A Preliminary Study: Exploring Teachers' Perspectives on the Role of Gathering Information in Supporting Teachers' Digital Learning Agility

Kamilah ABDULLAH[a], Mas Nida MD KHAMBARI[a*], Nur Dania MOHD ROSLI[a], Su Luan WONG[a], Noor Syamilah ZAKARIA[a], Siti Raba'ah HAMZAH[a], Priscilla MOSES[b]
[a] , *Universiti Putra Malaysia, Malaysia*
[b], *Universiti Tunku Abdul Rahman, Malaysia*
*khamasnida@upm.edu.my

Abstract: Gathering information is essential to enhancing teachers' digital learning agility. By gathering data, teachers can stay abreast of the latest digital technologies and tools, acquire new skills, and improve their teaching practices. This preliminary study explores the role of gathering information in supporting teachers' digital learning agility. The preliminary study employed a qualitative research approach, using semi-structured interviews to collect data from three teachers. The findings reveal that teachers gather information related to student learning and digital technologies to improve their teaching practices and support their students' digital learning. The study highlights the importance of information gathering in enhancing teachers' digital learning agility and provides insights for the development of policies and initiatives aimed at facilitating the improvement of teachers' digital learning agility.

Keywords: teachers, gathering information, digital learning agility, educational technology

1. Introduction

In today's digital environment, teachers must have digital learning agility to swiftly and effectively acquire new digital tools and technologies. Chrismastianto and Wibawanta (2023) claim that many teachers lack the knowledge and resources to use digital technology to teach and learn. Getting information is crucial to improving teachers' digital learning skills. Teachers may develop new skills, keep up with modern tools, and enhance their teaching through gathering information (Van Petegem et al., 2021).

The literature highlights organisational learning as a major consequence of digitalisation (Kuusisto, 2017). This means that organisations, including schools, must constantly adopt new digital tools and technology to stay competitive. Teachers are key to this process as they deploy digital technology and classroom aids. Teachers must gather data to keep current on digital technologies and tools and help their businesses adapt to digitalization.

Additionally, teachers must learn about digital technologies and tools and create digital literacy (Hanan et al., 2022). This encompasses digital information access, evaluation, and organisation. By enhancing their digital literacy, teachers may assist pupils master digital skills for the 21st-century workforce. Digital literacy training and tools may help teachers improve their abilities and promote student digital learning.

Thus, this pilot study interviewed teachers who utilised digital technology in unique conditions (such the COVID-19 pandemic and flooding) to learn about digital pedagogy. The results of this basic study might be utilised to launch a more in-depth study to help policymakers and educators enhance teachers' digital abilities and teaching efficacy.

2. Literature Review

Since digital technology is essential to education, teachers must be proficient in its use. Information collecting in education is well-known, but how it may assist Malaysian educators become digitally agile is not. Insufficient data address the existing study on Malaysian teachers' digital technology information-seeking practises. However, several studies have examined Malaysian educators' information-seeking. Anuar et al. (2019) found that teachers' attitudes, subjective norms, and perceived behavioural control all affected their intention to use digital technology in teaching. Veeramuthu (2023), on the other hand examined Malaysian literature students' IR4.0 learning practices and challenges. The study found that students struggled with digital literacy and resource shortages while shifting to digital learning. This study found that teachers need digital abilities to help pupils learn in the digital age.

Additionally, Zainal and Zainuddin (2020) examined how national Information and Communication Technology (ICT) regulations affect Malaysia's educational sector, focusing on school technology use. Policy measures improved technological integration in educational institutions, according to studies. Poor infrastructure and teacher training have hindered the optimal use of digital technologies in education. As a result, digital technology has become a crucial tool in education, and teachers must be proficient at using it. There is little information on how Malaysian educators may improve their ICT skills. Several studies have examined Malaysian teachers' digital technology information-gathering practices, underlining the relevance of digital skills in education. These studies suggest that teachers must master digital skills to help kids learn in the digital age. Poor infrastructure and teacher training also hinder the proper implementation of digital technology in education, according to the findings.

Clearly, information acquisition will grow in importance. The role of information collection in shaping instructors' digital learning agility is misunderstood. Thus, to fill this knowledge vacuum, this pilot study answers the following research question: **How does gathering information support teachers' digital learning agility?**

3. Methodology

This study examined how Malaysian primary school teachers collected data on digital teaching methods amid unprecedented COVID-19 and flood occurrences. The researcher initially contacted prospective instructors for the exploratory inquiry using a prepared information document that explained the study's goals and expected outcomes. Teachers who wanted to participate were screened to make sure they met the researcher's criteria, which included (1) having experience teaching during unsettling times (i.e., COVID-19, the flood, etc.), (2) having taught for at least five years to ensure they had ample experience before, during, and after COVID-19, and (3) teaching at a school with digital facilities. Three Selangor primary school teachers were included in the preliminary research.

