Challenges of school leaders' digital leadership: An initial study in Bintulu, Sarawak, Malaysia

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ABSTRACT

Technological development is constant and rapid. These changes involve not only communication, the economy, or the health field but also education. To overcome these issues, school leaders are required to equip themselves with the knowledge of the digital field. Therefore, this study explores the challenges or issues that school leaders face. In order to achieve the goals of this study, the data were collected by applying a qualitative method using a case study approach through semi-structured interviews. Two school leaders participated in the interview session. Thematic analysis was used to sort out the data in order to determine the themes. This study found that the issues in school leaders' digital leadership are lack of knowledge, inability to use data for school planning, lack of computers and devices for teaching and learning activities, and lack of engagement. The implication of this study is to make education stakeholders, such as school leaders, aware of the importance of digital leadership in school.

INTRODUCTION

In the era of globalization, the use of technology is becoming more well-known and is developing rapidly. Technology is used in communication and all fields, such as medicine, economics, science, education, agriculture, sports, construction and even the military. This change can be seen significantly from the early 1900s to 2000. Technological changes from the early 2000s until now have had a progressive impact in several fields. For example, western researchers such as Collin et al. (2015), stated that the management field of organizations has changed rapidly due to the impact of digital transformation.

Along with changes in the technology field, a school leader needs to be able to use and manage the various available technology-related resources. A leader needs to make plans and decisions based on available information. As stated by Brett (2020), a leader needs to be ready to react quickly and provide tactical solutions to urgent situations, and we must, at the same time, be strategic in our operations. Failure to perform either of these well limits our chances of success. Advances in technology also make education more challenging, especially in the digital era, which demands that school leaders cultivate the use of digital technology in school administration and management (N. Hafiza et al., 2021). According to Aksal (2015), integrating Information and Communication Technology (ICT) into the education system and management process has transformed leadership into digital leadership. Leaders have become agents of digital culture who try to create a digital culture, often with limited time and resources but with the need to act efficiently in the face of changing global standards. As explained by Mat Rahimi et al. (2019), nevertheless, when considering Malaysian educational leaders, research indicates that a significant number of school leaders possess limited to moderate levels of proficiency and expertise in technology leadership.

Hence, according to Aksal (2015), school leaders need to equip themselves and strive to fill any gaps in their knowledge and technology skills to provide direction and guidance to lead digital development in their schools and spread this practice to the school's learning environment. Aksal also identified a gap in knowledge about how to face and lead digital development in school management and apply this practice to the learning environment. According to Norakmar Omar Mohd et al. (2020), technology leaders play a major role in changing the school environment by considering the needs and potential of ICT-based learning.

This study can help school leaders to be ready with knowledge and consistent with the current development of technology. Indeed, the development of this technology will continue. It can also improve the role of school leaders in ensuring that the organization, teachers, staff, and students are in a state of readiness for the developments that are taking place and that excellence in the field of education can continue. In addition, this study can guide school leaders in ensuring their role as leaders of change in schools. This study was conducted to recognise issues in digital leadership that arise among school leaders in Malaysia.

Chronology of ICT Education in Malaysia

The field of education has been no exception in undergoing changes in technology. For example, in Malaysia, the use of computers began at the end of the 1980s. Next, the Ministry of Education launched 88 smart schools in 1999 after the government decided to make Malaysia a developed country by initiating the Multimedia Super Corridor (MSC) in 1996. Subsequently, the Ministry of Education took proactive steps with the 1BestariNet and VLE Frog initiatives for all schools in Malaysia. This project kicked off in 2013, has upgraded the internet infrastructure in 10,000 primary and secondary schools in Malaysia, complete with 4G high-speed internet access and a virtual learning platform that provides high-speed Internet connection and access to Integrated Learning Solutions KPM (2013). In the Majlis Amanat Perdana Setahun Malaysia Prihatin, delivered by the former 8th Prime Minister, Tan Sri Muhyiddin bin Yassin on 1st March 2021, there was a discussion about the digital education policy. Thereafter, the Ministry of Education formulated a digital education policy to produce a digitally literate generation.

Digital Leadership Model

The Institut Aminuddin Baki (IAB), a core of educational leadership training in Malaysia, led educational leadership and management training to develop the ability of educational managers and leaders at all levels of the Ministry of Education Malaysia (MOE). In 2020, the IAB published a document titled Standard Kompetensi Pemimpin Sekolah Malaysia 2.0 (KOMPAS 2.0) as the main reference for all levels, especially schools, as an added value to the quality of school leadership. In the KOMPAS 2.0 model, five domains and 18 competencies should be the focus for school leaders. In this study, two domains and three competencies have been used. The instructional domain involves the competence of cultivating a digital ecosystem; the operational resource domain involves the competence of managing various data and educational resources.

