Digitalization of Education. Exploring Views and Experiences of Coastal School Teachers

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ABSTRACT

The 21st-century education landscape has rapidly embraced digitalization to enhance teaching and learning processes. This shift is driven by the need for increased accessibility, student engagement, and flexible delivery methods. Digital technologies also promote greater efficiency and collaboration among key educational stakeholders. However, limited research exists on how contextual factors influence the success of educational digitalization, particularly in rural or coastal school settings. This study adopts a qualitative case study approach exploring how teachers in coastal schools in Bachok, Kelantan perceive and experience the digitalization of education. Four teachers from a coastal school have been participants of the study. Findings highlight both enabling factors and challenges, offering practical insights into future policy and digital education initiatives targeting underrepresented regions.

Keywords: Grounded Theory, Digitalization, Coastal Schools, Teachers

INTRODUCTION

Digitalization of education has become a global phenomenon, impacting students across all educational levels, from kindergarten to tertiary institutions (Crittenden, Biel, & Lovely, 2019; Meng et al., 2025; Vitalis et al., 2025; Palacios & Huertas, 2025). No longer an optional enhancement, digital integration in education is now a necessity, shaping how students learn and prepare for the future (Seethal & Menaka, 2019; Gumaelius et al., 2024; Khan et al., 2024; Awidi & Paynter, 2024). Digital literacy is widely perceived as equipping students with essential 21st-century skills, including critical thinking, creativity, adaptability, and technological proficiency (Malik, 2018; Rahimi, 2024; Adera, 2025).

The impact of digitalization on education varies across countries. For instance, in Sweden, digital transformation has influenced teaching pedagogy, school management, and support systems for teachers and students (Lindqvist & Petterson, 2019). Similarly, in Finland, it has led to significant changes in instructional methods and strengthened collaboration among teachers, administrators, and parents (Korhonen, 2021). However, Gapsalamov et al. (2020), Tasdan et al. (2025), and Jin et al. (2025) found that despite active engagement in digitalization efforts, many stakeholders, including administrators, teachers, and students—struggle to fully understand the process and their respective roles within it

While numerous studies have explored digitalization in urban and suburban schools, research focusing on coastal schools, particularly in economically disadvantaged regions such as Bachok, Kelantan, remains limited. Existing literature largely discusses teachers' attitudes toward digitalization and general implementation strategies but lacks in-depth analysis of the socio-economic barriers specific to coastal schools. Furthermore, while prior studies have examined digital infrastructure and technical readiness, fewer studies have explored the holistic challenges—including pedagogical, administrative, and socio-economic factors—faced by coastal educators. This study seeks to address these gaps by providing empirical insights into the lived experiences of teachers in Bachok, contributing to a more nuanced understanding of digitalization in marginalized educational settings.

Scope of the Study

This study aims to explore the experiences of teachers in coastal schools in Bachok, Kelantan, as they navigate

the digitalization of education. Given the limited research on digitalization in coastal schools, the findings will provide valuable insights for the Ministry of Education in designing relevant training programs for teachers and students in these areas. Understanding the unique challenges faced by coastal school educators will help policymakers develop targeted interventions that align with their specific needs (Sudarso, Keban, & Mas'udah, 2019; Nelson et al., 2025; Dai, 2025). At a broader level, the findings will contribute to national efforts to ensure equitable access to quality education, thereby helping bridge socio-economic disparities. From a human resource development (HRD) perspective, digitalizing education in economically disadvantaged coastal areas aligns with efforts to enhance human capital by equipping individuals with the knowledge and skills needed for improved socio-economic mobility

LITERATURE REVIEW

Digitalization in the school context

The Challenges associated with digitalization vary based on context. School administrators and teachers are directly involved in the process of digitalization in schools. A study by Damsa et al. (2021) in Norway classified teachers' responses into three categories: highly receptive teachers eager to embrace new technologies, moderately receptive teachers willing to adapt with some reservations, and resistant teachers reluctant to integrate digital tools into their teaching. In Sweden, school administrators view digitalization as a multifaceted challenge encompassing technical, pedagogical, administrative, and organizational aspects (Lindqvist & Pettersson, 2019). In Malaysia, research by Tohara (2021) at Universiti Utara Malaysia (UUM) found that while teachers have become more adept at using technology and online resources, their pedagogical approaches have remained largely unchanged.