After ethical permission, data gathering began. Participants have to sign a form for approval and the Google Meet semi-structured interviews averaged 45 minutes. The researcher copied the interview tapes to her laptop to transcribe and preserve them. The transcriptions were returned to instructors to enhance the interviews and assure accuracy (Mero-Jaffe, 2011).

The data was thematically analysed using the six stages proposed by Braun and Clarke (2006) because it is appropriate for the research as it reports experiences, meanings, and the reality of participants (Braun & Clarke, 2006) in order to uncover teachers' real experiences and gather information about digital teaching.

4. Findings and Discussion

Based on the data taken during the interviews, the findings are grouped in line with the categories of information obtained by the teachers. Notably, when questioned about acquiring information, teachers mentioned two types: (1) getting information and data connected to student learning, and (2) gathering more digital teaching-related information.

Based on the biographical backgrounds gathered, Table 1 depicts the age distribution of three teachers. Their educational backgrounds were as follows: two had bachelor's degrees and one had a master's degree. According to teaching periods, all three teachers had an average of 12 years of teaching experience and had taught before, during, and after COVID-19.

Table 1. *Age Distribution of Teachers*

Age	30-34	35-39	40-44
Count	1	1	1

4.1 Gathering Information and Data Related to Students' Learning

Regarding the first variety of information and data pertaining to student learning collected by teachers, one major theme has been derived from the data collected as presented in Table 2.

Table 2. *Teachers' Motivational Factors for Gathering Information Related to Students' Learning*

Students' Participation	Students' Proficiency Level
• Identifying the time and day students are most active • Engage with students	• Plan the teacher's next teaching strategy • Improvise teaching methods

The teachers were motivated to gather information related to digital teaching because it increases students' participation in online classrooms. One of the types of information that the teachers gather is the student's attendance and the teacher explains *"…by knowing the rate of attendance on certain days or certain times, we'll know that, maybe on Wednesday noon, there will be more students."* (T1). T1 also states that once they have identified a suitable time and day that the students are most likely to participate, *"…that is the time where you share more input, and for other sessions, maybe you can share something that is not really or very important during that (session)…"* They also expressed that by gathering information, they would engage with the students better. T2 explains *"…Yes. I keep a record (because) I don't know the children, so I ask whenever I start to do a reading activity and ask questions or ask what's your name? I got a list, and then I write down, I record it there because I don't know the children…"* This conclusion is consistent with Fullan's (2002) study, in which data collecting assists teachers in identifying students' strengths and shortcomings, allowing them to give focused assistance and interventions.

The second motivational factor was the ability to identify students' proficiency levels which can be done by gathering information related to digital teaching. T2 states that their actions of gathering information after they did online activities helped them to know the students' proficiency level *"…from there, I know their level of proficiency, so then (I know) how to improvise or what shall I do, I mean, my enrichment or remedial activities for the children."* T1 also echoes the same sentiment when s/he states *"…from there it actually helps me to plan for my next steps to teach the kids."* This conclusion is corroborated by research done by Basuki and Hidayati (2019), who said that data gathering assists teachers in monitoring student development and identifying students who may be struggling and require further support. They also claimed that data collecting enables teachers to assess the efficacy of educational technology tools and resources (Basuki & Hidayati, 2019).

The researcher found the data insufficient as no participants addressed their difficulties in collecting the material, despite its usefulness in understanding teachers' motivations. The literature has highlighted the challenges teachers face, including (1) time constraints to gather and analyse data; (2) a lack of training or expertise; (3) a lack of technology or assessment tools; and (4) concerns about students' privacy, especially sensitive information. While

gathering data on student learning is crucial for good teaching, the researcher emphasises the importance of addressing teachers' challenges.

4.2 Gathering Additional Digital Teaching-Related Information

Regarding the second variety of information gathered by teachers, namely additional digital teaching-related information, the researcher has identified a central theme as presented in Table 3.

Table 3. *Factors Influencing the Acquisition of Additional Digital Teaching-Related Information by Teachers.*

Keeping up with the most recent digital teaching trends	*Enhance teachers' own knowledge and abilities regarding digital teaching tools and information*
• Digital technology constantly changing • Many new digital teaching platforms	• Self-satisfaction • Upgrade own digital technology skills

Based on the data extracted from the preliminary interviews, it is evident that there are several factors influencing teachers' acquisition of additional digital teaching-related information. P1 and P2 both agreed that there are constant changes when it comes to technology that are teaching-related. P1 explains that *"It is important to do this (gather information) because it's (digital technology) constantly changing and there are also, there are always new things that we need to know that we will learn, or we can learn."* P2 in the interview highlights that *"…yes of course. Everything is new. digital itself is very new…"* According to Perifanou et al. (2021), by keeping up with digital teaching trends, teachers may meet their daily teaching requirements and prepare for long-term digital education progress. Furthermore, new digital teaching platforms also expose teachers to several digital technologies that might help them boost students' learning (Hadianti & Rohmah, 2021).

