and strategies to enhance the implementation of digital learning among primary teachers in Malaysia.

Keywords: Digital Learning, Teacher Readiness, Challenges, Primary School,

Introduction

While managing this dynamic change, the education sector adapts periodically to enhance the knowledge of students and skills to meet the demands of the 21st century globalization. Upgrading and improving the quality of education is largely made to ensure the Malaysian Ministry of Education is trying its best to make the education level of the country equal to global education. Efforts to standardize these aspects in education management include the delivery methods, quality of the curriculum, time, and management of the curriculum according to the principles of the National Philosophy of Education. The initiative that was put in place proactively, focusing on the infusion of digital elements into the teaching and learning process, was to implement the Digital Education Policy (DPD) by the Malaysian Ministry of Education. The DPD itself also brought about the ambition of MOE to provide and deliver quality education at the global level to all Malaysian educators.

The current rate of development contributes to the efficiency and systematisation of teaching and learning processes, which is another crucial element in an individual's success. This was also supported by Azliza Yacob (2023), who states that three vital points must be focused on in education in Malaysia that, first, is by restoring the state education system after Covid-19,

second is in enriching digital learning, and third by improving the training of faculty. Digital learning can provide new opportunities in the field of work because of the availability of accuracy at a high speed upon searching for information onto students. Besides, digital learning has a way of ensuring that the potential, skills, experience, and student motivation in the field of education are enhanced. This fact was also supported by Noradilah Aziz and Lai Wei Sieng (2019), that digital learning is significant to make sure that the academic achievement is successful at the same time being a significant and effective contributor to scientific exploration.

Shehzadi (2020), also underlined that digital learning in teaching and learning does not just connect traditional ways to digital screens, but it possesses the capability to utilize both educators and students towards learning styles, in which science is optimally dispersed, self-motivation is improved, flexibility of learning time is increased, and where global experts are driven towards RI 4.0. As Putri & Muzakki (2019), assert, the Industrial Revolution 4.0 has highly affected human lives, particularly in all fields of life, with its effects on learning styles between the educators and the students.

Technology is this element that moves the future, what turns it into innovation and no less, quality. It is the basis for a new model in digital based education. Graham Brown, in an article by Brown (2018), assumes that the world's educational system is going to be changed thoroughly due to the revolution of R&I 4.0 in which children of this age learn for those jobs that still do not exist today. Broadly speaking, RI 4.0 becomes a window to the emergence of a wide range of new technologies based on digitization: implementation, technology automation, simulation, system integration, use of robots, and many others. The development of this digital system drives ready education all over the world toward change, not being left behind amid the current tidal wave of modernity. That implementation of digital teaching and learning is not an easy, with the existence of studies on level of readiness, and challenges faced by the teachers as well as the students, will give the beholders a strategy to implement intervention and initiative cases related to addressing the matter.

Literature Review

Digital Learning

Digital learning can be defined as the practice of teaching that includes technology to help create learning experiences via which the students can gain the process in a meaningful and relevant manner. Digital learning can apply technological innovation to education to generate the future's newest vision of the learning of trends in skills and knowledge. Digital learning is a newfangled means through which one can efficiently transmit knowledge in the process of learning at any time or any place.

Mohamed Nazul (2020), described comprehensively that digital learning is one of the reforms in the development of education in Malaysia capable of lifting nations in the world, thus affecting the educational institutions in the state. It can be realized with the emergence of ICT elements that develop the national education system with an emphasis on the mastery of content and knowledge independently or with a guide through adequate, global quality standards according to the current educational flow also supported by the opinion of Maimun Aqsha Lubis et al (2021), and Nor Aziah & Mohd Taufik (2016), whom emphasizes that digital education promotes education that is based on digital technology.

The concept of digital learning involves three key elements: use of technology, the element of time be it synchronous or asynchrony and engagement with interaction techniques and physical engagement. Law (2021), also argues that the technology knowledge of an academic can be an added advantage in teaching as it can process the content of a particular topic into something that is more understandable and hence easier for assimilation by the learners. This not only helps to build knowledge among students but also nurtures high-level thinking skills in them, making teaching more student-centred, which means that the teacher only acts as a facilitator. The adoption of technology would not, in and of itself, be adequate to achieve the learning goals; rather, the knowledge gained through technology and in applying technology to teaching methods implemented would be in alignment.