School Administrators

The role of school administrators is crucial in ensuring the successful implementation of digitalization in education (Subban et al., 2020; Hamzah, Nasir, & Wahab, 2021; Lopez et al., 2022). When digitalization aligns with a school's broader vision and is actively championed by principals, its adoption is more effective (Subban et al., 2020). Additionally, administrators' ability to design relevant programs and understand school culture plays a vital role in supporting digital transformation (Lopez et al., 2022).

Teachers

In Malaysia, teachers generally have a positive attitude toward digitalization (Zainal & Zainuddin, 2020; Clement & Yunus, 2021; Sahrir et al., 2021; Ke & AlSaqqaf, 2022). However, despite this positive reception, many teachers require further support in ICT skills and digital classroom practices (Zainal & Zainuddin, 2020). Clement and Yunus (2021) found that even teachers in rural Limbang, Sarawak, embraced digitalization positively, though the actual implementation of digital tools in classrooms remains limited. Similar findings were reported in Sabah (Ke & AlSaqqaf, 2022). Teachers' readiness for digitalization depends largely on their exposure to technology and the level of institutional support they receive (Sahrir et al., 2021). Thus, knowing how teachers in different geographical and social settings respond to the process of digitalization in education is important

Socio economic factors

A key factor influencing digitalization in coastal schools is the socio-economic status of students' families. Most parents in these communities belong to the B40 group, referring to the bottom 40% of income earners in Malaysia, with a household income of less than RM4,850 per month (Department of Statistics Malaysia [DOSM], 2020). Their lower levels of education and financial constraints often limit access to digital resources. Insights from this study will assist the Ministry of Education in crafting comprehensive, context-sensitive strategies to support these communities.

Bachok, Kelantan, has been selected as the study location due to its status as one of Malaysia's twenty poorest districts, as recently highlighted by the Economic Minister (Aizat, 2023). Examining how teachers in one of Malaysia's most underprivileged coastal districts experience digitalization will provide a deeper understanding

of the systemic challenges they face.

Proposed Conceptual Model

The proposed conceptual Model for this study is adopted from the Digital Transformation Model (DT) which has been extensively used to describe and evaluate digital transformations which take place in business and industrial worlds. Gunsberg et al, (2018), used the model to describe and analyse transformations that take place in the field of education. Thus, this study will be adopting the DT model used by Gunsberg et al, (2018) as a framework in guiding the formation of questions for the interviews. There are six dimensions in the DT model as illustrated in Table 2.5 below

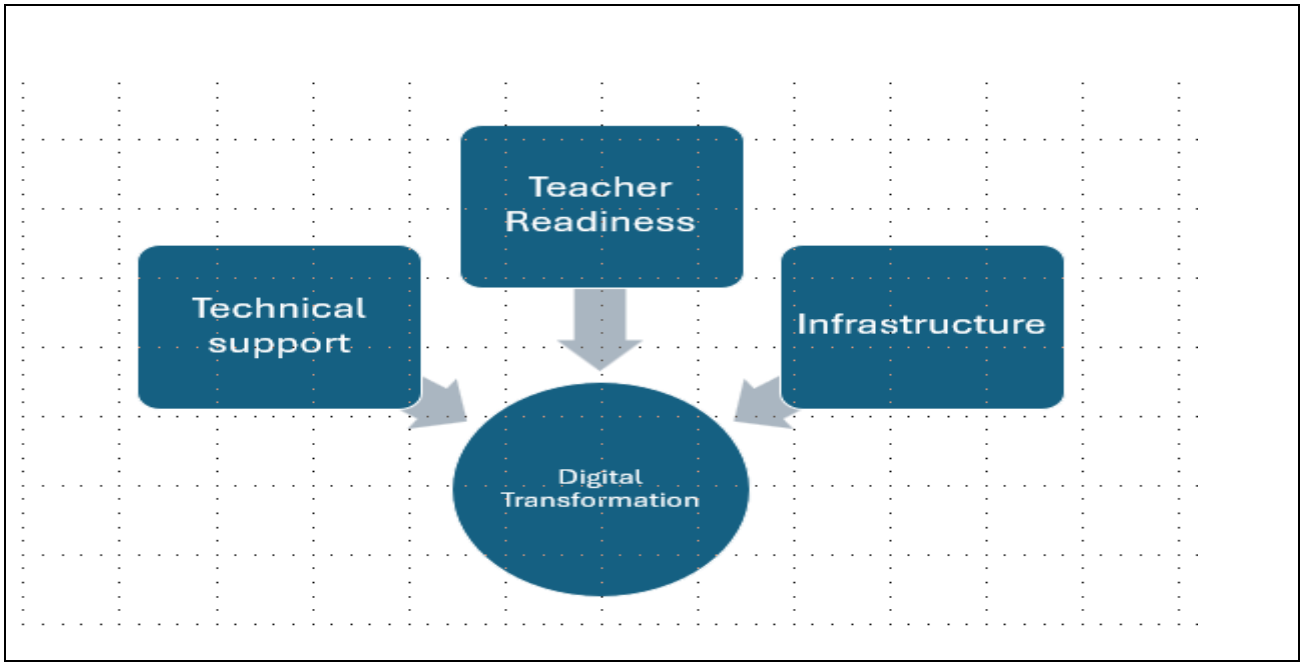
Table 2.5: Six dimensions of ACE DT Model