The next influencing factor is to enhance teachers' own knowledge and abilities regarding digital teaching tools and information. P3 strongly asserts that *"We learn digital tools for our own self-satisfaction. We want to know how to use it. It's very motivating when we feel happy. We like to explore and explore."* When further asked whether P3 always keeps up to date with new digital technology, P3 further explains that *"(I) always do. When we discuss innovation, devices, and tools, we typically refer to apps. I seek digital technology-related information through the website. Numerous websites Occasionally through TikTok. TikTok isnt just about people dancing. There is a video tutorial about design—how to take an angle (when photographing)—so they have instructional videos. Therefore, we update our knowledge of all aspects, not just teaching."* It is important that teachers should follow the latest digital teaching trends to increase their digital literacy and abilities, which can boost student learning (Liza & Andriyanti, 2020; Rahmi & Fajrussalam, 2022). Additionally, teachers who are competent in using technology for lesson preparation, classroom instruction, assessment and feedback, and contact with students and families are more motivated to learn and use digital technologies (Beardsley et al., 2021).

Using the latest digital teaching methods can have pros and cons. Some teachers lack digital literacy abilities to use technology successfully in the classroom (Liza & Andriyanti, 2020) which may induce frustration and insecurity while utilising digital technology, lowering teaching and learning quality (Shen et al., 2017). A lack of school digital technology infrastructure may also hinder digital teaching (Chrismastianto & Wibawanta, 2023). Some teachers may feel left behind in their digital education developments (Tolks et al., 2020). Finally, teachers may become too dependent on digital technology and neglect other important components of education like building relationships with students and delivering individualised feedback (Lin et al., 2017).

4.3 Teachers' Preferred Method of Gathering Information

Final data from preliminary interviews are participants' favourite ways of acquiring information. All three individuals preferred to get information online. P1 mentions that the information gathered is *"mostly online videos and webinars"* while P2 explains that s/he gathered information through *"… (I use) YouTube, Google…"* P3 on the other hand further expands that *"…it's a good thing (to be able to gather information) because it's all at your fingertips. By phone. Everything is on the phone, through the Internet."* The discussion with all three preliminary participants highlighted the ease with which knowledge can be gotten in this day and age because everything is available online. It is worth noting that teachers can use the Internet to obtain knowledge on digital teaching (König et al., 2020; Southerton & Lee, 2021; Cahyaningsih, 2021). However, it is critical for teachers to have the appropriate digital literacy abilities to browse and utilise the internet for teaching purposes (Hanan et al., 2022), since this can increase the quality of students' teaching and learning experiences (Liza & Andriyanti, 2020).

The preliminary study shows that acquiring information supports teachers' digital learning agility in numerous ways. First, it keeps teachers up to date on the latest digital tools and technology to better their teaching (Tour, 2016). Second, it helps students find and accumulate learning resources (Eraku et al., 2021). Thirdly, it motivates teachers to evaluate their instruction and improve their digital literacy (Tour, 2016). Finally, collecting information helps teachers socialise and build personal learning networks for continuous digital learning assistance (Tour, 2016). Thus, information collecting is essential to teachers' digital learning agility because it allows them to build digital literacy skills and stay current on the latest digital technologies and tools that might improve teaching.

5. Conclusion

Finally, this pilot research showed how information collecting improves teachers' digital learning agility. The literature highlighted the relevance of digital skills in education and the challenges to efficient digital technology use in education. Methods detailed this study's qualitative research style, which comprised semi-structured interviews with Malaysian primary school teachers.

The findings show that teachers use student learning and digital teaching information to improve their teaching. The study also identified factors that affect teachers' student learning data collection. The survey found that acquiring information is an important part of a teacher's job and may help them become more technologically agile. Online platforms were the favoured way.

This study expanded teachers' information collecting and digital learning agility literature. This exploratory study may prompt a more thorough investigation that might inform policies and activities to improve teachers' digital dexterity and pedagogical efficacy. Future study should examine teachers' obstacles in obtaining digital instructional data and how to solve them. Future research should also examine how different information-gathering methods might increase instructors' digital learning agility.

References

Anuar, N. B., Yusoff, R. C. M., & Yusoff, M. Z. M. (2019). Digital education behaviour among Malaysian school instructors: An extended theory of planned behaviour. *Education and Information Technologies*, 24(6), 3475-3491.

