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Teachers' perspectives on applying online learning tools through learning management system: The need for an online Malay language teaching module

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Abstract

This study examines Malay language teachers' perceptions of using Google tools in their online teaching in primary schools. It uses a basic interpretative research methodology to investigate the perspectives of six primary school Malay language teachers from Terengganu, Malaysia. Interviews with semi-structured questions were used to collect data and analyzed thematically. All the themes and sub-themes were organized using NVivo 12 software. The data show that the predominant topic in teachers' thoughts on the importance of Google tools was the reasons for their absence of use. There were two essential sub-themes: a lack of skills and proficiency and a need for more awareness of how to use Google tools. Furthermore, this study highlighted personal support of module development as a secondary theme which included two sub-themes: agreement with the need for modules and the importance of providing them. This study also underlined the importance of module preparation which was reinforced by two sub-themes: facilitating teachers' implementation of online teaching and serving as a significant reference for teachers. This study shows that effective online education requires competency, skills and knowledge of Google Tools. It suggests creating a Google Tools module to guide and serve as a resource for Malay language teachers.

Keywords: Google classroom, Google tools, Learning management system, Malay language, Module, Online learning.

Contents

> **Contribution of this paper to the literature**
> This paper highlights the elements of competency, skills and knowledge necessary to apply Google tools when conducting online classes. This study also suggests a need to develop a Google Tools module to assist teachers in teaching online more efficiently.

1. Introduction

Education is improving in tandem with the advancement of Information and Communication Technology (ICT) which necessitates teachers incorporating technology into teaching and facilitation (TF). Since 2014, the Ministry of Education Malaysia (MOE) has implemented technology-based learning. The MOE offers a variety of training, seminars and workshops to all teachers to help them improve their computer hardware and technical application skills. The Ministry of Education consistently emphasizes the use of technology in implementing TF through the Continuous Professional Development Plan and the Master Plan for Teacher Professional Development, both of which aim to strengthen teachers' knowledge, skills and attitudes in dealing with the challenges of 21st-century education.

Technology has revolutionized teaching methods from traditional to technology-based (Ahmad et al., 2021). Technology also helps teachers create more engaging instructional materials using various learning platforms such as Google Classroom (GC), Microsoft Team and Blackboard. According to Pozo, Pérez Echeverría, Cabellos, and Sánchez (2021), technology has considerably impacted teachers since its integration into instruction was established in the educational system. Technology has brought many improvements to 21st-century education and teachers have widely adopted it due to its favorable impact on the quality of online learning. Teachers' favorable experiences with technology in TF should be widely distributed due to its benefits (Raja & Nagasubramani, 2018). Technological progress has considerably influenced changes in teacher TF practice (Adam & Halim, 2019). As a result, the learning process is becoming more global with a greater reliance on digital forms rather than textbooks. The seventh shift of the Malaysia Education Blueprint 2013-2025 is to fully leverage ICT to improve the quality of education in Malaysia. MOE has implemented online learning tools to enhance teachers' digital literacy, an essential element of education in the 21st century.

The Malaysian MOE has launched many initiatives to improve teachers' technology competency. In 2015, RM113 million was spent on software and courses for teachers (Supramaniyam, 2015). The MOE has taken the initiative to enable the Digital Educational Learning Initiative Malaysia (DELIMa) platform to improve the quality of teaching and learning for teachers and students in Malaysian schools. The DELIMa platform provides relevant applications and services designed to support and enhance online teaching for teachers. In 2019, this platform was created with Google's workspace for education programs with GC as the primary application. Other programs, including Microsoft and Apple are also involved. Teachers in DELIMa can use digital technologies like Google Meet, Google Jam Board, Google Forms, Google Docs and Google Slides to exchange learning materials, connect with students, store data and do reinforcement exercises.

