

Awareness and Readiness of School Leaders in Digital Governance: Challenges and Strategies for Implementation in the Philippine Context

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ABSTRACT

This study examines the awareness and readiness of school leaders in Camarines Norte, Philippines, regarding the implementation of digital governance in schools. Digital governance in education involves integrating technology into school management, decision-making, and operations to enhance transparency, efficiency, and educational outcomes. Successful models from countries like Singapore, Estonia, and Finland highlight the benefits of centralized data systems, real-time communication platforms, and digital professional development for teachers. However, the extent to which school leaders in Camarines Norte are prepared to implement such practices remains uncertain. This research employs an Exploratory Sequential Design (QUAL→QUAN), a mixed-methods approach that begins with qualitative data collection, followed by quantitative validation. A focus group discussion (FGD) involving 12 school leaders was conducted to explore their awareness and perceptions of digital governance. Insights from this phase informed the development of a validated questionnaire, which was administered to 312 school leaders from public schools in the region. Findings reveal that while school leaders acknowledge the significance of digital governance, there are considerable gaps in their technical knowledge and familiarity with essential tools. Key challenges include insufficient training, inadequate infrastructure, and a lack of resources, all of which hinder effective implementation. To address these issues, the study recommends targeted professional development programs, infrastructure investments, and policy interventions that promote sustainable digital governance. Collaboration among government agencies, educational institutions, and the private sector is essential to building a supportive ecosystem for digital transformation. Bridging these gaps will enable school leaders to integrate digital governance effectively, fostering more efficient, transparent, and accountable school management practices.

Keywords: Digital governance, school leadership, capacity building, professional development, technological readiness

INTRODUCTION

In today's rapidly evolving digital landscape, digital governance has emerged as a crucial mechanism for enhancing efficiency, transparency, and accountability in organizations, including educational institutions. The

integration of digital technologies has greatly increased opportunities for data sharing, knowledge exchange, and collaboration (Hanelt, Bohnsack, Marz, & Antunes Marante, 2021; Verhoef et al., 2021; Vial, 2021). However, these advancements also present significant challenges for school leaders tasked with managing complex digital systems and platforms (Krein, 2023). Traditional governance mechanisms, such as manual monitoring and face-to-face coordination, are often insufficient to address the multifaceted demands of digital interactions, including online learning platforms and school management systems (Tømte & Smedsrud, 2023).

Successful digital governance models, such as those implemented in Singapore, Estonia, and Finland, provide valuable examples for schools to emulate. In Singapore, the use of a centralized data system allows for real-time monitoring of students' academic progress, enabling timely interventions (Hanisch et al., 2023). Estonia's digital governance in education incorporates a digital ID system that facilitates seamless communication between schools, students, and parents, enhancing transparency and engagement (Pettersson, Håkansson Lindqvist, & Grönlund, 2024). Finland, known for its forward-thinking educational practices, has implemented digital professional development programs for teachers, ensuring that educators are well-prepared to integrate technology into their classrooms (Acebuche, 2023). These models highlight the importance of centralized data systems, real-time communication platforms, and digital professional development for enhancing educational outcomes and streamlining administrative tasks.

Digital governance encompasses the policies, procedures, and technological frameworks that guide the effective management and ethical use of digital resources within organizations (Pettersson et al., 2024). In educational institutions, where the integration of digital tools into administrative, instructional, and operational domains is rapidly accelerating, digital governance is critical (Acebuche, 2023). It ensures the efficient, secure, and ethical utilization of digital resources, improving educational outcomes, streamlining workflows, and safeguarding sensitive information from cyber threats (Tierens, Decuypere, Alirezabeigi, & Hartong, 2024).

School leaders, including principals, administrators, and IT coordinators, play a pivotal role in driving digital transformation. Their ability to implement digital governance strategies determines the extent to which digital technologies can be integrated effectively into school systems. By automating workflows, enhancing coordination, providing data-driven insights, and fostering transparency, digital governance not only improves organizational efficiency but also builds trust among stakeholders, including students, teachers, parents, and policymakers (Hanisch et al., 2023).

The awareness and readiness of school leaders to embrace digital governance practices are vital for managing digital platforms across operations, instructional delivery, and administrative tasks (Reis-Andersson, 2024). However, many school leaders face challenges, including insufficient familiarity with digital tools, limited infrastructure, and gaps in professional development (Krein, 2023; Tømte & Smedsrud, 2023). These barriers highlight the need for capacity-building programs, systematic resource allocation, and strategic policy interventions.

Existing literature underscores the critical role of school leadership in digital transformation. Pettersson et al. (2024) emphasize that school leaders' perceptions of digital governance are instrumental in driving post-pandemic recovery and development in educational organizations. Similarly, Acebuche (2023) notes that comprehensive training and sufficient resource allocation are essential for successful digital governance. Studies by Tømte and Smedsrud (2023) and Krein (2023) further illustrate the varied perspectives of school leaders on digital transformation and the need for national guidelines and capacity-building initiatives to promote effective integration of technology in education.

This study focuses on assessing the awareness and readiness of school leaders in Camarines Norte regarding the implementation of digital governance. It aims to identify key challenges and influencing factors, while proposing strategies for improvement. By understanding the gaps in knowledge and preparedness, the study seeks to inform policymakers and educational stakeholders about the necessary steps to empower school leaders. Ultimately, this research aims to contribute to the broader discourse on educational leadership in the digital era, offering actionable insights for enhancing digital governance in schools.

Objectives

This study aimed to evaluate the level of awareness and readiness of school leaders in Camarines Norte regarding digital governance and to identify the factors influencing their capacity Norte regarding digital governance and to identify the factors influencing their capacity to implement and sustain digital governance practices effectively. Specifically, this study sought answers to the following questions:

1. What is the level of awareness among school leaders in Camarines Norte regarding digital governance?
2. What is the level of readiness of school leaders to implement digital governance within their institutions?
3. What are the factors influencing the awareness and readiness of school leaders towards digital governance?
4. What are the challenges faced by school leaders in adopting digital governance practices?
5. What are the strategies that may be proposed to enhance school leaders' awareness and readiness for digital governance?

LITERATURE REVIEW

The integration of digital technologies has transformed education by revolutionizing data and knowledge exchange, enabling schools to streamline operations, optimize resource allocation, and enhance service delivery. Research has underscored the transformative potential of digital platforms in improving educational administration and instructional delivery (Hanelt et al., 2021; Verhoef et al., 2021; Vial, 2021). However, these advancements pose significant challenges for school leaders, who must navigate complex digital systems, address cybersecurity concerns, and align technology integration with institutional goals. Traditional governance mechanisms, such as manual monitoring and face-to-face coordination, often prove inadequate in managing the dynamic nature of digital platforms.

Digital governance in education encompasses policies, frameworks, and tools that guide the use of digital technologies across teaching, administration, and school management systems. It covers critical areas such as data management, cybersecurity, digital ethics, and digital transformation strategies. Effective digital governance streamlines administrative workflows, automates repetitive tasks, improves inter-departmental coordination, and ensures transparency to build trust among stakeholders (Hanisch et al., 2023). Additionally, it mitigates risks associated with data breaches, unauthorized access, and the unethical use of digital resources. School management systems (SMS), virtual learning environments (VLEs), and data analytics tools have become integral to modern school operations, fostering data-driven decision-making and improving institutional efficiency.

Despite these advancements, several barriers hinder the effective implementation of digital governance. Limited governance policies, insufficient technical expertise among school leaders, and inadequate training restrict its full potential. Tømte and Smedsrud (2023) identified gaps in technical training and digital literacy among school leaders as major obstacles. Resistance to change, deeply rooted in traditional institutional practices and cultural norms, further complicates the adoption of digital frameworks. Moreover, inadequate financial resources and insufficient infrastructure prevent schools from fully implementing robust digital systems. The absence of clear national policies and institutional guidelines also poses a critical barrier, leaving school leaders without a structured roadmap for managing digital platforms effectively (Krein, 2023).