Meanwhile, in Western countries, a body called the International Society for Technology in Education (ISTE) in 2018 issued a new standard for school leaders. It outlines five dimensions of digital leadership: visionary leadership, digital era learning culture, excellence in professional practice, systematic improvement and digital citizenship. Therefore, in this study, the three models above will be the primary references when discussing the results of the study.

Leadership

The Western researchers Robbins and Judge (2009) describe leadership as the ability to influence a group towards achieving a certain goal. Meanwhile, according to Kouzes (2007), defining leadership as showing the way and direction, sharing vision, overcoming challenges and giving support to others to act and giving support to others to act and giving encouragement to oneself are the main factors in being a leader. Ivancevich et al. (2005) described leadership as a process of influencing others to facilitate the achievement of relevant organizational goals. Therefore, it can be concluded that leadership is the art of influencing others, giving support, and sharing a vision to achieve a goal.

Digital Leadership

This study will also look at the analysis needed to develop a digital leadership model. Sagbas and Erdogan (2022) digital leadership is a leadership model that implements digital transformation in the organization that can digitize the work environment and organizational learning culture. Zhong (2017) states that digital leadership is about leading and inspiring digital transformation, creating and maintaining a digital learning culture, facilitating and enhancing professional growth based on technology, and providing and maintaining a digital organization. According to Schiuma et al. (2021), digital leadership is an ability that leaders should have in terms of digital knowledge in the current digital era.

Previous studies

Research conducted by Anderson and Dexter (2005) found that due to the large impact leadership can have on instructional outcomes, the principal's technology leadership is more important than the school's technology infrastructure. The study conducted by N. Hafiza Hamzah et al. (2021) found that school leaders in the Hulu Langat area were found to practice five domains in the ISTE-Educational Leaders model at a high level in schools.

METHODOLOGY

This study focuses specifically on issues faced by school leaders in the context of digital leadership and explores the challenges faced in schools. This part will also discuss the research methodology as follows:

Research design

This study was conducted in Bintulu, Sarawak and involved two school leaders. The methodology used in this study is the qualitative case study approach. According to Merriam and Tisdell (2015), this approach will reveal something connected to the case study and contribute some

knowledge to the research being carried out. Therefore, Quintão et al. (2020) stress a case study is an approach that typically involves exploring a single unit in-depth and is a qualitative method. It addresses research questions that the investigator may not have complete control over the phenomenon being investigated. This method is employed to comprehend the structure and the underlying factors influencing a specific decision. Furthermore, as reported by Yin (2017), case studies can be used for two main purposes: exploratory and descriptive. The reliability of the study is enhanced through the replication process, which is guided by a protocol. Techniques such as recorded interviews, coded responses, and analytical data analysis methods were carried out in the protocol to ensure increased reliability. Meanwhile, according to the perspectives of Western scholars Bogdan and Biklen (2007), it is stated that verification of the collected interview data needs to be conducted to enhance the validity and reliability of the primary qualitative data by providing the completed written transcripts to the study participants for review and signature. In this context, a semi-structured interview approach was utilized, enabling participants, specifically principals or school leaders, to share their schools' experiences. These interviews, lasting approximately 45 minutes, were audio recorded, transcribed, and member-checked. This study focuses on one main question: What are the issues of digital leadership in schools?

Sampling

The sample selection is based on purposive sampling. According to Robinson (2014), purposive sampling is the deliberate selection of participants based on their ability to explain certain themes, concepts or phenomena. There are two criteria applied in this study; the first is that participants must be school leaders, and the second is that they have experience as school leaders of no less than five years. Following the opinion of Western scholars Bogdan and Biklen (2007), most researchers choose case studies as their first study to gain initial exposure to research processes. According to Gay and Geoffrey (2006), usually, case studies in the field of education can cover a school, a class, an administration, a teacher, a group of students, or a student.

Instrument

A semi-structured interview protocol instrument was prepared for this study. This interview protocol was given to two experts for review of language and content. According to Merriam and Tisdell (2015), using a semi-structured interview method is more flexible, and participants can also contribute responses and information for this study.

Data Analysis

For this study, data were collected using interview protocol instruments with experts. The experts referred to are school leaders with at least five years of experience in the digital field. In the opinion of Berliner (1994), expert views can identify effective ways to discover new problems. The interview results of the study participants will be analysed using the thematic analysis method. According to Western researchers Braun and Clarke (2006), thematic analysis provides flexibility and a very useful method through which it is possible to gather a large amount of detailed and complex data.

RESULT AND DISCUSSION

Finding

Through the interviews, several issues related to the digital leadership model have been fruitfully acknowledged. This interview was conducted with two study participants.