Online TF should contribute to higher learning results than traditional TF (Mukhtar & Nasir, 2023). For example, digital applications make training more engaging and participative which enhances learning outcomes. Engaging and participatory learning activities are essential to ensure relevance and enjoyment throughout the process (Nasir, Mansor, & Rahman, 2018). Thus, teachers should actively participate in new technological breakthroughs to improve the efficacy of online teaching and learning. Online TF continues to grow and play an important role in Malaysian education (Gunawan, Suranti, & Fathoroni, 2020). Online teaching encourages teachers to expand their ICT knowledge and skills allowing them to teach more effectively. Online education and facilitation are significant to instructors' ICT capabilities. Teachers need to be proficient in digital applications to teach online. (Mukhtar & Nasir, 2023). As a result, instructors must stay current with technological changes. Mastery of fundamental ICT skills enhances their capacity and accelerates the incorporation of various digital technologies into online instruction (Mohamed, Mohd Daud, Mat Nor, & Hood, 2022). Therefore, Malay language teachers must have extensive knowledge and deep skills in using technology. Rahman, Mohid, and Ramli (2018) state that Malay language teachers must empower themselves with online TF implementation skills to maximize students' achievement levels (Rahman et al., 2018). Malay language teachers' ability to create engaging online lessons using Google tools will influence students' acceptance levels of ICT to gain understanding, interest and commitment in online classrooms (Bahtiar et al., 2020; Hairia'an & Dzainudin, 2020).

Thus, developing an online teaching methods module is essential to assist Malay language teachers in creating activities using Google tools. The activities necessary support the curriculum, assessment and instructions (Amiruddin et al., 2015; Sahaat & Nasri, 2020). Ali (2016) emphasizes that a module should provide a step-by-step guide for conducting online classes using ICT tools to ensure the smooth running of the online courses. Teachers should conduct online instruction following technological developments to provide active and interactive learning. Simultaneously, the developed online teaching module aims to improve teachers' ICT-based knowledge and teaching skills. This study explores teachers' perspectives on the necessity of Google Tools skills among Malay language teachers in primary schools. Concurrently, it seeks to identify the need to develop and design an online teaching module to assist teachers in facilitating more effectively in an online environment. The following two primary research questions guide the study:

1. What are teachers' perspectives regarding the need for Google Tools?
2. What are the teachers' perspectives regarding the need for a Google Tools teaching module?

2. Literature Review

Technology integration in education has become a critical requirement throughout the Fourth Industrial Revolution particularly for the current generation. Integrating technology into educational frameworks improves teaching skills by using creative approaches to impart knowledge more engagingly and interactively. Kern (2006) posits that technology acts as a vital bridge between teachers and students. According to Kop's (2011) study,

technology's most significant contribution to education is the boundless dissemination of learning content. The rapid and continuous development of technology facilitates the process of TF, captures student interest and saves time. Efforts to promote technology in teaching align with the seventh shift of the Malaysian Education Blueprint 2013-2025 which aims to fully leverage technology to enhance the quality of education in Malaysia. Currently, this initiative is in its third wave focusing on strengthening and intensifying the use of technology.

Technology plays a crucial role in enhancing the quality and diversifying the delivery and teaching methods through the Internet, multimedia materials and existing teaching resources. Interactive multimedia products incorporating visual graphics, text, music, video and animation improve students' conceptual understanding. Technology provides numerous options for Malay language teachers and students to explore, find instructional materials or references and perform research. Education uses various technological applications, including e-learning, blended learning and mobile learning. The array of software construction and design creates a huge virtual arena for Malay language teachers to seek and explore knowledge allowing them to deepen their understanding of sophisticated technology and incorporate it into the TF. Chung, Noor, and Mathew (2020) listed many Learning Management Systems (LMS) and other platforms suitable for online TF such as Microsoft Teams, Cisco Webex, Blackboard, Telegram, WhatsApp and YouTube. The Ministry of Education (MOE) established an online learning platform called DELIMa. DELIMa includes various digital tools, including GC, Google Meet, Google Jam Board, Google Keep, Google Forms, Google Docs and Google Slides. These serve as alternative learning platforms for teachers to perform online professional development.