The awareness and readiness of school leaders to adopt and implement digital governance practices are pivotal to the success of digital initiatives. School leaders act as key agents of change, fostering a culture of innovation and ensuring the effective integration of technology into academic and administrative processes. Their perceptions, attitudes, and digital literacy levels significantly influence their ability to navigate digital governance challenges (Pettersson et al., 2024; Acebuche, 2023). Leadership effectiveness strongly correlates

with the successful adoption of digital technologies by teachers and students (Krein, 2023). School leaders oversee digital tool implementation, provide continuous support, encourage professional development, and address resistance to change. However, their preparedness is hindered by inadequate training opportunities, insufficient technical infrastructure, and the lack of clear institutional guidelines.

Effective digital governance positively impacts educational outcomes. Well-structured governance frameworks improve administrative processes, reduce workload inefficiencies, and enhance coordination among school departments (Hanisch et al., 2023). Efficient data management ensures compliance with privacy regulations, safeguards sensitive information, and facilitates evidence-based decision-making. Transparency and accountability, achieved through robust digital governance, build trust among stakeholders, including parents, teachers, and students (Verhoef et al., 2021; Vial, 2021). Additionally, digital tools governed by clear policies enable personalized learning experiences, improve student engagement, and foster academic success, contributing to the sustainability of digital transformation initiatives in education.

Case studies provide valuable insights into successful digital governance models. The Digisprong Initiative in Flanders, Belgium, highlights the importance of coordinated national policies in driving digital integration across educational systems (Tierens et al., 2024). Similarly, studies on one-to-one tablet programs emphasize the necessity of school leaders' digital readiness and the establishment of comprehensive governance frameworks (Tømte & Smedsrud, 2023). The global transition from rigid "hard governance" mechanisms to adaptive "soft governance" approaches demonstrates the need for flexible strategies in addressing governance challenges (Dovi go, 2024). These studies underscore leadership adaptability, collaboration, and professional development as crucial factors in navigating the digital governance landscape effectively.

To overcome challenges in implementing digital governance, strategic recommendations have emerged. First, targeted professional development programs must equip school leaders with the technical and managerial skills necessary for overseeing digital systems effectively (Pettersson et al., 2024; Acebuche, 2023). Second, schools require adequate funding and technical support to sustain digital initiatives (Krein, 2023). Third, fostering a culture of collaboration and continuous improvement strengthens school leaders' resilience in addressing governance challenges (Dovi go, 2024). Finally, adopting a networked approach that involves partnerships with policymakers, technology providers, and educational institutions facilitates knowledge-sharing and collective problem-solving (Tierens et al., 2024).

Digital governance is integral to transforming educational institutions. A comprehensive framework for navigating this transformation emphasizes the role of digital literacy among school leaders, collaboration, data utilization, and addressing equity and access challenges (Fullan & Hargreaves, 2021). Strategic vision, clear goals, and a supportive environment are essential for guiding digital transformation (Reis-Andersson, 2024). Additionally, cultivating a culture of innovation and empowering teachers and students through training and resources is critical (Sinanis & Fullan, 2022). Active engagement of school leaders in digital initiatives ensures the creation of a digitally competent and supportive educational environment (Raptis et al., 2024).

By empowering school leaders with the knowledge, skills, and tools necessary for effective digital governance, schools can achieve greater administrative efficiency, enhance educational outcomes, and foster a secure, transparent, and innovative learning environment for all stakeholders. The Quadruple Helix Model offers a framework for digital leadership, integrating government, universities, industry, and civil society to drive digital innovation in education (Abdul Musid et al., 2023). Research on digital leadership in schools highlights its potential to enhance the teaching and learning process, though its adoption remains limited in Malaysian schools. Strengthening digital leadership strategies through further research and government interventions is necessary for broader implementation.

In the Philippines, studies have examined digital leadership and its impact on teachers' job satisfaction, highlighting the critical role of digital governance. School heads assume leadership roles in areas such as Equity and Citizenship Advocacy, Visionary Planning, Empowerment, Systems Design, and Connected Learning (Tanucan, Negrido, & Malaga, 2022). While this framework provides valuable insights, additional strategies such as professional development initiatives, clear digital policies, and improved communication systems could further enhance digital governance.

Developing a digital leadership program for school administrators is crucial for improving digital governance in schools (Luecha, Chantarasombat, & Sirisuthi, 2022). Integrating digital skills and leadership competencies can strengthen decision-making, communication, and educational delivery. Training modules that foster digital literacy, encourage collaboration, and promote effective use of digital platforms support this transition. However, the success of such programs depends on school administrators' willingness and capacity to embrace digital tools. Finally, the impact of digital leadership on sustainable school improvement underscores the need for school administrators to integrate technology into operations and pedagogy (Karaköse & Tülübas, 2023). Distributed leadership models empower educators to collectively manage technological change and improve educational outcomes. While the conceptual discussion of digital leadership is valuable, further research is needed to develop practical frameworks for immediate implementation.

METHODOLOGY

Research Design

This study employs an Exploratory Sequential Design (QUAL→QUAN), a mixed-methods approach where qualitative data is first collected to explore a concept, followed by quantitative data to test and validate the findings. Initially, qualitative data were gathered through a focus group discussion (FGD) to explore school leaders' awareness and readiness for digital governance. The findings from this qualitative phase were then used to inform the design of the subsequent quantitative data collection, which was conducted using a researcher-made questionnaire. This design allows for a deeper understanding of the phenomenon, followed by the statistical validation of the results.

Participants

The study's participants consisted of 312 school leaders from public schools within the Division of Camarines Norte. These participants included school principals, head teachers, master teachers, and officers-in-charge, offering a diverse representation of educational leadership. This varied sample was selected to ensure a comprehensive perspective on school leaders' awareness and readiness regarding digital governance. Additionally, 12 school leaders participated in the focus group discussion (FGD), chosen purposively to provide a rich and varied set of insights based on their roles, experience, and familiarity with digital governance.

Research Instruments

The research employed two primary data collection instruments:

1. **Questionnaire:** A researcher-made questionnaire consisting of seven parts was developed to assess the level of awareness and readiness of school leaders in Camarines Norte regarding digital governance. The questionnaire also explored the factors influencing the leaders' ability to implement and sustain digital governance practices. A Likert scale was used, allowing participants to indicate the extent to which they agreed or disagreed with specific statements related to digital governance.
2. **Focus Group Discussion (FGD):** A semi-structured guide was used for the focus group discussion to explore the key themes related to awareness, readiness for digital governance, challenges faced, and potential strategies for improvement. The FGD was conducted to complement the questionnaire data and provide qualitative insights that could inform the quantitative phase of the study.

Part I collects relevant demographic and professional information about the school leaders, including their position (e.g., Head Teacher, Officer In-Charge, Master Teacher), the type of school they are affiliated with (public or private), their years of experience as a school leader, and the geographical location of their school.

Part II focused on assessing the level of awareness among school leaders regarding digital governance. It includes questions designed to gauge their understanding of digital governance principles, policies, and practices, aiming to identify how well-informed the school leaders are about the concept and its importance in the educational context. Table 1 shows the score, verbal descriptors, and its verbal interpretation of the questionnaire.