Digital Leadership Issues of School Leaders: A Case Study in Bintulu, Sarawak.

The research findings for this section were obtained from interviews conducted with two school leaders in Bintulu Division, Sarawak. These interviews aim, among other things, to recognise issues identified in digital leadership among school leaders.

Issue 1: Lack of enhancing current knowledge

As experienced school leaders, both participants stated that leaders should always be ready to gain knowledge. As a school leader, this knowledge needs to be available and always up to date in the rapid development of technology. In this modern age, knowledge related to digital technology is very important.

"...as a leader, it can be said that it is also mandatory to improve oneself in this field of technology. Because now if we look at a lot of information that is channelled, or that is built by KPM, it's all kind of at our fingertips..."
(P1C2)

The second participant also said the same thing regarding how necessary it is as a leader to seize the opportunity to increase the existing knowledge or try to find it by oneself without having to be directed.

"...our leaders must grab the opportunities of this information and if they are blocked, find a way to overcome them..."
(P2C6)

Participants informed us that there are also teachers who need to master knowledge related to this technology. During the Covid 19 pandemic, teaching methods have changed from face-to-face to online. When using online teaching, teachers need to master a lot of new knowledge to be able to teach effectively. Google Meet, WebEx, Microsoft Teams, the use of Telegram and WhatsApp apps continue to be popular with teachers. However, there are still teachers who cannot use these applications well.

Issue 2: Not managing data for planning well

The change that is taking place from storing data manually to digital is indeed beneficial to all. The preparation and storage of data become simpler because it does not require a large space for storage compared to the use of files. Now data are stored in a computer, on a hard disk, server or cloud storage. Data related to school information, teacher information, students, exams, co-curriculum and even finances are now all digital. However, an issue was identified regarding the proficiency of school leaders in analysing and using available data for school planning.

"...we don't analyse the data comprehensively, as you said; there are only certain parts, for example, the academic part, that we don't normally do and also SEGAK, that we collect but don't use wisely..."
(P1C12)

Data are a valuable factor in planning or decision-making. The second participant stated that data should be provided according to the demands of the school and not just for what is needed at the top level.

" If we create the data, it is for us to initiate what we need...ok, what the school needs comes from a joint discussion of what we want to achieve, not what the PPD wants."
(P2C15)

The data available at the school level needs to be used optimally. As a leader, it is necessary to be able to analyse all data in the school so that short-term planning and long-term planning can be made for the good of all school members.

"In SK Kg Baru, there are four preschool classes, the six-year-old has three, and the five-year-old has 1 class, respectively. So, there are 75 of these students who will enrol into year 1 in our school, and there will be more student intake to complete 200 places. For year 1, we have five classes; there must be 200 people. It's just that the filling is only 75. I want this 75 to have the basic 3M (writing, reading and counting) they needed..."
(P2C13)

Issue 3: Lack of computers and devices for teaching and learning

Findings from interviews with experts also found that their schools are facing issues related to shortages with no computers received from the MOE. This is very surprising. Computers are a necessity these days.

"...like in other schools, the school usually has an access centre equipped with several computers, but so far our school has not had such a facility. So, whether we like it or not, we use our own initiative to create one. It's as if we cannot depend entirely on KPM. We must create it ourselves with the available capital for our convenience..."
(P1C7)

The school leaders try to improve the school equipment with cooperation from the school, the community and the local leaders. This is as stated by the second participant regarding how they improve school equipment.

"Thank God in Bintulu, we have many corporations and also local MPs who help a lot in getting the allocation every year. We use the allocation to buy smart TVs that we install in certain classes, especially the special classes..."
(P2C2)

To ensure that students are not left behind in terms of the latest progress, school leaders strive to provide the essentials to ensure that teachers and students can always learn in a comfortable environment with the latest teaching aids. The use of devices such as computers and televisions in the classroom has a different effect on T&L.

Issue 4: Lack of engagement

From this expert interview, the researcher found that a school leader needs to engage with his followers. Previously, leaders will always create a relationship between the leader and his followers. This engagement means that the school leader can set an example as a role model for the school community. There are still teachers who are anxious about the use of technology.

"So that when we give instructions and tell them to do something, teachers or AKP do not understand what needs to be done. So, they don't know what to do, but if we guide them, they will get some ideas. The basic idea is already there."
(P2C9)

There are teachers who do not know how to use the software or applications in online teaching. The first participant of this study states the same.

"...then during PdPR, when we show them how to use the video, then we use PowerPoint that can be converted to video. Many of our teachers don't know how to do it..."
(P1C10)

Next, the second participant also stated that as school leaders, they need to continue to support each other in every action taken.