In Malaysia, the use of online TF in MOE-accredited schools remains low (Education Technology Department, 2017; Report of the Head of the National Audit, 2018; Yeop, Yaakob, Wong, Don, & Zain, 2019), a finding supported by other researchers (Hamzah & Yeop, 2016; Harun & Yusof, 2020). As a result, integrating online teaching provides a new difficulty for teachers as it requires ICT competency (Idriki & Piang, 2022). This prerequisite is a big challenge for Malay language teachers. Mohamed and Zulkafali (2019) argue that good teaching and facilitation planning are critical for Malay language teachers particularly when developing appropriate tactics for online TF. Research has found that most Malay teachers prefer traditional teaching methods to online alternatives (Baharuddin & Badusah, 2015; Harun & Yusof, 2020; Subri, Yaakub, & Boheran Nudin, 2021). Teachers should use various digital apps in DELIMa, including Google tools. It is critical for innovative Malay language teachers to effectively use online TF to impart knowledge and generate interactive, engaging and joyful learning experiences. Therefore, some Malay language teachers are not interested in online teaching because they need more in-depth ICT knowledge causing online TF not to be implemented (Kamaruddin, 2019). This finding aligns with Ahmad et al., (2021) who clarify that Malay language teachers who lack knowledge of technology usage find it difficult to implement online TF, especially among senior or veteran teachers. Magesvaran (2021) also further strengthened the unsatisfactory level of knowledge of Malay language teachers teaching online TF. This issue could affect teachers' ability to diversify online pedagogical methods.

Furthermore, the lack of technological skills in using the LMS is a significant factor that prevents Malay language teachers from favoring its use in TF. Lapammu and Mahamod (2018) found that Malay language teachers exhibit less proficiency in using LMS elements despite their training and exposure. Malay language teachers still lack skills in implementing online TF because they did not attend intensive courses related to technology skills in TF. Another study also found that Malay language teachers were not familiar with online elements like Google Forms, Quizzes, Word Wall, Google Meet, Zoom Meeting, Microsoft Meet and YouTube (Mokhtar & Ali, 2021; Omar, Mamat, Sulaiman, & Ismail, 2021). Malay language teachers should be more discerning in seizing opportunities to diversify teaching methods to create a more meaningful learning environment aligning with the responsibility of teachers to nurture knowledgeable individuals with creative and innovative minds in line with present and future demands. Therefore, this study is significant as it highlights the need to develop an online teaching methods module using Google tools to improve the knowledge and teaching skills of Malay language teachers in primary schools.

3. Research Methodology

3.1. Research Design

This study's research design relies on an interpretative research paradigm to provide a comprehensive and detailed account of how Malay language teachers use Google tools in their online teaching. This study also examines the need to design and develop an online teaching methods module using Google tools. The interview protocol was developed to gather some information from six Malay teachers. Three experts consulted to check the items used in the interview question protocol to ensure validity and reliability.

3.2. Participant Selection

Six Malay language teachers from different primary schools in Terengganu are participating in this research. The participants, pseudonymously called Malik, Zamri, Fatihah, Karim, Rosli, and Siti are a homogeneous group providing diverse perspectives. Selection criteria for participants included holding academic qualifications at the bachelor's, master's or diploma levels in the Malay language, having a minimum of ten years of teaching experience with the integration of ICT in the classroom and demonstrating a positive attitude towards professional development in education. The purposive selection of these participants aims to gather comprehensive insights for determining the module's content. Table 1 summarizes the characteristics of the participants.

3.3. Data Collection Method

This study employed semi-structured interviews and field notes as the primary data collection methods to explore issues, concerns and perspectives regarding Google tools. The interviews conducted in Malay lasted approximately one hour each. Research participants were approached to obtain consent for face-to-face interviews which were recorded using a digital recorder and supplemented with essential notes.

Table 1. Demographic profile of participants.

Names	Gender	Age	Level of education	Teaching experience using ICT tools (year)	Tools used	Frequency of tool usage
Malik	Male	41	Diploma	19	Meet Google form Google doc Google slide	Rarely Rarely Rarely Rarely
Zamri	Male	46	Master	21	Meet jam board	Rarely Occasionally
Fatihah	Female	48	Bachelor	28	Meet jam board Google form Google doc Google slide	Always Occasionally Occasionally Rarely
Karim	Male	42	Master	18	Meet Google form	Always Always
Rosli	Male	44	Bachelor	17	Meet Google form Google slide	Always Rarely Rarely
Siti	Female	47	Bachelor	22	Meet Google form Google slide	Occasionally Rarely Rarely

3.4. Data Analysis

Interview data were analyzed using thematic analysis. The researcher reviewed the entire interview text and re-examined the audio recordings to develop a comprehensive overview. Reflective consideration was given to the overall meaning of the data. During the re-examination of the audio recordings, particular attention was paid to the participants' tone of voice as it provided additional context for the data. The interview transcripts were systematically analyzed and coded with the aid of NVivo 12 software focusing on segments that addressed the research questions. Data segments were compared within and across interview transcripts to ensure thorough analysis and interpretation.