Dimensions	Details
Leadership and Management	How can leaders and managers catalyze digital transformation?
Innovation	How innovation propels the digital transformation process?
Strategy	How are strategies used to facilitate the digital transformation process?
Culture	How culture of any organization assists in digital transformation
Learning and Change	How can learning and change being affected by digital transformation?
Structure	How does the structure of an organization influence digital transformation?

Source: (Gunsberg, Callow, Ryan, Suthers, Baker & Richardson, 2018)

The conceptual model for this study is shown in Figure 2.5 below.

Figure 2.5 The conceptual Model of Digital Transformation in coastal schools



METHODOLOGY

This study employs a case study research design to examine how one coastal school in the district of Bachok experiences the process of digitalization in education. A case study approach is particularly suitable for exploring complex social phenomena within their real-life contexts, allowing for an in-depth understanding of the factors

influencing digitalization in a specific setting (Yin, 2018). By focusing on a single school, this research provides rich, contextualized insights that might not be captured through broader quantitative methods.

To achieve this, the study primarily relies on in-depth interviews as the main data collection method. According to Charmaz and Thornberg (2021), qualitative interviews offer an open-ended, in-depth exploration of participants lived experiences, perspectives, and challenges. This approach ensures a nuanced understanding of how teachers navigate the digitalization process.

