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Digital Leadership and School Management Capabilities of School Administrators and Teachers Digital Teaching Performance: Basis for Professional Development Program

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Abstract

This study aimed to evaluate the significance of school administrators' digital leadership and school management on teachers' digital teaching performance within the context of digital learning and innovation programs. The research delves into the demographic profiles, digital leadership qualities, digital work capabilities, and digital performance of administrators and teachers in the Schools Division Office of Caloocan. A quantitative Descriptive-Correlational research design was employed, utilizing purposive sampling to gather data from 452 respondents: 72 school administrators and 380 teachers. The respondents completed a Likert Scale-based survey to assess various aspects related to digital leadership, digital work capabilities, and digital performance. There were challenges noted in the following areas: budget constraints (3.43) and lack of organizational change management (2.67) were identified as primary barriers to embracing digital leadership and teaching.

The study underscored the importance of digital leadership and management in enhancing teachers' digital teaching performance. While administrators excel in certain aspects of digital leadership, there are evident areas for improvement. Demographic factors like age, sex, and teaching experience significantly influence perceptions of digital leadership and work capabilities. A proposed digital learning program, "IT LEAD for School Administrators," aims to address these gaps and promote innovative digital leadership skills among school administrators.

Keywords: Digital Leadership, School Management, Teachers' Digital Performance, Digital Learning, Innovation Program, Descriptive-Correlational Study, Schools Division Office of Caloocan.

INTRODUCTION

This chapter presents the introduction, background information of the study, the statement of the problem, hypothesis, literature of the study, scope and delimitation and significance of the study.

Background Information

The COVID-19 pandemic has overtaken the educational system with improvements to the teaching and learning process, professional development, communication, and administration, (Tanucan & Uytico, 2021). Hence, the teaching and learning process has become more challenging as a result of the sudden usage and integration of digital tools and platforms, particularly in nations with technical gaps. Notwithstanding all the problems and difficulties, learning and working go on, and everyone in school is

required to use the required technology and other tools for digital communication in their daily activities. The ineffectiveness of face-to-face instruction and the need to enhance school management and monitoring led to the adoption of digitalization as a solution (Babacan & Dogru, 2022).

In this case, school heads play a critical role. If they have any knowledge or skill gaps, they must fill them in order to be better prepared to implement digital transformation in schools (Aksal, 2015). In order to assist teachers and other stakeholders in utilizing digital tools and other technology platforms in their educational operations, they must also assume the role of more technologically savvy leadership (Karakose et al., 2021). Additionally, they must take on the role of digital leaders to impart the skills and knowledge required for a 21st-century education in order to fully utilize digital transformations in classrooms (Veguilla-Martinez et al., 2022). This circumstance sparked the conversation on digital leadership, particularly in light of the growing technological integration of administrative and educational processes. Digitalization is purposefully becoming prevalent in educational settings (Ainslee, 2018). Schools' vision for digitalization involves using a variety of online instructional platforms, digital textbooks, and digitalized administrative tasks, among many other initiatives. As long as digital and technological infrastructure and resources are prepared, this age of revolution lays the groundwork for a society where education is more available and accessible (Tanucan, 2019; Tanucan & Hernani, 2018). This shift has given rise to the idea of digital leadership, which can develop in a digital setting where technology-oriented skills enable efficient management and teamwork (Abbu & Gopalakrishna, 2021; Bresciani et al., 2021). Waldron (2021) defines digital leadership as a new management strategy that fosters and accelerates digital change within businesses in order to improve the adaptability, effectiveness, and efficiency of processes and transactions. This theory supports the claim made by De Araujo et al. in 2021 that "digital leadership" refers to a leader's capacity to create a perceptive vision for the use, adoption, and promotion of technology at work. It also demonstrates the capacity of leaders to create, oversee, direct, and use information and communications technology (ICT) for enhancing institutions (Chin, 2010). Furthermore, because it is a cross-hierarchical, team-oriented, and appropriate form of leadership, digital leadership can start lasting transformation (Trenerry et al., 2021). (Oberer & Erkollar, 2018). As a result, school administrators who possess digital leadership skills can direct their organizations toward digital transformation so that they can remain flexible and competitive in a social media and digital environment that is continuously evolving. In this circumstance, school administrators must be directed by a set of digital leadership standards so they may compare best practices and gain the necessary skills to harness digital transformation in their individual institutions. For the successful and long-lasting integration of technology in education for different groups (students, educators, coaches, and educational leaders), the International Society for Technology in Education (ISTE) has been doing research at the international level (ISTE, 2022). As evidenced by their studies that incorporated the idea, numerous researchers from various countries have recognized the ISTE criteria (e.g., Baek & Sung, 2020; Gomez et al., 2022; Kimm et al., 2020; Vucaj, 2020). ISTE's most recent criteria for educational leaders focus on five areas in particular: advocate for equity and citizenship; visionary planner; empowering leader; systems designer; and connected learner (ISTE, 2022). No matter where school leaders are on the journey to integrate and promote technology in education, these principles serve as a framework for the digital era of education. By embracing the standards established for school leaders, they would be better equipped