The researchers rigorously ensured that the coding process preserved the integrity of the meanings conveyed by the research participants. Subsequently, coding systematically categorized the data into several thematic groups. This organization was aligned with specific themes and facilitated comparative analysis across interviews. These themes constituted the study's main findings and were essential in qualitative analysis. Thematic coding was based on the research objectives and information obtained. The interpretation of thematic coding depended on the information obtained from the research participants.

3.5. Validity and Reliability

Research also emphasizes the validity and reliability of interview data. Miles and Huberman (1994) argue that there are no specific rules for establishing validity in qualitative studies. Meanwhile, Cohen, Manion, and Morrison (2007) and Merriam and Grenier (2019) emphasize that validity is required to ensure data accuracy from qualitative instruments. This study appointed and consulted the following three experts to ensure the validity and reliability of the interview question items: Two Malay language lecturers and one educational technology lecturer who specialized in their respective fields. The justification for selecting these experts is based on two main criteria: Malay language lecturers and educational technology lecturers who have at least ten years or more of experience in their respective fields. The selection of these three expert evaluators is based on Lynn (1986) who suggests that a minimum of three expert evaluators is sufficient for validity testing (see Table 2).

Table 2. Validity assessment experts.

No.	Field of expertise	Highest academic qualification	Position	Years of teaching
1	Malay language education and pedagogy	PhD	Lecturer	19
2	Malay language and Malay literature	PhD	Lecturer	16
3	ICT, instructional design, educational technology, web design, computational thinking and gamification	Master	Lecturer	18

Creswell (2007) and Merriam and Grenier (2019) were used during the actual study implementation to ensure the validity and reliability of the study such as triangulation, member check, long-term observation, peer examination, researcher bias and detailed and thick descriptions. The researcher uses multiple data sources from teacher interviews and observations to triangulate the data and confirm emerging findings. A member check was conducted to obtain further information for uncertain and conflicting data from the research participants. The researcher refers to the participants to clarify any unclear information from the interpretation.

The long-term observation was conducted by spending more time with the Malay language teachers to obtain in-depth information about using Google tools in teaching. The researcher had no personal relationship with the participant. A peer review was also conducted on the themes to get agreement. In terms of detailed and thick descriptions, according to Merriam and Grenier (2019) researchers provided venues for research participants to express their views based on the questions asked focusing on listening more than speaking. The researchers recorded the interviews conducted using audio recording tapes. During the interviews, the researcher also noted important information obtained from the interviews. Then, the researchers made reflection notes as soon as possible to avoid information loss and ensure the accuracy of the obtained information. The researchers wrote down the interview information based on the original presentation of the research participants clearly and accurately.

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4. Research Findings

Three major themes with multiple sub-themes explained Malay language teachers' perspective on Google tools and the need to develop an online teaching module. The first theme emphasizes two significant impediments to adopting Google tools: insufficient skills and expertise and a lack of information. The second theme focuses on the personal endorsement of module development emphasizing agreement with the requirement and importance of providing such a resource. The last theme outlines the reasons for the module's need: It aids teachers in implementing online teaching effectively and serves as a primary reference for instructional practice. Table 3 presents a comprehensive summary of these themes.

Table 3. Summary of themes.

Research questions	Themes	Sub-themes
What are the teacher's perspectives regarding the need for Google Tools?	Reasons for not using the Google Tools	Insufficient skills and proficiency in using Google Tools
		Lack of knowledge in using Google Tools
What are the teacher's perspectives regarding the need for a Google Tools teaching module?	Personal endorsement of module preparation	Agreement with the requirement
		Agreement with the importance
	Reasons for the module's need	The module aids teachers in implementing online teaching.
		The module serves as the primary reference for teachers.

4.1. The Teacher's Perspectives Regarding the Need for Google Tools
4.1.1. Reasons for Not Using the Google Tools

This sub-theme refers to participants' reasons for not using Google Tools in their teaching. The interview findings revealed the leading cause of this issue is the lack of skills and proficiency mentioned by all six participants (Malik, Zamri, Fatihah, Karim, Rosli, and Siti) below.