Teacher Readiness in implementation of Digital Learning

Teacher readiness on the technical, pedagogical, and attitudinal sides highly influences the implementation of digital learning. According to Nor et al (2019), if the readiness of teachers was not balanced, basic aspirations of education digitization failed to be achieved and failed to give meaning to teachers.

Many independent studies look at assessing the implementation of digital learning concerning the effectiveness of its implement ability into the whole teaching and learning process. The trend from freelance studies shows that the failure of implementing holistic technology-based teaching is caused mainly by the non-availability of teachers to integrate digital skills into learning. This view is also shared by Anuar Ahmad (2020), that the teaching and learning process in Malaysia did not put much emphasis on digitization methods till the year 2019 with the emergence of Covid-19. Hafiza Abas (2020), also supported the argument, stating digital learning showed a slow development in the country, Malaysia, due to technical factors, the inability to process appropriate teaching content, as well as the lack of availability and the lack of awareness of educational citizens about the importance of the integration of technology and teaching of the 21st century relevant to economic marketing. The view is supported by a study conducted by Mahathir Yahya and Wardatu Hayat Adnan (2021), which outlined details on the technical aspect, content, and skills as a barrier in developing implementation to digital learning in Malaysia comprehensively.

A freelance study by Kimmons et al. in 2020 and research by Siti Nurbaizura & Nurfaradilla in 2020 found that the difficulty in reconciling digital elements in executing teaching and learning made its readiness on the technical aspect of the teacher at a stage perceived as less satisfactory. Teachers are struggling with using digital devices and the internet creatively and efficiently in conducting digital learning. Cheung (2021), also noted that many teachers are far behind in skill development for using technology and networking the internet well. Teachers easily feel depressed and challenged when using devices and other occupational networks to search accurately and effectively for information, causing a waste of time in teaching. All these factors mention the direct and indirect reflection of teachers' motivation in integrating the digital element in their teaching activity. It is also one of the reasons that have made most teachers currently prefer traditional teaching methods to methods of digital education. Objective intuitive teaching planning, attractive teaching strategies and activities, as well as evaluation and measurement activities in line with the outline objectives are some of the pedagogies applied in the delivery of digital learning.

If it is computer-based learning, all of this must be done online. (Martin et al., 2019). The need to design materials that would cope with the teaching aims and tasks, developments in teaching, and focusing on the components of interaction and interactivity between teachers and students in the digital learning environment, put the preparation of the teacher into a test of pedagogical preparedness. (Awang et al., 2020). This indirectly embodies the unwillingness attitude towards offering support or acceptance in terms of accepting the element of digitalization in teaching among teachers who find it difficult to change the current learning paradigm. David (2022), argues further that this process is time –consuming not only in the academic but also personal perspective, having to carefully plan alongside the existence of additional constraints of the management aspect of teaching. (Scherer et al.,2019). In the positive success of the digital application in learning, however, the proper attitude on the part of the teacher remains a vital aspect. Chew Le Yee & Suziyani Mohamed, 2021, conducted a study that had the output of being the right reason for the preschool teachers to have their reactions toward the application of digital learning in the classrooms.

The above finding is also evident in his study, which is that of Izhar et al (2021), stated that there are still some teachers who are uninterested in implementing online learning, which further directly affects the implementation of digital learning. But there is also a contradiction in that when it states that Mulenga and Marban (2020), argue that the score of the attitude aspect among teachers is the highest in the implementation of digital-based learning. What is more, being able to change attitudes if so that it fits with digital learning will be time-consuming, and certainly efforts will have to be taken to change the teacher response (Hasin et al.,2022). A brief overview of the challenges experienced by teachers in the implementation of digital learning will provide support for the provision, training, and skills needed for teachers to contain these emerging issues.