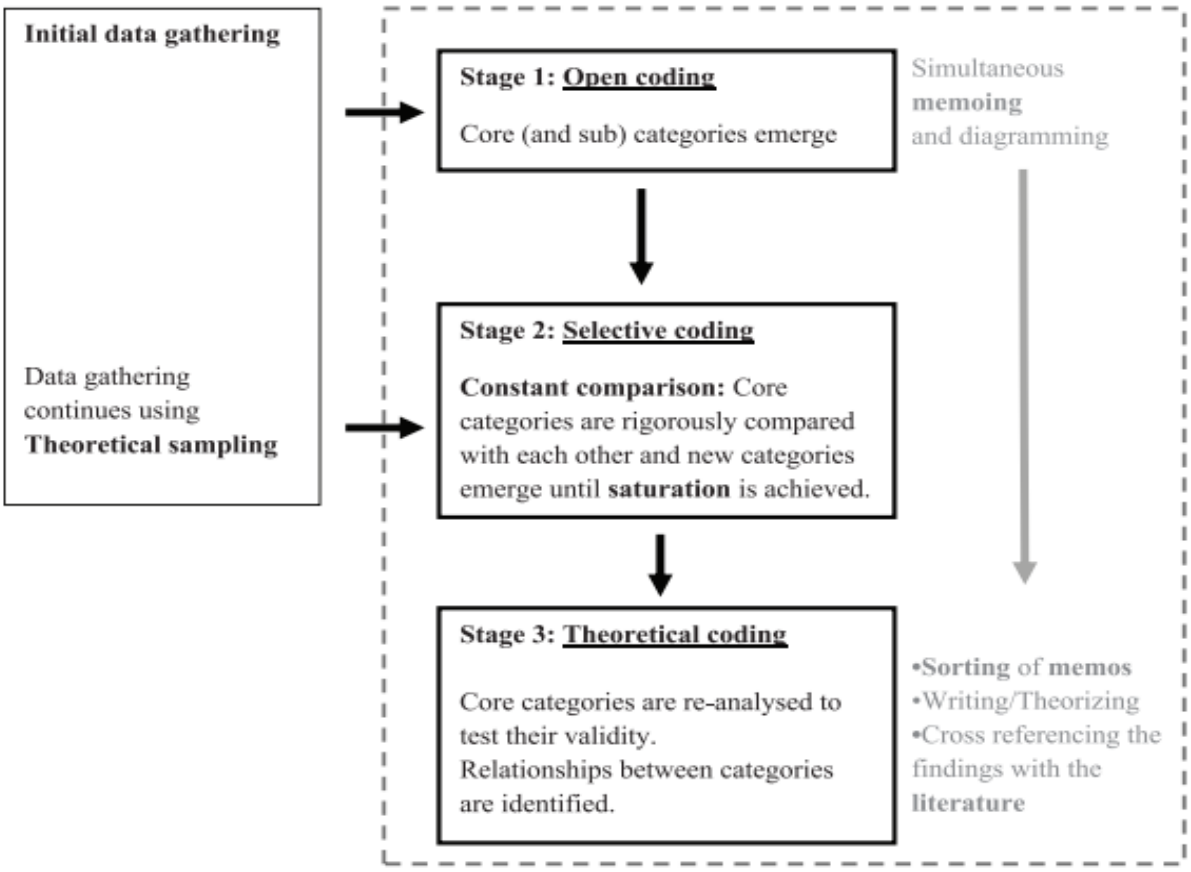
Research Design and Sampling

Constructivist Grounded Theory (CGT), pioneered by Charmaz, emphasizes the co-construction of knowledge between researcher and participants, recognizing the interpretive nature of data analysis (Charmaz & Thornberg, 2021). It offers a systematic yet flexible process to build theory from lived experiences and contextual meanings.

The process begins with open coding, where initial categories emerge from data such as interviews, observations, or documents. This is followed by selective coding, in which categories are compared, refined, and integrated through a constant comparison process until saturation is achieved. In the final stage, theoretical coding revisits and connects core categories, enabling the development of a coherent theoretical framework that explains both actions and meanings.

A central feature of this framework is theoretical sampling, where participants are selected not randomly but for their potential to contribute to emerging categories and concepts. This iterative process—driven by ongoing analysis—ensures that data collection continues until theoretical saturation is reached, when no new insights appear (Corbin & Strauss, 2015; Saunders et al., 2018). Throughout these stages, memoing and diagramming capture the researcher's reflections, guide analysis, and bridge the transition from coding to writing the final theory.

Figure 4: Constructivist Grounded Theory Framework



In this study, participants are four schoolteachers directly involved with the process of digitalization in schools.

Data Collection

Data was collected through semi-structured interviews and document analysis. The interviews allowed participants to articulate their experiences, motivations, and concerning the process of digitalization in a coastal school studied. This approach also enabled the researcher to follow emergent leads and explore unexpected insights raised by participants (Charmaz, 2014; Given, 2016). Interviews were conducted face-to-face and via online platforms, when necessary, with each lasting between 60–90 minutes. All interviews were audio-recorded with consent and transcribed verbatim.

Data Analysis

Data analysis followed the Constructivist Grounded Theory coding procedures outlined by Charmaz (2014, 2020). This involved three stages:

1. Initial Coding – line-by-line coding to identify significant actions, meanings, and processes in farmers' accounts.
2. Focused Coding – clustering the most significant and frequent initial codes into broader conceptual categories.
3. Theoretical Coding – integrating and refining categories into a coherent framework that explains farmers' perspectives on adopting chili harvesting robots.

Throughout the process, constant comparative analysis was employed, whereby data were continually compared across interviews to refine categories and develop emerging theory (Bryant & Charmaz, 2019). Memos were written throughout to capture analytic insights and guide further data collection.