4.1.1.1. Insufficient Skills and Proficiency in Using Google Tools

"I do not have skills to use those applications unless I receive full guidance" (Malik).
"I have less proficiency in using it" (Zamri).
"There is no high proficiency in using those applications" (Fatihah).
"I do not have sufficient skills in using this online application" (Siti).

Two participants reported that they had never used the tools because they had no knowledge and needed to learn how to use them.

4.1.1.2. Lack of Knowledge in Using Google Tools

" I have no knowledge and skills about the applications provided in Google Classroom" (Karim)
"I feel I use this less because I need to learn to use it" (Rosli).

4.2. The Teacher's Perspectives Regarding the Need for a Google Tools Teaching Module
4.2.1. Personal Endorsement of Module Preparation

This theme explains the necessity of developing an online teaching method module to enhance the knowledge and teaching skills of Malay language teachers in primary schools. Agreement refers to the participants' views regarding preparing an online teaching method module. The interview found that all six participants (Malik, Zamri, Fatihah, Karim, Rosli and Siti) agreed that an online teaching method module would enhance the knowledge and teaching skills of Malay language teachers in primary schools.

4.2.1.1. Agreement with the Requirement

"Yes. I strongly agree with the requirement of this module preparation" (Malik).

4.2.1.2. Agreement with the Importance

"I strongly agree with the need to provide this module" (Zamri).
"I strongly agree with the proposal for preparing this online teaching method module" (Fatihah).
"In my opinion, I agree with the requirement of this module preparation" (Karim).
"I strongly agree with the proposal to prepare an online teaching method module" (Rosli).
" I completely agree with the need to prepare this Online teaching method module" (Siti).

4.2.2. Reasons for Module's Need

This theme refers to the several reasons participants need to develop the Google Tools module in their teaching. The results of the interview analysis found that all study participants (Malik, Zamri, Fatihah, Karim, Rosli, and Siti) stated that providing online teaching method modules could be a reference and guide them to teach online effectively.

4.2.2.1. The Module Aids Teachers in Implementing Online Teaching

"Helping teachers, especially Malay teachers use Google Classroom well" (Zamri).
"Can be used as a guide to help teachers implement TF online" (Siti).
"Help teachers, especially Malay teachers, to be more knowledgeable and skilled in handling online operations, especially through Google Classroom" (Karim).
"The skills I have are very lacking which needs to be taken seriously because using them helps me a lot in teaching and learning online" (Rosli).

4.2.2.2. The Module Serves as the Primary Reference for Teachers

" Can be the main reference and guide for Malay teachers to implement online teaching" (Malik).

"Can be used as a basis or guide for less skilled teachers like me to diversify skills, diversify the uses of the applications found in Google Classroom" (Fatihah).

5. Discussion

This study examined teachers' perceptions regarding integrating Google Tools within their pedagogical content knowledge. Concurrently, this study identifies the necessity for developing and designing an online teaching module to enhance teachers' effectiveness in facilitating online instruction. It was revealed that two primary barriers using Google Tools were identified as follows through interviews conducted with six primary school Malay language teachers: insufficient skills, proficiency and knowledge. It was observed that personal endorsement of module preparation emerged as a significant factor (e.g., agreement with the necessity and endorsement of module provision) regarding the teachers' views on the necessity for a Google Tools teaching module. Additionally, compelling reason participants cite the need for such a module is its potential to assist teachers in implementing TF online teaching effectively serving as a crucial reference resource for teachers.

Several reasons for their underutilization such as insufficient skills, proficiency and knowledge are based on teachers' perspectives regarding the necessity of Google Tools. Proficiency in technology usage is an indispensable component of the educational system as highlighted by numerous researchers (Kamaruddin, 2019). Teachers' ICT skills are essential because they are relevant to the current generation and are familiar with gadgets and communication devices (Lubis, Wan, Malik, & Hamzah, 2017). This study reveals that the proficiency of Malay language teachers in using Google tools applications is notably low due to the infrequent use of these applications among teachers. Many teachers have never incorporated these resources into their teaching methods. This finding is consistent with Hassan and Kamisan's (2010) study which stated that most teachers rarely use computers and are not proficient in technology even though there are computer facilities in schools, resulting in low technology usage in teaching. This finding also aligns with the study by Azizan and Nasri (2020) which found that some teachers lack the skills to conduct online teaching. Furthermore, it aligns with Goliong, Kasin, Johnny, and Yulip (2020) also found that teachers' lack of proficiency in using technology applications has led to low usage of online learning.