"We have to be together; we have to support each other; that's what we need from this unity. They must be united, eager to follow what the head of the department has decided."
(P2C8)

This shows that school leaders need to involve themselves, actively train and support, give encouragement and be role models to their followers. A good leader will influence subordinates to follow the actions indicated by the leader.

Discussion

Several issues have been identified, such as a lack of enhancing current knowledge, not managing data for planning well, a lack of computers and devices for learning and a lack of engagement. Sheninger (2014), in Pillars of Digital Leadership, has identified seven pillars, namely communication, professional development and learning, student involvement in learning, learning environment and space, opportunities, branding and public relations. According to Lander (2020), there is an international standard developed to evaluate school leaders in technology leadership, which is the International Society for Technology in Education for Education Leaders (ISTE).

ISTE has been a technology-related curriculum and resource organization since 1979. The ISTE Standards for Educational Leaders are designed specifically to highlight the best practices of administrators who work to support the use of technology in their schools. There are five focuses in the ISTE-Standard Leader, which are equality and awakened citizens, empowering leaders, visionary

planners, system designers and connected leaders. In terms of the models used in Malaysia that involve school leaders, one of them is KOMPAS 2.0. The instructional domain and operational resources require school leaders who can cultivate a digital ecosystem and manage various data and operational resources.

Lack of knowledge

Knowledge is very important for a leader. The five main characteristics of digital leadership identified by Zhu (2015), include deep knowledge and understanding, including knowledge of the internet and the digital era, access to a variety of information and being able to interpret, consider and synthesize that information to make decisions. Principals in New Zealand, as mentioned by Starkey and Eppel (2019), states that administrators require individuals who can collect and analyze school-wide data for strategic planning and reporting. Therefore, always striving to increase the latest knowledge is necessary as a leader. Additionally, according to Aksal (2015), continuous improvement and learning in the digital era in disseminating and sharing knowledge are now important leadership traits.

Inability to use data for school planning

In this study, it was found that school leaders are not able to use the data available in the school to the maximum. There is data that is only stored for periodic transmission. In the KOMPAS 2.0 model, the 3rd domain is operational resources, and the 8th construct manages various data. This means that school leaders should be able to use data and then apply it in school planning. Therefore, school leaders should be able to use the accessible data for school planning and improvement.

Lack of computers and devices for teaching and learning

During the study, school leaders stated that there was a lack of devices and computers for students and teachers. However, the school is trying to expand networking and connect with the community and their leaders to get computer donations to ensure students and teachers are not left behind. In the digital leadership model by Sheninger (2019), in the domain of public relations, it is stated that a digital leader uses social media to build positive relationships with the community. The need for these devices is not only for students and teachers but also for school leaders. Findings from the 2018 PISA Study reported by the OECD found that the computing capacity of digital devices in schools in Malaysia is only 24% compared to the OECD average of 69%.

According to Educational Planning and Research Division (EPRD) BPPDP (2020), PISA 2018 reported by the OECD concluded that a high-achieving national education system has several characteristics, among which are schools having many digital devices which are connected to the internet with optimal capacity and computing speed, as well as having an effective internet line platform.

Lack of engagement

One of the four characteristics of digital leaders described by Fisk (2002) is engagement. This means a leader actively coaches and supports others in the organization as they strive to achieve their goals, unlike the previous leadership, who only directed their followers. As stated by Sheninger (2019), digital leaders also need to ensure professional development in the organization by connecting with educators and other professionals to continue learning at any time.

CONCLUSION

Current developments require school leaders who are aware of the changes that occur. It's not enough that the world is in a state of VUCA (Volatility, Uncertainty, Complexity, Ambiguity), especially after Covid-19. Technology is very important in facing the upcoming challenges. In the field of education, preparing students for the future is very important. Accordingly, from this study, there are several things that school leaders and stakeholders need to pay attention to ensure that school leaders are always relevant. First, the Institut Aminuddin Baki (IAB) can provide training or courses to school leaders related to the latest knowledge, especially in the digital field. The second thing is that

school leaders need to take advantage of the data available to improve the school. Data on teachers, students, exams, health, and finance need to be properly analysed and used for decision-making. Third, school leaders need to make efforts to complete the device and computer requirements to ensure that the staff can follow the flow of current technological developments. There is no doubt that the MOE continuously distributes ICT equipment to schools, but there are still schools that do not receive any or do not have enough of it. The fourth and last point is the active involvement of school leaders in training and supporting individuals in the organization. In this modern era of leadership, leaders have various roles. This is to ensure that the organization succeeds with excellence. Therefore, the reality is that leaders must readjust their leadership style. The digital world needs digital leaders. Finally, a recommendation for future research is the provision of a digital leadership module for the preparation of school leaders.

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