Challenges of Teachers in Implementation of Digital Learning

Change in educational practices in our country since the onset of Covid-19 has vast implications for teachers and students to prepare themselves in a short period of time. Enough initiatives have been taken by the government and its holders in facilitating the adaptation process towards digital learning practices to continue achieving the aspiration of the government in transforming the educational sector towards digitalization that is congruent to that of the 21st century. The issues are multifarious and confront teachers and students in various ways to adjust and engage themselves in the most suitable digital learning. This concept paper will show the different challenges teachers are facing based on a few themes reviewed through the literary study. The technological challenge is among the most faced by teachers in the implementation of digital learning.

The study conducted also pointed out that technical disruption and Internet access have become a major problem dealt with by teachers in the implementation of digital learning. Digital learning creates different learning experiences with both students and teachers, respectively; it has different impacts on each other. Among them, the digital facility provided by the school is still at a weak level. In effect, an extent of the study by Carver and Ph (2016), confirmed that the already digital devices in schools are in broken states and not properly ined reflecting the efforts and interest of teachers in implementing digital learning. Computer labs that do not have enough digital devices, as well as Internet access in schools that is unstable, makes the teachers powerless and hesitant to bump into the digital environment

and finally end up being more enthusiastic about traditional methods to control teaching. The negative environment caused by the pitfalls of technological convenience, such as a break in internet connection, accessing the device, deters one from being a successful implementer of digital learning and impacts a student's academic success.

This shows that internet stability, device usage and self-motivation towards learning are the underlying critical factors that can pave the way for students' readiness towards adopting a digital learning approach. It should be the goal of teachers to merge both acute and non-acute learning ways to solve the problem of technological challenges at the maximum quality of implemented digital learning. The next challenge is the organizational challenge.

One of the organizational challenges that have been realized from the implementation of digital learning is lack of skills and training by teachers. Teachers face difficulties in providing materials for students if they have limited knowledge regarding the use of technology during the teaching process. At the same time, teachers face difficulties in controlling a conducive online learning environment based on the needs of pupils. The Ahmad Rizal study also showed that teachers dislike using technologies in their teaching and dissemination because they did not have the science for searching for the data that is needed on the Internet. This will create a commotion in the teacher when he decides to revert again to the traditional methods of Chalk and Talk or the use of textbooks and reference books as basic teaching aids. These organizational challenges limit practice in digital learning by teachers. In research by Nilavani (2021), due to pressing tabs wrongly in toggling between the Google Slides app and Telegram Web, he almost had his students read his personal messages as per what was being displayed on the screen.

Moreover, professional development aspects and training are not well considered when digital learning is integrated into teachers work. Open-ended studies show that teachers receive lesser technical support and training, much compared to that accorded to schools on the process of integrating digitalization with education (Darchinie, & Md Yusoff, 2019). Revenue from studies done by Bozkurt (2016), also shows a lack of support on the side of administrators, within the act of practicing innovation and integration of technology while furthering education. According to Zakaria & Khalid, 2016 this can be achieved by exposing teachers to different types of training and technical assistance, thereby enhancing their motivation for carrying out digital learning, the instructional challenge can further be described as the level of quality regarding online materials of instruction, feedback on learning implementation and the existence of superiority interaction that is demonstrated as bilateral between the student and the teacher. (Azura et al., 2021). Studies have established that it becomes difficult for some teachers to use digital learning because they must identify and diversify appropriate ways of teaching using the digital applications and devices. The knowledge that is to be passed down should be made full of meaning to the student even when it does not involve the bilateral interaction as is the case in the conventional teaching. In this case, teachers must also be able to prepare teaching materials innovatively so that the resources provided do not only deliver a particular material of the teaching, but also attract the interests of the students to keep focusing, and consistently carry out the digital learning that is being implemented.

The last theme in addressing the constraints experienced by teachers in the implementation of digital learning is situation challenges. Situation challenges include time management, busy with other tasks, and an environment conducive to effective learning. Ugartini (2021) conducted a study on addressing constraints experienced by teachers in implementing digital learning. He found that the student background played a major role to success and effectiveness of a learning process. One of these challenging situations is the lack of support by parents, especially from the B40 group, in providing a conducive and safe environment or space for undergoing digital learning. That is, in addition to the above situation issues and being the first two in the list, insufficient time to undertake digital learning is the other major challenge.