to define and carry out a radical change strategy to harness digital transformation in their institutions as opposed to merely digitizing their work and processes. Establishing guidelines for the use of technology in education would result in teaching and learning methods that are more innovative and effective in the twenty-first century (Sabetian et.al., 2022). Additionally, it would facilitate rapid-cycle evaluation of technology advantages in teaching, learning, and administrative tasks and assist school administrators in establishing expectations for digital use (Arinto et al., 2020). There are not many studies, though, that look at the digital leadership of school leaders using the most recent ISTE standards. Responding to this issue is one of the goals of this study. The Philippines' educational system is slowly transforming as a result of digitization. Education at all levels, from basic to tertiary, used a variety of technology-based teaching and learning techniques during the epidemic, ensuring the continuity of employees' and students' education. The Learning Continuity Plan (LCP) was specifically implemented at the elementary education level by the Department of Education (DepEd) (DepEd, 2020). The Council on Higher Education (CHED) strengthened higher education institutions' inherent academic freedom to choose the appropriate learning approach for tertiary-level studies (CHED, 2020). E-learning, remote learning, and other alternative delivery techniques have been included into education through these projects. With the establishment of several initiatives including DepEd Commons, DepEd TV, DepEd radio, DepEd learning management system, and DepEd mobile app, among others, the country is also starting to digitalize its educational procedures (Ponti, 2021; Hernando-Malipot, 2021). These programs have encouraged teachers to use digital platforms and other technologies in the classroom. Also, they have been crucial in enhancing the modular instruction implemented by public schools to improve students' learning in a variety of subject areas throughout the pandemic (Cho et al., 2021; Potane, 2022). As a result, ICT use in education is beginning to take center stage in the nation thanks to the Digital Rising Program, which provides classrooms, teachers, and students with access to online learning resources (Llego, 2020). Filipinos utilize the Internet and social media more than any other country in the world (Baclig, 2022), which is essential for the digital transformation of education.

In this study, the effect of school administrators' digital leadership abilities on teachers' effectiveness in digital instruction will be evaluated. The researcher intends to explore further into the digital leadership and teacher's digital teaching performance in order to provide an enhanced professional development program. This is essential to the researcher because, like other educators, he believes that school leaders will promote technological procedures whenever teachers shift to digital instruction. This will be accomplished through professional development training that is based on the results of this study and is anchored on the needs assessment.

However, teachers must be equipped with digital skills in order to adapt digital learning environment. E-learning designs are the exclusive technology-supported learning environments in today's educational settings for teaching a variety of skills, behaviors, and concepts to students of the new normal education. One of the technologies required to prepare for the unique demands of learners is the use of visual designs and animations. As a result, during the COVID-19 pandemic era, the usability of animation designs for educators and families has assumed important significance. Technology education helps students enhance their visual, hearing, reading, writing, social, and communication skills to make it easier for them to live independently and helps them become better guides. Individuals are able to acquire the desired knowledge more quickly, conveniently, and permanently as a result.

Baglama, et al. (2022) provided details on the accessibility and use of animation technology in the classroom in their study on the Analysis of Digital Leadership in School Management and Accessibility of Animation-Designed Game-Based Learning for the Sustainability of Education. They also make recommendations for the advantages of visual design and animation, which are assistive technologies, and they provide insights into how school administration is prepared for digital education.