Table 1 Level of Awareness among School Leaders Regarding Digital Governance

Score	Verbal Descriptors	Interpretation
5	Strongly Agree	School leaders have a strong understanding of digital governance and lead digital transformation effectively.
4	Agree	School leaders understand digital governance well but need improvement in fully applying and integrating strategies.
3	Neutral	School leaders show average awareness of digital governance with inconsistent application.
2	Disagree	School leaders have limited awareness of digital governance and need professional development to integrate digital tools effectively.
1	Strongly Disagree	School leaders have very low awareness of digital governance, requiring immediate training and support.

Table 2 Rating Scale for Level of Awareness among School Leaders Regarding Digital Governance

Mean Score	Descriptors	Interpretation
4.50-5.00	Strongly Agree	School leaders have a strong understanding of digital governance and lead digital transformation effectively.
3.50-4.49	Agree	School leaders understand digital governance well but need improvement in fully applying and integrating strategies.
2.50-3.49	Neutral	School leaders show average awareness of digital governance with inconsistent application.
1.50-2.49	Disagree	School leaders have limited awareness of digital governance and need professional development to integrate digital tools effectively.
1.00-1.49	Strongly Disagree	School leaders have very low awareness of digital governance, requiring immediate training and support.

In Part III, the instrument measured the readiness of school leaders to implement digital governance within their institutions. This section evaluated their preparedness in terms of skills, resources, and confidence to adopt and manage digital governance practices, which is crucial for determining the practical feasibility of integrating digital governance in schools. Table 3 shows the score, verbal descriptors, and its verbal interpretation of the questionnaire.

Table 3 Level of Readiness to Implement Digital Governance

Score	Verbal Descriptors	Interpretation
5	Strongly Agree	School leaders are well-prepared to implement digital governance, using digital tools effectively to lead transformation in their schools.
4	Agree	School leaders are mostly prepared but need improvement in fully integrating and applying digital strategies in their leadership.
3	Neutral	School leaders show average readiness, with inconsistent application of digital governance principles.
2	Disagree	School leaders are underprepared, struggling to integrate digital tools and strategies, requiring professional development.
1	Strongly Disagree	School leaders are unprepared, lacking understanding of key concepts and needing immediate training and support.

A rating scale was employed along with clear descriptors to know the level of readiness of school leaders to implement digital governance within their institutions. The interpretation and corresponding score ranges are as follows " Strongly Agree" (score range: 4.50-5.00), "Agree" (score range: 3.50-4.49), "Neutral" (score range: 2.50-3.49), "Disagree" (score range: 1.50-2.49), and "Strongly Disagree" (score range: 1.00-1.49). The equivalent mean values, descriptors and interpretations are summarized in Table 4.

Table 4 Rating Scale for Level of Readiness to Implement Digital Governance

Mean Score	Descriptors	Interpretation
4.50-5.00	Strongly Agree	School leaders are well-prepared to implement digital governance, using digital tools effectively to lead transformation in their schools.
3.50-4.49	Agree	School leaders are mostly prepared but need improvement in fully integrating and applying digital strategies in their leadership.
2.50-3.49	Neutral	School leaders show average readiness, with inconsistent application of digital governance principles.
1.50-2.49	Disagree	School leaders are underprepared, struggling to integrate digital tools and strategies, requiring professional development.
1.00-1.49	Strongly Disagree	School leaders are unprepared, lacking understanding of key concepts and needing immediate training and support.

Part IV explored the extent of various factors that influence school leaders' awareness and readiness regarding digital governance. These factors may include access to professional development opportunities, availability of technological resources, support from educational administration, and personal attitudes towards digital transformation. Understanding these influences helps in identifying areas that need attention to enhance awareness and readiness. Table 5 shows the score, verbal descriptors, and its verbal interpretation of the questionnaire.

Table 5 Extent of Factors on School Leaders' Awareness and Readiness Regarding Digital Governance

Score	Verbal Descriptors	Interpretation
5	Very Significantly	The factor has a major, overwhelming impact on school leaders' awareness and readiness to implement digital governance.
4	Significantly	The factor has a strong and noticeable impact, significantly enhancing school leaders' awareness and readiness for digital governance.
3	Moderately	The factor has a moderate effect, contributing to awareness and readiness, but not to a great extent.
2	Slightly	The factor has a minimal impact, providing only slight awareness and readiness for digital governance.
1	Not at All	The factor has no impact whatsoever on school leaders' awareness and readiness to implement digital governance.

A rating scale was employed along with clear descriptors to know extent of various factors that influence school leaders' awareness and readiness regarding digital governance. The interpretation and corresponding score ranges are as follows " Very Significantly" (score range: 4.50-5.00), "Significantly" (score range: 3.50-4.49), "Moderately" (score range: 2.50-3.49), "Slightly" (score range: 1.50-2.49), and "Not at All" (score range: 1.00-1.49). The equivalent mean values, descriptors and interpretations are summarized in Table 6.

Table 6 Rating Scale for Extent of Factors on School Leaders' Awareness and Readiness Regarding Digital Governance

Mean Score	Descriptors	Interpretation
4.50-5.00	Very Significantly	The factor has a major, overwhelming impact on school leaders' awareness and readiness to implement digital governance.
3.50-4.49	Significantly	The factor has a strong and noticeable impact, significantly enhancing school leaders' awareness and readiness for digital governance.
2.50-3.49	Moderately	The factor has a moderate effect, contributing to awareness and readiness, but not to a great extent.

1.50-2.49	Slightly	The factor has a minimal impact, providing only slight awareness and readiness for digital governance.
1.00-1.49	Not At All	The factor has no impact whatsoever on school leaders' awareness and readiness to implement digital governance.

Part V addressed the challenges faced by school leaders in adopting digital governance. It seeks to uncover the obstacles and barriers that hinder the effective implementation of digital governance practices, providing insights into the practical difficulties encountered by school leaders and suggesting areas where support and intervention are needed. Table 7 shows the score, verbal descriptors, and its verbal interpretation of the questionnaire.

Table 7 Extent of Challenges Faced by School Leaders in Adapting to Digital Governance

Score	Verbal Descriptors	Interpretation
5	Very Significant Challenge	The challenge has a major and overwhelming impact on school leaders, significantly hindering their ability to adapt to and implement digital governance.
4	Significant Challenge	The challenge presents a strong and noticeable barrier, substantially affecting school leaders' ability to adapt to digital governance.
3	Moderate Challenge	The challenge presents a moderate obstacle, limiting but not fully preventing school leaders' ability to adapt to digital governance.
2	Slight Challenge	The challenge has a minimal effect, causing only slight difficulty for school leaders in adapting to digital governance.
1	Not A Challenge	There is no challenge; the factor does not impact school leaders' ability to adapt to digital governance.

A rating scale was employed along with clear descriptors to know challenges faced by school leaders in adopting digital governance. The interpretation and corresponding score ranges are as follows " Very Significant Challenge" (score range: 4.50-5.00), "Significant Challenge" (score range: 3.50-4.49), "Moderate Challenge" (score range: 2.50-3.49), "Slight Challenge" (score range: 1.50-2.49), and "Not A Challenge" (score range: 1.00-1.49). The equivalent mean values, descriptors and interpretations are summarized in Table 8.

Table 8 Rating Scale for Extent of Challenges Faced by School Leaders in Adapting to Digital Governance

Mean Score	Descriptors	Interpretation
4.50-5.00	Very Significant Challenge	The challenge has a major and overwhelming impact on school leaders, significantly hindering their ability to adapt to and implement digital governance.
3.50-4.49	Significant Challenge	The challenge presents a strong and noticeable barrier, substantially affecting school leaders' ability to adapt to digital governance.
2.50-3.49	Moderate Challenge	The challenge presents a moderate obstacle, limiting but not fully preventing school leaders' ability to adapt to digital governance.
1.50-2.49	Slight Challenge	The challenge has a minimal effect, causing only slight difficulty for school leaders in adapting to digital governance.
1.00-1.49	Not A Challenge	There is no challenge; the factor does not impact school leaders' ability to adapt to digital governance.