Trustworthiness and Ethical Considerations

To enhance the trustworthiness of the study, several strategies were adopted. Credibility was ensured through member checking, where selected participants reviewed their transcripts and emerging interpretations (Lincoln & Guba, 1985; Nowell et al., 2017). Transferability was addressed by providing rich, thick descriptions of the research context. Dependability and confirmability were supported by maintaining an audit trail of analytic decisions and reflexive memos (Tracy, 2020).

Ethical approval was obtained from the host university's ethics committee. Participants were provided with an informed consent form explaining the study's purpose, voluntary participation, and confidentiality of their responses. Pseudonyms were used in reporting to protect participants' identities.

Analysis of Results

Challenges Faced by Teachers in the Implementation of Digitalization

Teachers at this coastal school were required to implement digital education in accordance with the Ministry of Education's (MOE) directives. Despite various challenges, they remained committed to fulfilling their responsibilities. Their responses reveal a mix of perseverance, frustration, and adaptation.

One of the primary concerns was the uncertainty surrounding the effectiveness of online teaching. Teachers expressed doubts about whether they were implementing digitalization correctly and whether students were truly benefiting from online learning. As one teacher explained:

We need to follow KPM (Ministry of Education) instructions to conduct online classes, although we are not sure whether we have implemented them correctly. We are also stressed because we don't know how much content our pupils actually absorb. [Teacher 1, 2023]

In addition to pedagogical uncertainties, technological constraints posed significant challenges. The lack of adequate devices and weak internet connectivity frequently disrupted lessons, making online teaching impractical. One teacher described the situation:

Apart from not having enough gadgets, weak internet is also a problem here. Sometimes, during peak hours, there was no internet at all. That's why, as the headmaster explained earlier, during the PKP (Restricted Movement), we opted for an offline approach—printing modules for parents to collect and use with their children. [Teacher 2, 2023]

For teachers who attempted to integrate digitalization in classroom settings, logistical and technical difficulties often overshadowed their efforts. One teacher illustrated the inefficiency caused by unreliable internet access:

It's so frustrating. I spend so much time planning lessons to expose my pupils to digital tools. But just getting them to the computer lab takes 15 minutes. Then, waiting for them to start the PCs takes another 15 minutes. By the time we're ready, we only have 30 minutes left—and most of the time, the internet is slow. So, it's frustrating. [Teacher 3, 2023]

Beyond classroom instruction, administrative tasks that required internet access also became a source of frustration. One teacher recounted how disruptions in connectivity led to wasted effort and emotional distress:

As the secretary of the language department, I often need to complete online data submissions. This is supposed to be done during our free time, but we have 30 teaching periods a week. Sometimes, just as I'm about to finish and post the content, the internet disconnects, and I have to start all over again. It's so frustrating. I get really angry—usually, I just switch off my laptop and go eat. [Teacher 4, 2023]

These responses highlight that while teachers diligently followed government directives, their lack of training and confidence in digital tools limited the effectiveness of online learning. Their perseverance is commendable, reflecting the dedication of government schoolteachers to policy implementation. However, their struggles raise concerns about whether digitalization efforts truly enhanced student learning. As noted by Gapsalamov et al. (2020), even key stakeholders involved in digital transformation often lack a full understanding of the process, leading to inefficiencies and gaps in implementation.

Psychological Readiness and Emotional Struggles in Adopting Digitalization

When interviewed, many teachers expressed that they never anticipated the need to embrace digitalization so soon. While they acknowledged that technology would eventually become a central aspect of education, they were unprepared for the abrupt shift. The sudden transition placed immense pressure on them, leading to feelings of stress, anxiety, and frustration.