Time is one of the most important elements in the implementation of successful teaching, and the dispensation of the teaching. As such, a good teacher ought to deliver the content of the teaching within the time frame given. However, in terms of implementation in digital learning, time becomes a great challenge for the teachers. Since the period stipulated in the timetable differs from the method of learning, which is characterized by being face-to-face. In addition to that, it was necessary to summarize the dispersion of the topic or focus of the lesson, according to the teachers, there was not time enough to carry out digital learning since the issue about internet and a less active engagement from the students. This was also agreed upon by Azwani & Piang (2022); and Rusdin (2019), that teachers often think about issues of time constraint: that is, time within the framework of the teaching and learning process and the time of teaching caught in-between other activities and settings.

In conclusion, teachers' readiness in the implementation of digital learning should prepare them for the challenges in implementing digital learning. This was further supported by Al Furaih & Al-Awidi (2020), in their demand that teachers need to pole up readiness in the implementation of digital learning since the influence of technology expands widely.

Past Related Studies

	Title	Authors	Year	Readiness	Challenges	Primary School	Data Analysis	Country
1	Implementation Of ICT and Challenges on The Aspect of Readiness among The Senior Teachers in The Classroom	Rubathey a/p Muniyandi, Norliza Bt Abdul Majid & Nurulhuda Bt Md Hassan	2023	/	/	/	Qualitative	Malaysia
2	The readiness and Support Stage for the Implementation of the Information and Communication Technology (ICT) Approach in Teaching and Learning among Primary School Teachers	Venessa Phang lywon & Nurfaradilla Mohd Nasri	2020	/		/	Quantitative	Malaysia
3	Teacher's View on online Learning through Home Based Learning approach (HBL) during the COVID-19 Pandemic period	Siti Nurbaizura Che Azizan & Nurfaradilla Mohamad Nasri	2020	/	/	/	Quantitative	Malaysia
4	Special Education Teachers' Perceptions of Online Teaching and Learning During the Covid-19 Pandemic	Nurliana Hassan Rosadah & Abd Majid	2021	/	/	/	Quantitative	Malaysia
5	The level of Knowledge and Constraint among Malay Language Teachers into Implementation Online Teaching and Learning Using Google	Ugartini Magesvaran	2021	/	/		Qualitative	Malaysia

	Meet Application							
6	Teachers Competency of E-Learning Technology Facing the Post-Pandemic Covid-19	Muhammad Azrin Abu Bakar & Nurfaradilla Mohamad Nasri	2021	/	/		Quantitative Qualitative Document Analysis	Malaysia
7	Knowledge, Skills and Attitudes of History Teachers in Using the Latest Digital Learning Applications	Yagneswary Sundran Mohd Mahzan Awang & Norasmah Othman	2024	/		/	Quantitative	Malaysia
8	Readiness and Knowledge towards Mobile Technology-Based Teaching and Learning among Sar Kafa Teachers in Enhancing Teacher Quality	Mohd Mokhtarishah bin Mohamed Mokhtar & Hasmadi bin Hassan	2024	/		/	Quantitative	Malaysia
9	Levels of Proficiency in the Use of Educational Technology Tools among Science and Mathematics Teachers in Secondary Schools: Pedagogical and Technical Aspects"	Tengku Farahnorfadhilah Engku Azman & Norah Md Noor	2023	/		/	Quantitative	Malaysia
10	Knowledge of Information and Communication Technology in Teaching and Learning of Malay Literature Teachers	Noor Syazwani Roni & Zamri Mahamod	2024	/			Quantitative	Malaysia
11	Google Classroom: What is the Level of	Mohd Afifi, B. S., Nivetha Kirushna, B.,	2022	/			Quantitative	Malaysia