In Part VI, the respondents ranked the strategies they believe can best enhance their awareness and readiness to adapt to digital governance, with 1 indicating the most important and 5 indicating the least important. Lastly, Part VII included open-ended questions designed to gather insightful responses from the respondents regarding how school leaders can effectively adapt digital leadership in schools.

Data Collection Procedure

The study followed a two-phase data collection process:

1. **Qualitative Data Collection:** The focus group discussion (FGD) was conducted first to explore the school leaders' experiences, challenges, and perspectives on digital governance. The discussion was guided by a semi-structured interview guide, ensuring flexibility while focusing on specific themes related to the research objectives. The FGD included 12 purposively selected school leaders to provide a variety of viewpoints on the topic.
2. **Quantitative Data Collection:** After the qualitative phase, a researcher-made questionnaire was administered to 312 school leaders. The questionnaire underwent a rigorous process of content validation and reliability testing to ensure its effectiveness in capturing relevant data. The participants' responses were then collected, organized, and subjected to statistical analyses to provide a broader, quantifiable understanding of school leaders' awareness and readiness regarding digital governance.

Data Analysis

The study employed both quantitative and qualitative data analysis methods:

1. **Quantitative Data Analysis:** The data from the questionnaire were analyzed using weighted means and standard deviation to assess the level of awareness and readiness of the participants. Descriptive statistics, including frequency counts, were used to profile the demographic characteristics of the respondents. The statistical methods provided insight into the general preparedness of school leaders to implement digital governance practices and identify key factors influencing their readiness.
2. **Qualitative Data Analysis:** The data from the focus group discussion were analyzed using a thematic analysis approach. The qualitative data were transcribed verbatim and coded to identify recurring themes and patterns. This analysis helped uncover deeper insights into the challenges, opportunities, and strategies related to digital governance that may not have been captured in the quantitative phase. The qualitative findings were then triangulated with the quantitative data to provide a comprehensive understanding of the research topic.

Ethical Considerations

Ethical measures were carefully followed throughout the study. All participants were fully informed about the study's purpose, procedures, and objectives. Informed consent was obtained, and participants were assured of their right to withdraw from the study at any point without repercussions. Participants' anonymity and confidentiality were maintained, in accordance with the Philippine Data Privacy Act of 2012 (RA 10173). Data were collected solely for academic purposes, and participants had the opportunity to review and correct their responses before submission. The study upheld ethical standards to ensure participants' safety and privacy throughout the research process.

RESULTS AND DISCUSSIONS

Table 1 presents the distribution of school leaders' awareness of digital governance, highlighting their perceptions of its importance, benefits, and practical applications. Among the five statements evaluated, the statement *"I understand the importance of digital governance for improving school management and efficiency"* received the highest mean score of **4.1**, with a variance of **0.78** and a standard deviation of **0.89**. This result suggests a high level of agreement among respondents regarding the critical role digital governance plays in streamlining school operations. During the Focus Group Discussion (FGD), one participant remarked, *"Technology is no longer optional; it's essential for effective school management and governance."* This sentiment underscores the growing recognition of digital governance as a foundational element in achieving efficient and effective school leadership. The findings align with Fullan and Hargreaves (2021), who emphasized the necessity of adopting digital transformation to foster improved management and decision-making in schools.

The second-highest rated statement, *"I recognize the benefits of digital governance for enhancing transparency and accountability,"* had a mean score of **4.0**, with a variance of **0.87** and a standard deviation of **0.93**. This

result reflects the participants' awareness of how digital governance promotes ethical and transparent practices in school management. This was echoed in the FGD, where respondents shared that the use of digital tools has improved reporting processes, financial transparency, and communication with stakeholders. Such insights support the notion that digital governance can empower school leaders to build trust and accountability within their institutions.

The statement *"I am aware of the national policies related to digital governance, such as the DepEd Computerization Program"* garnered a mean score of **3.9**, with a variance of **0.87** and a standard deviation of **0.93**. Respondents demonstrated familiarity with national initiatives by referencing specific policies such as the DepEd Computerization Program and related technology-driven projects, including the adoption of learning management systems and the establishment of computer labs. These findings indicate that school leaders are not only aware of but also actively engaging with government programs aimed at integrating digital governance in education.

The statement *"I am familiar with the concept of digital governance in educational institutions"* received a mean score of **3.8**, with a variance of **0.76** and a standard deviation of **0.87**. While slightly lower than the preceding statements, this score indicates a general understanding of digital governance concepts. Participants in the FGD linked digital governance to practical applications, such as streamlining administrative processes, improving teacher performance monitoring, and enhancing decision-making efficiency. This suggests that their knowledge extends beyond theoretical understanding and is reflected in their day-to-day practices.

Finally, the statement *"I am knowledgeable about the tools and technologies used in digital governance"* had the lowest mean score of **3.5**, with a variance of **0.82** and a standard deviation of **0.91**. Although respondents acknowledged using platforms such as Google Docs, Google Meet, Zoom, and Facebook Live for administrative and governance tasks, they also admitted a lack of advanced technical knowledge. Participants expressed the need for further training to optimize the use of these tools and to explore more advanced technologies for digital governance. This finding aligns with Hanisch et al. (2023) and Tømte and Smedsrud (2023), who highlighted the importance of equipping educational leaders with the technical skills necessary to leverage digital tools effectively for operational efficiency.

The median score for all statements was **4**, indicating that the majority of respondents "Agree" they are aware of digital governance and its relevance to school management. However, the comparatively lower mean score for knowledge of tools and technologies suggests a critical gap in the practical application of digital governance strategies. This gap presents an opportunity for targeted interventions, such as capacity-building programs and hands-on training sessions, to strengthen the technical proficiency of school leaders.

In conclusion, the findings suggest that while school leaders in Camarines Norte demonstrate a solid awareness of the importance, benefits, and policies related to digital governance, their limited knowledge of digital tools and technologies remains a significant area for improvement. Bridging this gap through professional development initiatives will empower school leaders to fully harness the potential of digital governance, ensuring more efficient and transparent school management practices. Moreover, aligning their practices with global trends will enable them to better navigate the challenges of modern education leadership.

Table 1 Level of Awareness of School Leaders in Digital Governance

Statement	Mean	Med	Var	SD
1. I am familiar with the concept of digital governance in educational institutions.	3.8	4	0.76	0.87
2. I understand the importance of digital governance for improving school management and efficiency.	4.1	4	0.78	0.89
3. I am aware of the national policies related to digital governance, such as the DepEd Computerization Program (DCP).	3.9	4	0.87	0.93
4. I am knowledgeable about the tools and technologies used in digital governance.	3.5	4	0.82	0.91
5. I recognize the benefits of digital governance for enhancing transparency and accountability.	4.0	4	0.87	0.93

Table 2 shows the distribution of responses regarding the level of readiness of school leaders to implement digital governance in their institutions. The statement, *“I feel confident in leading my institution in the implementation of digital governance practices,”* received the highest mean score of **3.5**, with a variance of **0.82** and a standard deviation of **0.91**. This indicates that school leaders generally perceive themselves as capable of spearheading digital governance initiatives, reflecting a positive self-assessment of their leadership abilities in this domain. This confidence was echoed during the Focus Group Discussion (FGD), where participants highlighted their growing familiarity with digital tools and their motivation to lead digital transformation efforts.