One teacher candidly shared their emotional struggle:

Stressful, because we did not expect this (the need to embrace digitalization) to happen so soon. [Teacher 1, 2023]

For some, the situation was overwhelming, particularly due to the unexpected reactions from students and parents, which added to their distress:

Very troubling and stressful. We received all sorts of responses from pupils and parents, and we had never encountered this challenge before. [Teacher 2, 2023]

Teachers generally believed that with proper training and support, they could have navigated the transition more effectively. One teacher emphasized the importance of preparation:

With proper skills and training, I think we could perform better, and our pupils would enjoy the lessons more. [Teacher 3, 2023]

However, for some, digitalization remained an intimidating and exhausting process. One teacher described their ongoing struggle with adapting to digital tools:

Digitalization of teaching and learning is a nightmare for me… even until now. Frankly speaking, I have no

experience in this. Of course, I know basic things like using WhatsApp or Telegram, but if you ask me about online learning and all that… I am really bad at this. Not competent at all. All these years as a teacher, I have been so used to the traditional way of teaching… hahaha.[Teacher 4, 2023]

The findings suggest that while digitalization had already taken root in other educational settings, teachers in this school had never anticipated that they would need to adopt it so soon. Their lack of mental preparedness intensified their stress, making the transition more challenging. Mental readiness is a crucial component of effective training, as teachers require not only technical skills but also the confidence to navigate digital learning environments. This aligns with the findings of Sahrir et al. (2021), who argue that teachers will only be fully prepared to embrace digitalization when they receive adequate training and exposure to digital tools.

Generational and Socioeconomic Digital Divide in Education

The issue of digital disparity in education has been widely discussed, particularly in relation to infrastructure gaps between urban and rural areas (Surianshah, 2021; Darus, 2021). However, this study reveals that digital gaps also exist due to differences in knowledge and skills among schoolteachers. Specifically, younger teachers are generally more technologically proficient and adaptable, while senior teachers struggle to embrace digitalization, leading to increased stress and frustration.One teacher highlighted their personal struggle with digital tools, acknowledging that while they lacked competency, training could bridge the gap:

I think I am not competent in this (digital technology), just like my other friends. But with enough training, I think we can learn the skills. So far, I have never attended any courses on this (digital learning). Now, after COVID, I don't really use online learning or any other digital methods with my pupils. Younger teachers are obviously better.[Teacher 1, 2023]

The disparity in digital competency is particularly pronounced in schools where the majority of teachers are nearing retirement. Many senior teachers found the transition to digital learning overwhelming, with some even considering early retirement:

The majority of teachers in my school have more than 30 years of experience and are retiring in less than three years. When the Ministry of Education introduced online learning and digitalization initiatives, especially during the COVID-19 pandemic in 2021, many of them talked about taking early retirement. They admitted that learning new skills at their age was challenging. Young teachers are good. They are digital-savvy. Almost all of them know this (digital technology). They don’t fear it like us. But in coastal schools, there are not that many young teachers. Even in my school, we have less than 10.[Teacher 2, 2023]

The sentiment of being left behind was echoed by another teacher, who acknowledged the advantages younger teachers had in adapting to digitalization:

Young teachers are quick and skillful. We really envy them. Unlike us, who fear this (digitalization of education), they are very creative in using it. If we have one or two among us, we are thankful. They can assist us, the older generation. [Teacher 3, 2023]

For many senior teachers, digitalization was an unwelcome challenge that added stress and anxiety:

When we had to implement online learning for the first time, most teachers in my school—who are in their 50s—were really stressed and troubled. Many talked about early retirement because they knew they couldn’t cope with digitalization. Unlike young teachers, we believe that this (digital technology and digitalization of education) is no longer for us. [Teacher 4, 2023]

This study confirms that the digital divide is not only geographical but also generational. Young teachers,

having grown up in a more digitalized environment, are more confident and skilled in using technology, whereas senior teachers feel overwhelmed due to their lack of exposure and training. This aligns with findings by Judijanto et al. (2024), who reported disparities in teachers’ digital skills based on the age gap.

Socioeconomic Disparities in Digital Access Among Students

Beyond the generational gap among teachers, the study also highlights digital inequalities among students, particularly in relation to socioeconomic background. Pupils from wealthier families have greater access to online learning resources and co-curricular activities compared to their peers from lower-income households.