While Hamzah et. al. (2021) emphasizes the effects of principals' digital leadership on teachers' digital teaching during the covid-19 pandemic. In their study, they explained that the most recent change to the educational system is the integration of digital technology, particularly in light of the COVID-19 epidemic. They identified the characteristics of principals' digital leadership that predict the level of teachers' digital teaching, the level of teachers' digital teaching practices, and the degree of principals' digital leadership demonstrated. The results of their study demonstrate that teachers' digital teaching practices and administrators' digital leadership are both at a high level. The two variables do have a moderately favorable link, though. Only digital citizenship was proven to be a reliable indicator of teachers' digital instruction by multiple regression. The results demonstrate that, despite the COVID-19 pandemic issue, the capacity to create and coordinate digital leadership programs is crucial and may aid in raising students' academic performance.

According to the above-mentioned studies' key themes, the researcher identified the relevance of digital teaching and digital management, as well as the role of the school in supporting digitized learning. The researcher analyzed a gap between the significance of digital leadership skills and school administrators' management capabilities. For this reason, the researcher would like to make a further investigation in order to highlight the relevance of these two variables as the reviewed study has given the researcher the indication that these two may serve as quality components of the digital learning and innovation program.

Literature and Studies

Digital Leadership

A leader is someone who lives by certain beliefs and principles. A leader should possess a variety of types of awareness, including self- and social awareness in addition to historical, logical distinction, discriminative capacity, and civic engagement awareness. New opportunities and problems for leadership that are difficult to meet by traditional leadership are emerging as a result of breakthroughs in digital technologies and the accelerated rate of digitalization in institutions. The decision-makers must adopt a digital mentality for the vital competencies of a digital leader to coincide with the institution's digital transformation and strategic goal. One of the most successful and in-demand competencies is entrepreneurial leadership, which places a special emphasis on recognizing "environmental, organizational, and follower-specific variables" for the achievement of organizational goals (Baglama et.al,2022).

Leaders become skilled at communicating and organizing information in innovative ways using digital technologies. It is not business as usual in the Fourth Industrial Revolution era. Crisis management was used throughout the epidemic in every aspect of life and business. Post-modern leadership is described as nimble, resonant, spiritual, social constructionist, and hybrid, in contrast to modern leadership styles, which can be categorized as authoritarian, democratic, transformational, and laissez-faire. The COVID-19 global pandemic fostered changes in leadership dynamics and gave rise to a new breed of performers who use digital tools (Krehl & Büttgen, 2022).

A significant increase in the use of mobile technologies and internet services is reported in Krehl & Büttgen (2022). This strengthens some demands, especially from the younger leadership who prioritize internet freedom. The potential to plan, adopt, and implement effective digital interventions that are permitted, acceptable, and required in modern workplaces was greatly increased for both official and informal leaders (EU, 2013). Although the internet has spread widely, millennials as digital leaders use social networking and synchronous real-time video to communicate, organize, and collaborate online. One of the essential components for the implementation of inclusive education is accessibility. To improve the standard of education for all students, it is essential to emphasize the benefits of technology (Hamzah et. al, 2021).

One of the essential components for the implementation of inclusive education is accessibility. To improve the standard of education for all students, it is essential to emphasize the benefits of technology. Recent research has been done to examine how technology can assist special education instruction (Hensellek,2020). Studies emphasize the value of animations and assistive technology in special education.

The study of Kunnari and Llomaki (2016) emphasizes how animations foster children's skill development, particularly inventiveness. Additionally, Brown et.al. (2022), illuminates the application of technology in education. Their research reveals that educators are interested in using augmented reality or virtual reality to increase their knowledge and improve education for everyone. Reference from Brown provides information on how mobile game development fits within the educational landscape. The significance of mobile applications in enhancing the teaching and learning process is shown by this study.

A game is a problem-solving activity that should be approached with a playful mindset. Brown et.al (2022) argues that all games share four characteristics that distinguish them from one another when the distinctions in genre and technological complexity are removed: a purpose, rules, feedback system, and voluntary involvement. Games are practical and efficient learning environments that foster the growth of transversal knowledge, conceptual comprehension, and action-directed learning in a nurturing setting (Wang et.al., 2022). To make games more accessible and inclusive, we must take action. In the views of Schwab (2022), he emphasizes that games enable players with deaf blindness to engage in meaningful social connections.