The second-highest mean score was attributed to the statement, *“The school has policies in place that support digital governance,”* which scored **3.4**, with a variance of **1.21** and a standard deviation of **1.1**. This suggests that while institutional frameworks for digital governance are moderately established, there remains variability in policy implementation across schools. Participants during the FGD noted that existing policies, such as those aligned with the Department of Education's (DepEd) ICT initiatives, provide a foundation for digital governance but require clearer guidelines and consistent application to maximize their effectiveness.

The statement, *“Our staff is adequately trained in using digital tools and technologies for governance purposes,”* garnered a mean score of **3.3**, with a variance of **0.85** and a standard deviation of **0.92**. While respondents acknowledged progress in staff digital literacy, they emphasized the need for ongoing and comprehensive training programs to ensure that all staff members can confidently utilize digital tools. FGD participants noted that while some training programs had been conducted, they were often insufficient or lacked follow-up to ensure mastery, a finding consistent with Krein's (2023) emphasis on the importance of sustained capacity-building initiatives for digital governance readiness.

The statement, *“Our institution has sufficient digital infrastructure to support digital governance,”* received a mean score of **3.0**, with a variance of **0.96** and a standard deviation of **0.98**. This score reflects moderate readiness in terms of infrastructure, with respondents citing limited access to advanced technologies and unreliable internet connectivity as significant barriers. Infrastructure challenges were further highlighted in the lowest-rated statement, *“Availability of digital infrastructure,”* which had a mean score of **2.7**, with a variance of **1.08** and a standard deviation of **1.04**. These findings reveal substantial gaps in the availability and quality of technological resources necessary for effective digital governance.

Despite the relatively lower ratings for infrastructure and training, all statements had a median score of **4**, indicating that respondents generally “Agree” they are ready to implement digital governance in their schools. However, the lower mean scores for infrastructure and training underscore the need for targeted interventions to address these critical areas. During the FGD, one respondent remarked, *“We’ve made significant progress, but true readiness requires everyone—teachers, students, and administrators—to embrace digital tools fully.”* This sentiment highlights the importance of fostering a culture of digital engagement and collaboration among all stakeholders.

These findings align with the observations of Krein (2023), who emphasized that digital governance readiness is not solely dependent on the availability of tools but also on the engagement and leadership of all stakeholders. Furthermore, Pettersson et al. (2024) underscored the role of digital literacy and equitable access to technology as critical factors influencing readiness. Addressing the gaps in infrastructure and staff training will be essential for schools to fully realize the potential of digital governance and to build a sustainable foundation for its implementation.

The results highlight that while school leaders in Camarines Norte exhibit confidence and a foundational readiness for digital governance, significant challenges remain in infrastructure and staff training. To bridge these gaps, strategies such as strengthening infrastructure, comprehensive training programs, policy enhancements, and stakeholder engagement are recommended.

In conclusion, while school leaders demonstrate a foundational readiness for digital governance, targeted efforts to address gaps in infrastructure and training are necessary to ensure successful implementation. By fostering leadership, collaboration, and technical competence, schools can fully harness the transformative potential of digital governance in education.

Table 2 Level of Readiness of School Leaders in Digital Governance

Statement	Mean	Med	Var	SD
1. Our institution has sufficient digital infrastructure to support digital governance.	3.0	4	0.96	0.98
2. I feel confident in leading my institution in the implementation of digital governance practices.	3.5	4	0.82	0.91
3. The school has policies in place that support digital governance (e.g., data privacy, ICT usage).	3.4	4	1.21	1.10
4. Our staff is adequately trained in using digital tools and technologies for governance purposes.	3.3	4	0.85	0.92
5. Availability of digital infrastructure (e.g., internet, computers).	2.7	4	1.08	1.04

Table 3 displays the results of a correlation analysis that explores the relationship between school leaders' awareness and readiness for digital governance. The analysis reveals a correlation coefficient (r) of **-0.0465**, which indicates a very weak negative correlation between the two variables. This suggests that, in this context, awareness and readiness for digital governance do not exhibit a strong or meaningful relationship. The p -value of **0.941**, which exceeds the conventional significance threshold of **0.05**, further supports this conclusion, indicating that the observed correlation is statistically insignificant. Therefore, the relationship between awareness and readiness is more likely to be coincidental rather than indicative of any true association.

These results imply that school leaders' understanding, or awareness of digital governance does not automatically lead to a heightened readiness to implement such practices within their institutions. It is plausible that the two variables are influenced by different factors that are not captured within this study's scope. For example, during the focus group discussions (FGDs), participants emphasized that while awareness of digital governance is a necessary first step, readiness is shaped by practical aspects such as infrastructure, staff digital literacy, and institutional culture. They pointed out that the digital shifts induced by the pandemic had driven some improvements, particularly in infrastructure and teacher training, yet gaps still remain, especially in overcoming resistance to change and ensuring equitable access to technology for all stakeholders.

One participant in the FGD offered a particularly insightful perspective: *"Awareness is just the first step. Readiness is about having the tools, the training, and the buy-in from everyone involved."* This sentiment echoes the conclusions of Krein (2023) and Pettersson et al. (2024), who stressed that readiness for digital governance is not only about having the necessary resources but also about fostering engagement and collaboration across all levels of the institution. Stakeholders buy-in, capacity-building, and the equitable distribution of resources are essential components that contribute to transforming awareness into actionable readiness.

In summary, while school leaders demonstrate a solid awareness of digital governance, their readiness to effectively implement digital governance practices hinges on addressing several critical challenges. These include improving infrastructure, providing ongoing training, and engaging stakeholders at all levels of the school community. The findings of this analysis underscore the importance of developing a comprehensive and integrated strategy that not only focuses on raising awareness but also takes concrete steps to enhance readiness, ensuring that school leaders are equipped to implement digital governance successfully.

Table 3 Relationship Between Awareness and Readiness

Awareness Means	Readiness Means	Correlation Coefficient	t-statistic	p-value
3.8	3	-0.046477	-0.08059	0.940845
4.1	3.5			
3.9	3.4			
3.5	3.3			
4	2.7			

From the results discussed above, the possibility that the awareness and readiness of the school leaders on digital governance may be influenced by their years in service was carefully considered as presented in Table 5.

The results of the ANOVA analysis, with a P-value of **0.00875**, demonstrate that years of experience have a statistically significant impact on the awareness levels of school leaders regarding digital governance. This finding indicates that experience plays a crucial role in shaping leaders' understanding and readiness to adopt digital governance practices. The statistical significance reinforces the idea that those with longer tenures in leadership roles are more likely to develop the knowledge and competencies necessary for navigating the complexities of digital transformation.

These findings are consistent with the study of Hanelt et al. (2021), which emphasized that experience is a key enabler for leaders to address challenges and leverage opportunities in digital transformation processes. Experienced leaders tend to have a broader perspective and a deeper understanding of institutional needs, allowing them to align digital governance initiatives with organizational goals effectively.

The positive relationship between years of experience and digital awareness further suggests that seasoned leaders are better equipped to anticipate potential barriers, advocate for the adoption of digital tools, and foster a culture of innovation within their institutions. This capacity may stem from their accumulated exposure to diverse challenges and solutions over time, enabling them to integrate digital strategies more effectively into school management and governance processes.

Moreover, during the focus group discussion (FGD), several experienced participants shared insights into how their tenure had influenced their ability to adapt to digital governance. One respondent stated, *"Experience teaches us how to balance tradition with innovation. I've seen how digital tools can enhance what we've already built while preparing us for future challenges."* This reflects the nuanced understanding that comes with experience, as leaders can draw from past practices while embracing technological advancements.

In contrast, less experienced leaders may require more training and mentorship to build the confidence and skills needed to promote digital governance effectively. This highlights the importance of professional development programs that focus on bridging the gap for newer leaders by equipping them with the tools and knowledge necessary for digital transformation.