One teacher explained how economic constraints limited student participation in online activities:

It was always the same pupils—those who could afford it—who joined co-curricular activities online. For example, if we conducted online quizzes about sports or uniform bodies, the participation rate was less than 50% among Year 4, 5, and 6 pupils. And those who won were typically the same students who had access to gadgets at home. Those without gadgets faced challenges. To address this, we provided offline modules for academic subjects, but not all students returned them to school for marking. That was one of the issues during the last PKP (Movement Control Order)...[Teacher 3, 2023]

For some students, digital learning was completely inaccessible due to a lack of exposure to technology at home:

Most pupils in my school do not know much about digital technology or ICT. Coastal kids come from poor families. The majority have never used laptops or PCs at home—only at school. That's why we have to teach them all the basics. But honestly, even teachers like me are not very competent… hahaha.[Teacher 4, 2023]

These findings indicate that students from higher-income families enjoy a significant advantage in digital education, as they have better access to resources and tools needed for online learning. This economic divide further exacerbates learning disparities, as students from disadvantaged backgrounds struggle to keep up with digitalized education. The findings also highlight two key dimensions of the digital divide**:** a generational gap among teachers and a socioeconomic gap among students. Senior teachers face difficulties in adapting to digitalization due to a lack of prior exposure and training, while younger teachers are more confident and proficient in using technology. Meanwhile, students from low-income families have limited access to digital tools, reducing their participation in online learning and extracurricular activities. Addressing these disparities requires targeted interventions, including comprehensive digital training programs for teachers and equitable access to digital resources for students.

Challenges in Technical Support and Infrastructure

Teachers in coastal schools are accustomed to a structured system where technical and administrative support is provided at various levels—policy guidance from the Ministry of Education (MOE), training at the state level, and technical assistance from district education offices. However, when dealing with digitalization challenges, schools often struggle with a lack of immediate and on-site technical support.

No… but if we have problems, we can call someone. In every school, there is a person in charge of ICT, but they are not based in the school. They stay at the PKG (School Activity Centre) managed by the district education office. They come when called, but not immediately. I think it would be faster if each school had its own ICT assistant stationed within the school. – [Teacher 1, 2023]

Once, I brought my students to the computer lab for an online quiz. We couldn't do it in the classroom because the internet was unreliable. The lab had enough PCs for students to share in pairs, but we were delayed because the previous users had changed their password. We had to call the teacher in charge of the lab, and it took more than 15 minutes to resolve. After that, I rarely used the lab anymore…hahaha.– [Teacher 2, 2023]

Another challenge is the lack of trained ICT personnel in schools. Often, the responsibility of troubleshooting technical issues falls on teachers who have no formal ICT training.

The person in charge of ICT in my school has no ICT background—he just learned from experience. For example, we called Ustaz X to help repair a computer. He has some skills, but he learned them informally. Schools should not rely too much on untrained teachers for ICT support. They have their own teaching responsibilities. We need a properly trained technician, especially in coastal schools. – [Teacher 4, 2023]

Unlike conventional teaching challenges that can be addressed through standardized solutions, digitalization presents unique challenges for each school, requiring customized strategies. However, the MOE expects schools and teachers to adapt creatively to these challenges despite the lack of adequate technical support.

Emerging Challenges in Digitalized Education

The digitalization of education has introduced new challenges for teachers, particularly in managing student behavior related to technology use. Issues such as misuse of mobile phones, social media distractions**, a**nd inappropriate content sharing have become prevalent in schools.

Students often take selfies during class. One time, a student even made a TikTok video. When we investigated and spoke to him, we realized that if the teacher collects the phones after class, it's fine. But if the teacher forgets or doesn't notice, then problems arise. There was a case where a student uploaded an inappropriate picture on TikTok. He managed to avoid the teacher's notice, and then the teacher had to figure out how to resolve the issue. That's why allowing phones in school can have unintended consequences. – [Teacher 1, 2023]

A student once brought a phone to school without the teacher's knowledge. During a school camping trip, he took pictures of students making noise and shared them—not just in his class group but also in other class WhatsApp groups. From an outsider's perspective, it looked like the teacher wasn't in class, even though, at that time, classes were combined due to many students and teachers being away for the trip. – [Teacher 2, 2023]

Such incidents highlight the growing concerns over digital responsibility and ethics in schools. The integration of technology into education requires clear policies, stricter monitoring, and digital literacy programs to guide students on the appropriate use of digital tools. Without proper regulation, the very tools meant to enhance learning can become sources of distraction and misconduct

DISCUSSION

The findings of this study provide important insights into the challenges and opportunities of digitalization in coastal schools. Four key areas emerged from the data: Infrastructure and Connectivity, Teacher Readiness and Digital Competence, Technical Support, and Emerging Challenges in Digitalized Education. Each of these findings aligns with and extends previous literature on digital transformation in education.