A collection of user-driven recommendations for improving the accessibility of digital games for players with various sensory capacities were presented in some studies. The COVID-19 pandemic clarified the role that digital technologies can play in education and its connections to teacher preparation programs, the adaptability of pedagogical procedures, and the diversity of approaches and available tools (Ünal, 2022). According to his study, playing video games for fun can be a useful teaching technique for practically all academic subjects, especially science and foreign languages. Digital educational games (DEGs) are an effective method of instruction, especially when used in conjunction with cooperative learning situations. Therefore, the role of teachers is crucial in this digital technology (Cockburn and Smith, 2021).

It is common knowledge that technological advancements have an impact on education and instructional methods. Education institutions have been obliged to undertake a digital transformation as a result of the ubiquity of information and communication technology in recent years in order to stay up with the technological era. The classic chalkboard has long ago been replaced in most schools with interactive whiteboards, making educational activities viable in almost all settings and under almost all circumstances (Cette, et.al.,2019).

Revised work definitions altered daily routines, and a need for economic value are only a few of the changes that are now occurring. Together, these reflect the main outcomes of this digital transition. The teaching process has been significantly impacted by technology's rapid development and modifications, which have changed how and how quickly knowledge may be obtained. The need for educational institutions to stay up with this trend of digital transformation is obvious given the significant changes that have been experienced in educational practices in this digital age, as well as in practically every other subject. The digital revolution of the industry has given rise to the technical tools that have become primarily employed in recent years and the sustainability of education under almost all circumstances (Karakose, 2021).

The leaders' vision has surely played a key role in the digital transformation of educational institutions. The effectiveness of digital transformation may be in large part gauged by the leadership's ability to implement a clear digital strategy while promoting an innovative work environment. Leaders must also be able to assess if certain digital techniques or technologies can actually bring about these improvements (Ruloff and Petko, 2022). Additionally, they must be able to comprehend which facets of the dominant culture will spur a more thorough kind of digital change. Ruloff and Petko (2022) stated in their conclusion that the world is undergoing a digital transition that affects almost every aspect of human existence, not just business. However, depending on their intentions for developing a viable digital economy based on their national agenda, governments throughout the world are at differing levels of digital transformation. Organizational leaders cannot separate themselves from this continuing dramatic transformation process brought on by the digital age (Ghavifekr & Wong, 2022).

As is well known, senior administration or executive management functions typically initiate change inside organizations, but for a transformation to be effective, leaders must be able to inspire their teams and successfully guide them toward the organization's objectives. True organizational digital transformation can only take place with leaders who can properly oversee the entire process (Alakoc, 2019).

The terms "industry 4.0" or "digital transformation" are frequently used to describe the era in which we live, and they continue to have an impact on all facets of contemporary life. Digital transformation is viewed as a process of change that, often, can only be accomplished via the use of technical aspects, particularly in the wake of Industry 4.0. Industry 4.0 is defined as an institution digitalizing all its work-related activities and procedures. It is also known as the digitalization of industry or the digital era (Ghavifekr & Wong, 2022).

This technological and scientific revolution has reduced human and machine interaction and made it independent due to the quick changes witnessed in the digital world. In this situation, in the era of Industry 4.0, organizations now need to provide information exchange between their business processes, machines, and employees, as well as obtain and analyze data on all their products (Ribble and Park, 2022). Additionally, they need to support the formation of an integrated network for the purpose of evaluating and improving performance in order to advance their business. With various skill sets, attitudes, expertise, and professional and personal experiences, digital leaders establish themselves apart from non-leaders in the industry. Digital leaders need to be agile, versatile, and passionate about learning new things. They should always urge their partners and followers to learn by looking for answers across the world (Kahyadi & Magda, 2020).

Digital leaders in education are those who can create direction, influence others, start sustainable change based on knowledge, and build relationships in order to foresee changes that are crucial to the future success of the school. This definition was provided by Sheninger (2020). The employment of efficient tactics to leverage digital data within a company to further its corporate objectives is known as digital leadership. In this way, institutional leadership and individual leadership may both make use of digital leadership. In other words, digital leadership is making substantial use of technology to enhance the wellbeing, circumstances, and quality of life of others. Digital leadership in education is the acceptance, adoption, and use of new technologies in order to turn schools into digital-age learning environments (Antonopolou, et.al.,2020).