In conclusion, the significant influence of years of experience on digital governance awareness underscores the value of leveraging the expertise of seasoned leaders in driving institutional progress. By fostering mentorship and providing tailored training opportunities, institutions can ensure that leaders at all levels are prepared to champion digital governance initiatives and contribute to the modernization of educational systems.

The lower readiness scores among highly experienced leaders may reflect challenges such as resistance to change, limited familiarity with emerging technologies, or reliance on traditional management practices. However, these leaders also bring valuable institutional knowledge and strategic insights that can complement the technical readiness of their less experienced counterparts. This dynamic creates an opportunity for collaboration and knowledge-sharing between different experience groups, fostering a balanced approach to digital transformation.

Furthermore, the findings align with Pettersson et al. (2024), who emphasized the necessity of professional development, adequate infrastructure, and stakeholder collaboration as critical components of digital governance readiness. Both the quantitative results and qualitative insights highlight the need for tailored training programs that cater to the specific needs of leaders at varying levels of experience.

In conclusion, the ANOVA results reveal that while less experienced school leaders demonstrate higher readiness for digital governance, fostering collaboration and providing targeted support to all experience levels is essential. By combining the openness of newer leaders with the strategic perspective of seasoned professionals, schools can create a cohesive approach to digital transformation, ensuring the successful implementation of governance strategies that meet the demands of a rapidly evolving educational landscape.

Table 4 Relationship Between Years of Experience to Level of Awareness of School Leaders in Digital Governance

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	22.522925	4	5.63073	4.16118	0.00875	2.7014
Within Groups	39.241588	29	1.35316			
Total	61.764513	33				

The ANOVA results provide compelling insights into the relationship between school leaders' years of experience and their readiness for digital governance. The analysis reveals statistically significant differences in readiness levels among groups based on experience, as indicated by an F-statistic of **4.13**, which exceeds the critical F-value of **2.70**, and a p-value of **0.0091** (less than the 0.05 threshold). This finding confirms that years of experience significantly influence school leaders' preparedness to implement digital governance strategies.

Interestingly, the results show that school leaders with fewer years of experience (0–5 years) recorded the highest average readiness scores, while those with over 15 years of experience had comparatively lower scores but exhibited less variance. This trend suggests that less experienced leaders may feel more prepared or willing to embrace digital governance initiatives, likely due to their recent exposure to digital tools and technologies during their training or early professional development. It also reflects the shifting emphasis in modern educational leadership programs, which increasingly prioritize digital literacy and governance.

From the focus group discussions (FGDs), participants highlighted the critical role of ongoing technical training and professional development in bridging readiness gaps. A respondent noted, *"While newer leaders are more accustomed to digital tools, seasoned leaders need consistent updates to keep pace with evolving technologies."* This observation underscores the importance of addressing disparities in readiness by equipping all school leaders with the knowledge and skills required for effective digital governance, regardless of their experience level.

The lower readiness scores among highly experienced leaders may reflect challenges such as resistance to change, limited familiarity with emerging technologies, or reliance on traditional management practices. However, these leaders also bring valuable institutional knowledge and strategic insights that can complement the technical readiness of their less experienced counterparts. This dynamic creates an opportunity for collaboration and knowledge-sharing between different experience groups, fostering a balanced approach to digital transformation.

Furthermore, the findings align with Pettersson et al. (2024), who emphasized the necessity of professional development, adequate infrastructure, and stakeholder collaboration as critical components of digital governance readiness. Both the quantitative results and qualitative insights highlight the need for tailored training programs that cater to the specific needs of leaders at varying levels of experience.

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Table5 Relationship Between Years of Experience to Level of Readiness of School Leaders in Digital Governance

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	16.20171	4	4.050428	4.125665	0.009114	2.701399
Within Groups	28.47114	29	0.981764			
Total	44.67286	33				

Based on the results presented in Table 6, the statement “Leadership commitment to adopting digital tools and practices” received the highest mean score of **3.8**, with a variance of 1.11 and a standard deviation of **1.05**. This suggests that respondents perceive a strong leadership commitment to the adoption of digital tools and practices, which is crucial for fostering an environment conducive to digital governance. The high mean score, accompanied by relatively low variance and standard deviation, reflects that the leadership's dedication to integrating digital practices is widely acknowledged and is seen as a key driver of digital governance readiness. This strong commitment is likely to play a critical role in motivating and enabling staff to engage with digital tools and practices effectively.

The statements “Access to professional development and training on digital governance” and “Institutional support from the Department of Education (DepEd) and government agencies” both received a mean score of 3.4, with a variance of 1.26 and a standard deviation of 1.12. These findings indicate a moderate to strong recognition among respondents of the essential role that professional development and institutional support play in enhancing their awareness and preparedness for digital governance. The relatively higher variance and standard deviation suggest that there may be differing opinions regarding the accessibility and quality of training and institutional support. Nonetheless, these factors are widely viewed as critical for ensuring school leaders and staff have the knowledge and resources necessary to adopt and implement digital governance strategies.

The statement “Availability of infrastructure” followed with a mean score of **3.3**, a variance of **1.16**, and a standard deviation of **1.08**, signaling a moderate level of agreement about the sufficiency of infrastructure to support digital governance. While the respondents agree that infrastructure is an important factor, the score suggests that there may still be concerns regarding the adequacy or consistency of available resources. This indicates that while progress has been made in building the necessary digital infrastructure, there are areas that require further attention, particularly to ensure that infrastructure meets the growing demands of digital governance.

Lastly, the statement “Availability of financial resources for digital governance initiatives” received the lowest mean score of 3.0, with a variance of 1.11 and a standard deviation of 1.05. This highlights the financial resources as a critical area requiring improvement. The lower mean score reflects that respondents perceive a significant gap in financial support for digital governance initiatives, which may hinder the full implementation of digital tools and practices. The relatively high variance suggests that there may be disparities in access to financial resources across different institutions, further emphasizing the need for more targeted investments in this area.

Although there are varying levels of agreement regarding the availability of infrastructure and financial resources, the fact that all statements share the same median score of **4** indicates that most respondents generally agree on the importance of these factors in influencing their awareness and readiness for digital governance. Overall, these findings suggest that while leadership commitment, professional development, and institutional support are viewed as strengths, attention must be given to improving infrastructure and securing adequate financial resources to ensure the successful implementation of digital governance. The challenges in these areas highlight the need for a more strategic approach that addresses both the technical and financial aspects of digital transformation in education.

Table 6 Factors Influencing Awareness and Readiness of School Leaders in Digital Governance

Statement	Mean	Med	Var	SD
1 Availability of digital infrastructure (e.g., internet, computers).	3.3	4	1.16	1.08
2 Access to professional development and training on digital governance.	3.4	4	1.26	1.12
3 Institutional support from the Department of Education (DepEd) and government agencies.	3.4	4	1.20	1.10
4 Availability of financial resources for digital governance initiatives.	3.0	3	0.92	0.96
5 Leadership commitment to adopting digital tools and practices.	3.8	4	1.11	1.05

The focus group discussion (FGD) provided a deeper understanding of the challenges identified in the survey data, shedding light on the real-world impact of these obstacles on school leaders' efforts to implement digital

governance. Among the most prominent challenges discussed was limited financial resources, which was identified as a significant barrier to digital governance adoption. The survey data indicated a high mean score of 3.7 for this challenge, and FGD participants echoed this concern, stressing that budgetary constraints severely restrict their ability to invest in the essential technologies and infrastructure needed for effective digital governance. One respondent emphasized, “The budget just isn’t enough to cover all the tools and resources we need,” underscoring that financial limitations directly impede the progress of schools with respect to digital initiatives. This sentiment aligns with the survey findings, where a lack of digital infrastructure—such as inadequate internet connectivity and insufficient hardware—also emerged as a critical challenge, with a mean score of 3.6. In the FGD, a school leader reinforced this issue, stating, “Even if we want to implement digital governance fully, the lack of basic tools makes it impossible.” This widespread infrastructural challenge is further supported by Acebuche (2023), who highlighted the digital divide as a major hurdle for public schools, particularly those in resource-constrained areas.