Infrastructure and Connectivity: Persistent Gaps in Digital Access

The study found that many coastal schools continue to face issues related to poor internet connectivity and insufficient digital resources. These findings align with Selwyn (2021), who emphasized that digital equity remains a major barrier in technology adoption, particularly in remote and rural areas. Similarly, Timotheou et al. (2023) reported that inadequate knowledge and skills among users and infrastructure limits the effective use of technology in teaching and learning, often leading to inconsistent implementation of digital tools in classrooms.

Teachers in this study shared frustrations over weak internet signals and unreliable hardware, which disrupted lesson delivery. This is consistent with the work of van Deursen et al. (2021), who argued that digital access is not only about availability but also usability—if infrastructure is unreliable, digital learning cannot be sustained effectively. The study reinforces the call for targeted investment in digital infrastructure in rural schools to bridge the digital divide.

Teacher Readiness and Digital Competence: Balancing Confidence and Challenges

While some teachers demonstrated adaptability and enthusiasm in integrating technology, others lacked confidence and struggled with new digital tools. This mixed level of readiness is similar to findings by Howard et al. (2021), who noted that teachers' digital competencies vary significantly based on experience, training, and institutional support. Additionally, Long (2023) highlighted that while many teachers recognize the potential of digital tools, their adoption often depends on prior exposure and structured training.

One teacher in this study expressed frustration over the lack of structured digital training, stating that they had to rely on self-learning. This reflects the concerns raised by Punya and Mishra (2021), who found that teacher professional development in digital education is often inconsistent, leaving many educators underprepared for technology-integrated instruction. These findings suggest that continuous professional development programs tailored to specific school contexts are essential for successful digital adoption

Technical Support: The Need for Skilled Personnel

Teachers reported that while technical support is available, it is often insufficient or delayed. This is in line with research by Johnson et al. (2021), which found that the availability of ICT support personnel significantly influences teachers' willingness to use technology. A recurring concern in this study was the reliance on untrained personnel or other teachers for IT assistance, leading to inefficiencies.

The findings echo Stutchbury et al. (2025) and Afiyah (2025), who argued that without dedicated and trained ICT personnel, schools struggle with the maintenance and troubleshooting of digital tools, which in turn discourages technology use. This study suggests that embedding trained ICT personnel in each school could enhance the adoption and sustainability of digital learning.

Emerging Challenges in Digitalized Education: Managing Student Behavior

The integration of digital tools has introduced new challenges, particularly in student discipline and online behavior. Teachers in this study recounted incidents where students misused smartphones for social media, causing disruptions. This finding aligns with Livingstone and Blum-Ross (2019), who highlighted that digital education not only brings academic benefits but also creates new behavioral management issues, such as digital distractions and online misconduct.

Furthermore, Boyd and Ellison (2020) emphasized that students require structured digital citizenship education to navigate online spaces responsibly. Without proper guidelines, as seen in this study, teachers are often left to manage digital misbehaviour reactively rather than proactively. This underscores the need for clear school policies on digital device usage and the integration of digital ethics education into school curricula.

CONCLUSION

The process of digitalization in coastal schools as experienced by teachers and students exposes a unique finding. The transition toward digitalized education presents a multifaceted set of challenges that affect both teachers and students. Teachers often grapple with psychological readiness and emotional resistance, especially in the face of rapid technological change, while also contending with the need to develop digital competence and confidence. These challenges are further exacerbated by a generational and socioeconomic digital divide that impacts both teachers and students' access to technology and training. Socioeconomic disparities among students hinder equal access to digital resources, deepening educational inequalities.

Meanwhile, insufficient technical support and inadequate infrastructure create practical barriers, underscoring the urgent need for skilled personnel and sustained investment. As digital education continues to evolve, emerging issues such as managing student behaviours in online environments highlight the complexity of the digital classroom. Addressing these interconnected challenges requires a holistic approach—one that considers emotional, technical, and structural readiness—to ensure that digitalization enhances, rather than hinders, equitable and effective learning experiences

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