The dimensions, pillars, standards, and competences of digital leadership have been the subject of several research that have been published in the literature. Sheninger (2019) included communication, public relations, branding, student participation/learning, professional growth/development, reinventing regions, and settings of earnings and opportunity as examples of the elements of digital leadership. Sheninger said that any educator or leader may start to utilize technology to transform professional practices, and that there are some parts of school culture that can be changed, particularly via the use of current technology, particularly social media. Sheninger has outlined the components of digital leadership in terms of five dimensions, including visionary leadership, a learning culture for the digital age, excellence in professional practices, systemic improvement, and digital citizenship.

In this view, school administrators' goals are to build and lead a shared vision for the institution's greatness, to foster innovation, the development of professional learning environments, and the responsible use of information technology. Because of our reliance on technology and the modern era we live in, leadership techniques must change in order to build schools that can accommodate the newest technological advancements. It is crucial for administrators to have the right leadership traits and to be able to support the institution's staff members through the transformation process in order to increase the effectiveness of educational organizations. The most crucial duty for today's school administrators is to develop students who can adapt to the digital era. As a result, school administrators' digital leadership responsibilities are increasingly recognized as a crucial factor (Couros, 2021).

The primary goal of leaders is to help people overcome challenges and barriers by pointing them in the correct path. It became critical that educators at all levels and educational leaders have strong digital skills during the COVID-19 epidemic. In order to direct the digital growth inside their schools, to offer suitable guidance, and to encourage the right use of technology within the classroom, administrators should first address any gaps in their own technical knowledge and abilities (Gabriel et.al., 2022).

The Education Information Network (EBA), a nationally recognized educational network for digital information, was created and put into use in Turkey. EBA provides all the necessary course materials in a user-friendly online setting for instructors and students. It may be claimed that the area of education has undergone a digital transition in the digital era, both in terms of learning environments and information systems. The fourth industrial revolution has caused a transition in educational institutions as well (Industry 4.0). Information systems are employed in educational activities, school administration procedures, documentation, as well as for financial and spending transactions, it is stressed in this context (Mok, 2019).

Globally, educational activities invariably have sporadic interruptions for diverse causes or are carried out using different methodologies, all with differing degrees of

effectiveness. This viewpoint suggests that there are more factors driving digitalization in education than just the current state of technological advancement. For instance, global climatic circumstances, natural catastrophes, civil upheaval, or conflict, as well as health-related occurrences like the COVID-19 pandemic, can all seriously impair educational delivery (Hussin, 2018).

The World Health Organization's mitigation strategy of social distancing, which was implemented on a worldwide scale to stop the spread of COVID-19, compelled educational institutions at all levels to immediately lock their doors to face-to-face classroom-based instruction. Millions of students worldwide were impacted by the sudden and broad suspension of traditional teaching and learning techniques as a result of this action (Gabriel et.al., 2022). Nearly everywhere, even in many wealthy and developing nations, face-to-face education was essentially put on hold by COVID-19. Many nations made an effort to address this issue during the early stages of the epidemic by providing various emergency online distance education programs (McGreal & Olcott, 2022).

Social distance was used in teaching and learning activities as one of the most efficient techniques to stop the transmission of such a virus, and educational institutions moved tuition to different online settings including Zoom, Moodle, Skype, and Panopto (Reimers, 2022). According to him, it became clear that teachers and administrators must use digital tools in the classroom through the COVID-19 pandemic process. However, school administrators had to demonstrate strong leadership about the efficient control of digital technology usage inside their institution throughout the troublesome and challenging era of the pandemic.

One of the most important challenges encountered by educational administrators was how to use the available technology to enhance learning and develop pedagogical methods in the (virtual) classroom. Even before the pandemic, the digital age's technical advancements had compelled many schooling systems to adopt cutting-edge technology in the classroom and make the corresponding alterations to pedagogical procedures and course curricula. Teachers and children may both benefit from professional digital learning opportunities and support for school administrators as digital leaders. It is crucial for school administrators to develop the essential knowledge and abilities in order to lead effectively in the area of technology, in addition to their many other duties (Navaridas-Nalda, et.al.,2020).