Basuki, Y., & Hidayati, N. (2019). The effectiveness of Quizizz in vocabulary learning. *Journal of English Language Teaching and Linguistics,* 4(2), 1-12.

Beardsley, M., Albó, L., Aragón, P., & Hernández-Leo, D. (2021). Emergency education effects on teacher abilities and motivation to use digital technologies. *British Journal of Educational Technology*, 52(4), 1455-1477.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.

Cahyaningsih, N. L. G. D. P. (2021). Digital tools used in bahasa indonesia for non-native speakers (BIPA) online learning in Canggu community school. In *2nd International Conference on Education, Language, Literature, and Arts, ICELLA 2021*,114-124. Atlantis Press.

Chrismastianto, I. A. W., & Wibawanta, B. (2023). Teacher's competencies profile in teaching and learning using digital technology in postmodern society. In *Proceedings of the 4th International Conference on Law, Social Sciences, and Education, ICLSSE 2022*, 28 October 2022, Singaraja, Bali, Indonesia.

Dahlqvist, C. (2021). Information-seeking behaviours of teacher students: A systematic review of quantitative methods literature. *Education for Information*, 37(3), 259-285.

Eraku, S. S., Baruadi, M. K., Anantadjaya, S. P., Fadjarajani, S., Supriatna, U., & Arifin, A. (2022). Digital literacy and educators of islamic education. Edukasi Islami: *Jurnal Pendidikan Islam,* 10(01), 569-576.

Fullan, M. (2002). The change leader. *Educational Leadership*, 59(8), 16-20.

Hadianti, S., & Rohmah, D. W. M. (2021). English teachers' perception on using digital tools in the classroom. Exposure: *Jurnal Pendidikan Bahasa Inggris*, 10(2), 234-241.

Hanan, A., Firman, E., & Putri, A. N. (2022). Investigating English teachers' digital literacy in the context of online learning. *Jurnal Ilmu Sosial dan Pendidikan* (JISIP), 6(3).

König, J., Jäger-Biela, D. J., & Glutsch, N. (2020). Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany. *European Journal of Teacher Education*, 43(4), 608-622.

Kuusisto, M. (2017). Organizational effects of digitalization: A literature review. *International Journal Of Organization Theory And Behavior*, 20(03), 341-362.

Lin, M. H., Chen, H. C., & Liu, K. S. (2017). A study of the effects of digital learning on learning motivation and learning outcome. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(7), 3553-3564.

Liza, K., & Andriyanti, E. (2020). Digital literacy scale of English pre-service teachers and their perceived readiness toward the application of digital technologies. *Journal of Education and Learning (EduLearn)*, 14(1), 74-79.

Merro-Jaffe, I. (2011). "Is That What I Said?" Interview transcript approval by participants: An aspect of ethics in qualitative research. *International Journal of Qualitative Methods,* 10(3), 231-247.

Perifanou, M., Economides, A. A., & Tzafilkou, K. (2021). Teachers' digital skills readiness during COVID-19 pandemic. *International Journal of Emerging Technologies in Learning,* 16(08), 238-251.

Rahmi, Y. N., & Fajrussalam, H. (2022, November). Digital media: Strategy Islamic religious for children in modern era. In Proceeding of *Saizu International Conference on Transdisciplinary Religious Studies* (pp. 39-47).

Shen, X. H., Li, L., Zhang, Y. F., & Ji, X. H. (2017). Building multi-level practice teaching system for digital media major. International Conference on *Education Innovation and Economic Management.*

Southerton, E., & Lee, V. R. (2021). Current approaches in teacher learning on digital social platforms. Handbook of Research on *Transforming Teachers' Online Pedagogical Reasoning for Engaging K-12 Students in Virtual Learning*, 624-641.

Sree P.N.U. & Das V.T. (2021, February 5). Impact of intentional change theory and intrinsic motivation on agile teachers. *EPRA International Journal of Economic and Business Review,* 10–22.

Tolks, D., Kuhn, S., & Kaap-Fröhlich, S. (2020). Teaching in times of COVID-19. Challenges and opportunities for digital teaching. *GMS Journal for Medical Education,* 37(7).

Tour, E. (2017). Teachers' self-initiated professional learning through personal learning networks. *Technology, Pedagogy and Education*, 26(2), 179-192.

Van Petegem, W., Bosman, J. P., De Klerk, M., & Strydom, S. (2021). *Evolving as a digital scholar: Teaching and Researching in a Digital World* (p. 180). Leuven University Press.

Veeramuthu, V. (2023). Learning behaviours and challenges of Malaysian literature students in the context of IR4.0. *Education and Information Technologies*, 28(1), 1-18.

Zainal, N. H., & Zainuddin, Z. (2020). The impact of national ICT in education policy initiatives in Malaysia on school technology adoption. *Education and Information Technologies*, 25(6), 5265-5283.