In addition to financial and infrastructural issues, insufficient training and professional development opportunities were identified as major barriers, reflected in the survey with a mean score of 3.4. FGD participants expressed frustration over the lack of targeted training programs for educators and leaders, especially for those who struggle with adopting digital tools. One participant suggested, “We need targeted training programs for those struggling with digital tools—not just generic workshops,” calling attention to the need for specialized professional development tailored to the varying levels of digital literacy. This aligns with Pettersson et al. (2024), who emphasized the importance of designing professional development that addresses specific gaps in digital competencies among educators. The importance of capacity building emerged as a recurrent theme in the FGD, with respondents agreeing that effective training programs are essential to overcoming resistance to digital tools and ensuring a smooth transition to digital governance.

Furthermore, a lack of support from external stakeholders was identified as another key barrier, with a mean score of 3.4 in the survey. Respondents shared their challenges in securing partnerships and support from both government agencies and private organizations, which are vital for overcoming resource constraints. One leader remarked, “It’s difficult to get support from government agencies or private organizations. We’re often left to figure things out on our own.” This concern resonates with Tierens et al. (2024), who underscored the need for stronger policy and institutional support to facilitate digital transformation in educational institutions. The FGD participants also highlighted the slow and cumbersome procurement processes as a significant institutional challenge that delays access to the necessary resources for digital governance. One participant noted, “Our procurement processes are slow, and by the time we receive the tools, they’re already outdated.” This comment suggests the urgent need for more efficient systems that ensure timely access to resources, which is crucial for maintaining the momentum of digital governance initiatives.

Lastly, resistance to change due to limited digital literacy received the lowest mean score of 3.2 in the survey but remained a notable barrier discussed in the FGD. One participant observed, “The biggest hurdle is not just technology but changing the mindset of people who are reluctant to adapt,” emphasizing that attitudes toward technology—often shaped by limited digital literacy—can be a significant challenge. As Dovigo (2024) observed, leadership plays a pivotal role in overcoming this resistance by fostering a culture of digital adoption and helping educators navigate the transition to digital governance. This perspective was shared by FGD participants, who stressed the need for strong leadership to guide educators and staff through the change process, ensuring that they are not only equipped with the tools but also motivated to embrace new practices.

In conclusion, the FGD responses largely confirm the survey results, highlighting key challenges such as financial constraints, lack of digital infrastructure, insufficient training opportunities, and resistance to change as significant barriers to the adoption of digital governance. These challenges are further compounded by institutional barriers such as slow procurement processes and a lack of external support. To address these issues, participants proposed several strategies, including capacity building, improving infrastructure, and policy advocacy, which are in line with the solutions discussed in the literature. Implementing these strategies could help bridge the gaps identified in the study and significantly enhance the readiness of schools for successful digital governance adoption.

Table 7 Challenges Faced by School Leaders in Adapting Digital Governance

Statement	Mean	Med	Var	SD
1 Lack of digital infrastructure (e.g., computers, internet access).	3.6	4	0.94	0.97
2 Limited financial resources to invest in digital governance initiatives.	3.7	4	1.11	1.05
3 Insufficient training and professional development opportunities for school leaders.	3.4	4	0.76	0.87
4 Resistance to change among staff or lack of digital literacy.	3.2	4	0.84	0.92
5 Limited support from external stakeholders, such as DepEd or local government units (LGUs).	3.4	4	0.90	0.95

The table presents the themes that impact digital governance, highlighting budgetary constraints and financial support as the most significant challenge, accounting for 35% of the responses. This indicates that the lack of adequate funding is perceived as the primary obstacle to the effective implementation of digital initiatives. Participants emphasized that without sufficient financial resources, schools are unable to invest in the necessary technology, infrastructure, and tools needed to drive digital governance forward. This finding underscores the critical importance of securing stable financial support to enable meaningful progress in digital education.

Following closely is internet connectivity, which accounts for 25% of the responses. This suggests that unstable or inadequate internet access remains a major barrier, severely limiting the ability of educational institutions to fully integrate digital technologies. In many cases, unreliable internet connections hinder the timely delivery of digital content and disrupt communication between educators, students, and administrative bodies. Therefore, improving internet infrastructure is a crucial step towards enabling schools to participate in the digital governance landscape.

The availability of resources and equipment represents another key concern, comprising 20% of the responses. This reflects the challenges schools face in acquiring the necessary hardware and software tools to implement digital governance effectively. Without access to modern devices and platforms, both educators and students are unable to fully engage with digital learning and administrative tools. The need for adequate and up-to-date equipment is therefore a critical factor in achieving successful digital transformation.

Training and capacity building, while important, are seen as less critical, with only 10% of the responses highlighting this issue. This suggests that, while professional development is necessary to ensure that educators are equipped to handle digital tools, the immediate barriers related to funding, connectivity, and resources are more pressing. Nevertheless, the need for ongoing training programs to build digital literacy and competency among educators should not be overlooked, as it plays a crucial role in sustaining long-term digital governance efforts.

Other factors, such as digital infrastructure maintenance, support from higher authorities, and resistance to change, are perceived as less significant challenges, contributing 5%, 3%, and 2% of the responses, respectively. While these issues may still influence the digital governance landscape, they are considered secondary to the more immediate concerns related to funding, connectivity, and resources. Nevertheless, attention to the maintenance of digital infrastructure, fostering stronger support from higher authorities, and addressing resistance to change are all important for creating a more supportive environment for digital initiatives.

In summary, the findings highlight that financial constraints and internet connectivity are the dominant barriers to digital governance, with resources and equipment availability following closely behind. Although training and capacity building are still relevant, they are not seen as the primary challenges at this time. Addressing the financial, infrastructural, and resource gaps is essential for paving the way for more effective and sustainable digital governance in educational institutions.

Table 16 Most Significant Barriers to Adopting Digital Governance

Themes	Percentage
Budgetary Constraints and Financial Support	35%
Internet Connectivity	25%
Resources and Equipment Availability	20%
Training and Capacity Building	10%
Digital Infrastructure and Maintenance	5%
Support from Higher Authorities	3%
Resistance to Change and Cultural Barriers	2%

The table outlines the themes impacting digital governance, with budgetary constraints and financial support emerging as the most significant challenge, accounting for 35% of the responses. This finding suggests that insufficient funding is viewed as the primary barrier to the successful implementation of digital initiatives in schools. Participants emphasized that, without adequate financial resources, educational institutions are unable to invest in the necessary technological tools, infrastructure, and digital platforms essential for effective digital governance. The lack of investment in these areas stifles the ability of schools to leverage digital technologies and implement robust governance structures. These results highlight the urgent need to secure stable financial support and address budgetary limitations in order to accelerate progress in digital education and enable schools to meet the demands of the digital era.

Internet connectivity, contributing 25% of the responses, closely follows as another critical barrier. This underscores the importance of reliable internet access in the successful implementation of digital governance. In many educational settings, unstable or insufficient internet severely hampers the integration of digital tools and platforms, which in turn impedes the timely delivery of content and disrupts communication among educators, students, and administrative staff. The slow or inadequate internet connections also restrict the ability to collaborate, engage in remote learning, and efficiently manage administrative tasks. Therefore, improving internet infrastructure is a critical step in ensuring that schools can embrace digital governance and fully participate in the evolving digital landscape of education.