Therefore, Malay language teachers need to prepare themselves by mastering the skills of using digital applications to diversify teaching methods through technology usage to create a more interactive learning environment. Teachers need to continuously enhance their knowledge of technology usage to facilitate their use of online learning applications in school teaching and facilitation. Teachers' lack of knowledge reduces their use of virtual learning environment applications in teaching and facilitation (Mohiddin & Khalid, 2014; Nasir & Ngah, 2022). The analysis revealed that Malay language teachers had limited knowledge about the functions and usage of Jam board, Google Docs, and Google Slide applications. Some Malay language teachers need to be more knowledgeable of the real use of these applications in teaching the Malay language which accounts for their insufficient understanding. The result is consistent with Hashim, Nasri, and Mustafa's (2016) findings which proved that teachers still lack the knowledge to integrate technology into teaching especially in preparing teaching aids and accessing portals. This lack leads to a shallow use of technology in teaching. These findings also align with Bakar, Bukhari, and Bahrin's (2020) study which found that teachers' knowledge of using Google Docs and Google Slide applications is low because they lack an in-depth understanding of application technology usage. The study by Saidin and Husnin (2021) further reinforces these findings revealing that teachers' knowledge of technology usage in teaching is limited due to their unfamiliarity with online teaching applications. These findings also closely align with Choo and Malik (2021) which revealed a deficiency in online learning knowledge among teachers particularly those new to teaching.

According to Mohamed et al. (2022) some teachers need help to use Google Tools applications effectively in their teaching methods. As a result, Malay language teachers must become proficient in using digital tools and successfully incorporate them into their teaching practice to keep up with current educational technology advances. Teachers' viewpoints strongly support module preparation, emphasizing the need for a Google tools teaching module. Teachers agreed on both the necessity and the significance of such a program. Malay language teachers who participated in this study agreed with creating online teaching method modules using Google tools. These tools are viewed as helpful in improving their knowledge and teaching skills in primary schools. Several compelling arguments for the module's requirement were identified. Primarily, the module would serve as an essential reference for teachers in online TF. The formation of such modules is critical to the TF processes (Meyer, 1988; Noah & Ahmad, 2005). Modules provide significant benefits to the target groups such as providing additional materials for a deeper understanding of subjects (Alsagoff, 1981; Meyer, 1988), promoting active engagement during learning (Nasir & Ngah, 2022) and featuring activities designed according to specific objectives (Meyer, 1988; Noordin, 1994).

The modules will provide comprehensive guides and references for online Malay language teachers. The development of these modules is consistent with other researchers who suggested that guides are needed to help teachers integrate technology into their teaching practices (Bahtiar et al., 2020; Halili & Suguneswary, 2016; Pius, Ahmad, & Othman, 2021). Developing the modules is essential because they help teachers improve their ICT skills. They need guidelines to perform TF activities efficiently using digital applications (Ab Hajis, Rosli, Mahmud, Halim, & Karim, 2022). The Malaysia MOE has continually emphasized using ICT in TF processes by launching the continuous professional development plan and the master plan for teacher professional development.

6. Conclusion

Online learning is vital in today's educational setting as it coincides with technological improvements providing unrestricted access to the TF process. Malay language teachers must take the initiative to diversify online teaching so that TF will become interactive despite the quick pace of technological innovation. This approach is consistent with the Malaysian MOE's desire to diversify instructional strategies in TF. As a result,

Malay language teachers must have extensive knowledge and skills to integrate ICT into TF. The study's findings suggest that some Malay language teachers need to become more familiar with the features of Google tools. Several teachers have never used Google Docs, Google Slides, Jam board, or maintained in their online TF activities. Therefore, a dedicated module on online teaching methods is needed to guide and provide references for Malay language teachers. This module would assist them in conducting effective and engaging online instruction using interactive applications. Effective utilization of technology in online education can positively impact the educational experience aligning with the government's objective of educational digitalization.

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