	Preparedness Among Mathematics Teachers?	A.Rahim N.A.Afian & Akhbar, M						
12	Contrastive Analysis Technological Integration in Education: Challenges for Educators	Geoffrey F. C. Lim, Norshamshizar Abdul Jalil, Dayang Suraya Awang Hidup & Marlissa Omar	2024		/		Literature Review	Malaysia
13	Teacher Challenges in Online Teaching and Student Readiness Post Covid-19	Nik Md. Saiful Azizi bin Nik Abdullah, Rohani binti Ali, Nurul Nadiah binti Yahya, & Rabi'atul Athirah Muhammad Isa	2021		/		Qualitative Document Analysis	Malaysia
14	Teachers Readiness to Implement Digital Curriculum in Kuwaiti Schools	Hamed Al-Awidi & Fayiz Aldhafeeri	2017	/	/		Quantitative Qualitative	Kuwait
15	The Challenges of Teachers in Implementing Digital Learning through the Digital Learning Initiative Malaysia (DELIMA) Platform in Teaching and Facilitation	Zolhilmi Adnan & Hazrati Husnin	2024		/	/	Quantitative	Malaysia

The paper above for the study explained 15 research on the readiness as well as the challenges in digitalisation of education in the primary schools since 2017 through 2024. The research was based on a wide variety of people, eight of them which were teachers in the primary schools. The upcoming six papers above look into ample and the difficulties that the teachers are facing while other research only look in the one side of the study that being researched. In the above 15 studies, it is marked that nine of these have used a quantitative study while six used a qualitative method and a mixed method. In the above 15 studies, only one was conducted outside of Malaysia and the other 14 studies were conducted in the context of Malaysia. Here is a review of some of the selected studies articles.

Rubathey, Norliza & Nurulhuda (2023), cited from the studies, it is established that the level of teachers' readiness regarding the deployment of ICT in a class is an unready stage. This study is a qualitative type in understanding comprehensively the issues and problems faced by the teachers. This study moves by thematically, analysing the returns and linking them to the aspects of preparedness that are in the inside. This is its limitation to this study because

the total number of teachers involved is only 10. Therefore, a larger sample will be able to give an insight on strong and elaborated understanding of the readiness and problems faced by teachers on executing digital methods in learning.

A second study has been done by Azrin & Nurfaradilla (2021), to determine how competent teachers are to implement post-pandemic Covid-19 teaching. The study looked at the issues and challenges that teachers experience in the implementation of e-learning basically from gender level of readiness and location of the school. Revenues of the study showed that the school location affects the teacher's competence in implementing an e-Learning and that in general, the teacher feels motivated when problems and challenges can be solved. Research should be done on the influence of teacher readiness toward implementing e-teaching to elaborate further the dimensions of the challenge. The research conducted by Magesvaran (2021), also discussed the level of teacher knowledge and obstacles encountered during the use of one of the applications in digital learning. Eleven teachers were interviewed with the aim of identifying the level of knowledge and challenges of teachers when implementing digital learning.

From the interview, the level of knowledge of the teacher is high, while the challenges faced by the teacher related to attitude and cooperation on the part of the pupils and parents. This is amiss in the study, since the various methods in digital learning need to be studied more comprehensively, where a large number of samples, capable of representing the teacher population in general, would be considered. Based on the above studies, the study package covers the larger number of samples that are needed. Furthermore, the predicaments and problems that the teachers faced in applying digital learning were poorly researched upon; it should be analysed thematically so that more comprehensive and detailed solutions can be taken from the bettors. An in-depth understanding of readiness clearly involves facets of teachers such as technology, skills, pedagogy, attitudes, and lifestyles. Through the study of these, these aspects can provide a clear understanding using a larger number of samples so that effective implementation of digital learning can be done.

Conclusion

In conclusion, this study covers the literature on the notion of digital learning, teacher preparation in terms of technical, pedagogical, and attitudinal factors, and the problems that instructors experience while adopting digital learning. According to the findings, there is a need for more studies on primary school teachers with larger samples. A mixed-methods design is also crucial in understanding the challenges teachers face in using digital learning. Teachers' readiness should also be further researched based on factors found through the literature review so that relevant skill training can be provided to build their capacity and knowledge in using the best digital learning practices. The concept of teacher preparedness and challenges facing teachers is discussed in this paper.

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