For school administrators to embrace digital leadership and comprehend the digital learning abilities that must be integrated into the working procedures used by their teaching staff, several sorts of training may be required. In fact, school administrators frequently take the initiative to learn how to use technology on their own. They do this by planning for the professional development of their teachers in terms of technology use and by using digital technology to carry out their responsibilities for school management and digital leadership (Yirci & Papadakis, 2021).

For the implementation process to be successful, teachers must have access to professional learning opportunities that align with the digital leadership vision. Through chances for ongoing, regular, and improved professional development, educators and administrators may achieve the technical proficiency and self-assurance required to apply new digital literacies. The education industry has been inspired to rethink digital leadership as a result of transformations that come with digital density and management density. In order to boost the effectiveness of the company by directing its personnel through times of transition and change, administrators in educational institutions need to possess a particular set of leadership qualities. This was notably evident during the

COVID-19-induced crisis, when school administrators were required to embrace and demonstrate digital leadership primarily via self-improvement (Lander, 2020).

Following the hasty choices made by local and national governments worldwide to close all schools to in-person instruction because of the COVID-19 epidemic, school administrators were confronted with an exceptional educational situation. Although there have been many studies published in the literature about leadership during crises, there is a void in the literature discussing the digital leadership strategies used by school principals during the COVID-19 epidemic. In the continuing pandemic, where information and communication technologies are still heavily employed in educational practices, it is believed that investigating teachers' opinions and experiences of their principals' digital leadership responsibilities would add to the pertinent literature (Ehlers, 2020).

School Capability to Innovate

A school is a challenging object to study because it has multiple administrative levels, from the level of national policy to classrooms, a variety of actors, including teachers, students, and parents inside the school as well as parents and local school administrators outside, and seemingly conflicting goals, like ensuring that students have the necessary competence levels for the future while also carrying on societal traditions and history. The theoretical foundation for the current study is broad due to the complexity of a school as a research object and includes studies on school innovation, school improvement, pedagogical practices (particularly the traditions of collaborative knowledge creation), and studies on the use of digital technologies in education (Konstantinidou & Scherer, 2022).

The relationship to societal objectives is crucial for a school; it creates the exterior framework and resources for schools, which undoubtedly have a significant impact (Graham et. al, 2021), but it is up to the principal and the teachers to improve a specific school from the inside out. Due to this, the current study's emphasis is on the components and procedures within specific schools while also taking into account external variables and stakeholders. It is practical to exclude external administration from the study's methodology because we aim to develop a model that schools may use to reflect on and enhance the procedures that they have the power to alter on their own (Shen, et.al.,2022).

Although it is uncommon for a single school to have an impact on decisions made at the highest levels of administration, schools are always given some autonomy to alter how teachers and students work. Atesgoz and Sak (2021) emphasized that educational researchers should be clear about the level of phenomena and the primary unit of analysis that the investigation is focusing on, but they should also be aware of the influence of the phenomena at upper and lower levels (for example, administrative decisions made at the municipal level or the personal motivations of specific teachers). Yakubova et. al. (2022). examined specific administrators and teachers and used the information to draw conclusions about schools. This was comparable to the work Çubukçu, et al. (2021) did when they looked into educational advances. The current study concentrates on classroom and school-level practices through interviews with people (teachers and principals), observation of instructional techniques, and the administration of surveys to both teachers and students. We assume that there is a significant and crucial interaction between the various levels; this is a key premise for the research.

The teachers who design an educational innovation determine whether it is successful or not (Martinez, et.al, 2022). Every important shift has a source of innovations in

practice that can be traced back to individual insights and initiatives as well as group discussions and actions that resulted in the changes (Keimara et. al, 2021). In their study, Munojat et.al (2022) discovered that informal professional and interpersonal interactions as well as teacher communities were the most effective spaces for learning and creativity. The experience of social support from coworkers and the supervisor, as well as a dynamic environment for creativity, defined teachers' motivation to strive for change and helped to frame their positive self-image.