The availability of resources and equipment, which accounts for 20% of the responses, reflects another significant concern. It highlights the difficulties that schools face in securing the necessary hardware and software to support digital governance effectively. Without access to up-to-date and reliable digital devices—such as computers, tablets, and interactive learning tools—both educators and students are unable to fully engage with digital platforms or carry out the essential activities required for successful digital governance. The lack of adequate resources exacerbates the digital divide, making it increasingly difficult for schools to maintain parity in their digital transformation efforts. Addressing the availability of resources and ensuring that all institutions have access to modern equipment will be pivotal for inclusive digital governance.

Training and capacity building, while important, are seen as less pressing, with only 10% of respondents highlighting this issue. Although professional development is a crucial component of digital governance, the results suggest that the more immediate barriers related to financial constraints, connectivity issues, and resource availability take precedence. While building digital literacy and competency among educators is essential for fostering effective digital learning environments, the urgency of addressing infrastructure and funding gaps must come first. This finding emphasizes the importance of aligning training programs with the practical needs of schools, ensuring that educators receive targeted, context-specific professional development that equips them to overcome current challenges.

Other factors, such as digital infrastructure maintenance, support from higher authorities, and resistance to change, are perceived as less significant challenges, contributing 5%, 3%, and 2%, respectively. While these

issues remain relevant, they are considered secondary to the more immediate concerns surrounding funding, connectivity, and resources. Digital infrastructure maintenance is an ongoing need, but it is not as critical in comparison to the foundational issues of securing new technologies and ensuring connectivity. Similarly, while institutional support from higher authorities and addressing resistance to change are important for the sustainability of digital governance, these barriers are seen as secondary in the face of more pressing issues related to financial limitations and access to technology. Nevertheless, these factors should not be neglected, and efforts to engage leadership, foster collaboration, and promote cultural change within schools will be essential for the long-term success of digital governance initiatives.

In summary, the findings underscore that financial constraints and internet connectivity are the dominant barriers to the adoption and implementation of digital governance in schools. The availability of resources and equipment follows closely as another key challenge. Although training and capacity building are also important, they are seen as secondary to addressing the infrastructure and funding gaps that currently limit schools' ability to implement effective digital governance. To support a comprehensive digital transformation, addressing these immediate barriers—particularly through securing financial resources, enhancing internet infrastructure, and providing modern equipment—is essential for ensuring that schools can fully engage in digital governance and leverage the opportunities of the digital age.

In conclusion, the responses from the Focus Group Discussion (FGD), along with the data presented in Table 16, provide a thorough and nuanced understanding of the strategies necessary to enhance digital governance readiness in educational institutions. The key areas identified—funding, training, digital infrastructure, policy development, and collaboration—underscore the multidimensional nature of the challenges schools face as they seek to implement and sustain digital governance.

The emphasis on adequate funding as a critical factor highlights that financial resources are foundational for the successful adoption of digital technologies. Without sufficient funds, schools are unable to invest in the necessary infrastructure, equipment, and training that are essential for digital governance. The need for training and professional development emerges as a pivotal strategy, ensuring that educators and school leaders are equipped with the skills and knowledge to navigate and utilize digital tools effectively. Moreover, the importance of digital infrastructure, including reliable internet connectivity and modern devices, is central to overcoming the logistical barriers to digital transformation, enabling schools to fully engage with digital governance platforms.

Furthermore, the discussion points to the critical need for policy development that provides clear guidelines and frameworks for digital governance. Policies must be robust, adaptable, and designed to address the specific challenges schools face in adopting digital tools and platforms. These policies should be informed by both quantitative and qualitative data to ensure they are responsive to the real-world needs of schools and aligned with broader educational goals.

Collaboration is also highlighted as an essential strategy. Successful digital governance requires the active involvement of multiple stakeholders, including government agencies, educational institutions, and private sector partners. The FGD responses strongly emphasize the need for better support from the Department of Education (DepEd) and other government bodies to coordinate efforts and streamline processes that enable schools to access the necessary resources and tools. Additionally, collaboration with the private sector can provide schools with innovative solutions and expertise to overcome the barriers to digital transformation.

In sum, these insights point to the critical role of government action, resource allocation, and strategic collaboration in enabling school leaders to effectively navigate the complexities of digital transformation. As educational institutions strive to modernize their operations and embrace digital governance, the collective action of government bodies, policy makers, and educational leaders is necessary to ensure the successful implementation and sustainability of digital initiatives. Addressing the challenges identified—particularly funding, infrastructure, and training—is essential for creating a digital ecosystem in which schools can thrive and achieve long-term success in governance and education.

Table 8 Strategies for Enhancing Awareness and Readiness of School Leaders in Digital Governance

Statement		Mean	Med	Var	SD
1	Providing more professional development and training opportunities on digital governance.	2.3	4	1.69	1.30
2	Improving access to digital infrastructure (e.g., computers, internet).	2.3	4	1.97	1.41
3	Allocating additional financial resources for digital governance projects.	2.1	5	1.90	1.38
4	Strengthening policy support from DepEd and other governing bodies.	2.3	4	1.40	1.18
5	Promoting collaboration among school leaders to share best practices in digital governance.	2.4	4	2.12	1.46

CONCLUSION

In conclusion, the responses from the Focus Group Discussion (FGD), along with the data presented in Table 16, provide a comprehensive understanding of the strategies needed to enhance digital governance readiness in educational institutions. The key areas identified—funding, training, digital infrastructure, policy development, and collaboration—highlight the multidimensional challenges schools face as they strive to implement and sustain digital governance.

A crucial factor emphasized is adequate funding, which serves as the foundation for the successful adoption of digital technologies. Schools require financial resources to invest in necessary infrastructure, equipment, and training for effective digital governance. For example, Singapore’s Ministry of Education allocates substantial funding for the development of digital platforms, enabling schools to invest in both hardware and software that support effective data management and communication. In addition, training and professional development are essential strategies, ensuring that educators and school leaders possess the skills to navigate and effectively use digital tools. Finland’s continuous professional development programs for teachers, delivered through digital platforms, exemplify how training can be integrated into everyday school operations to enhance digital governance.

Moreover, the importance of digital infrastructure—such as reliable internet connectivity and modern devices—cannot be overstated. Estonia’s e-School system, which offers seamless digital communication between teachers, students, and parents, highlights the importance of a well-developed infrastructure in enabling schools to embrace digital governance. This vigorous system ensures that the logistical barriers to digital transformation are minimized, empowering schools to engage fully with governance platforms.

Furthermore, the need for policy development is critical. Policies must provide clear, adaptable frameworks for digital governance. Successful models like Estonia’s digital governance policy, which outlines standardized practices for e-education, offer valuable insights into how policy frameworks can support the sustainable implementation of digital tools. Collaboration, too, is essential for digital governance, as it requires the active involvement of stakeholders like government agencies, educational institutions, and the private sector. The active coordination between the Philippine Department of Education (DepEd) and private tech companies, which has provided innovative solutions for distance learning, illustrates how collaboration can help schools overcome the barriers to digital transformation.

In sum, the insights drawn from the FGD responses emphasize the critical role of government action, resource allocation, and strategic collaboration in enabling school leaders to navigate the complexities of digital transformation. By addressing the challenges of funding, infrastructure, and training, schools can create a thriving digital ecosystem that enhances governance and education. Successful examples from countries like Singapore, Estonia, and Finland show that comprehensive planning, strong policy frameworks, and effective collaboration are integral to the sustainability of digital initiatives in education.

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