Additionally, it established the social norm that innovative work was valued. Competence, impact, responsibility for change, incentive for change, supervisor support, participatory safety, a supportive environment, and job complexity were a few factors that encouraged innovative work behavior (Yakubova et. al., 2022). Additionally, experiments in practice and teacher learning go hand in hand in studies of teachers' learning in innovation projects (Souza et. al, 2022). In contrast to organized learning, Graham et. al, (2021), found that informal learning, particularly peer-to-peer collaboration and project teamwork, produced less favorable outcomes. According to Reimers (2022), the problem for schools (in the UK) appears to be reinforcing and putting into practice the principles of learning, taking calculated risks, critical introspection, experimentation, and innovation at all levels of the school organization. Supporting teachers' autonomy, competence, and collegiality encourages them to adapt their teaching methods. These circumstances for innovation in organizations are similar to those of learning communities (OECD 2015). The studies offered here serve as the foundation for the elements of the school's vision as well as pedagogical collaboration, exchange of knowledge, and development practices (in the practices of the teaching community).

School Capability to Embrace Digital World

(Ribble and Park, 2022) have offered two alternative explanations for the transformation of educational practices related to ICT. The first is a "slow revolution" and support for current practices, in which small changes add up over time to produce a slow-motion transformation towards new ways of working. No changes are made to the learning material or pedagogical techniques; only routines are changed (Benitez, et.al,2022). This justification is based on the idea that there is a lag between the creation of new technology, its adoption, and the gradual diffusion of its benefits throughout society. This justification claims that technology adoption is an unavoidable outcome that will happen regardless. The second explanation by Benitez et.al. (2022), "active transformation," aims to explain how teacher-centered practices are maintained. Teachers and the school develop plans and decisions on how technology should be used to best address the unique difficulties the school faces. The curriculum's processes and/or content will change, and these changes would not have been possible without the use of digital technology.

Theoretical Framework

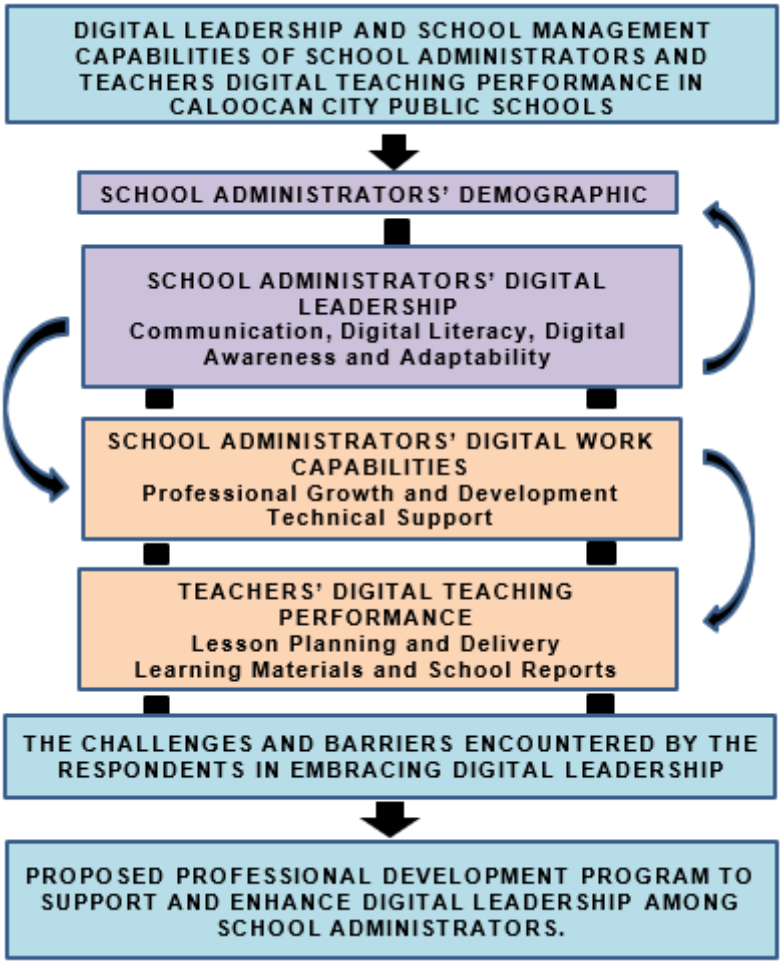
This study expands on Blanchard and Hersey's initial idea and is grounded in Kenneth Blanchard's Situational Leadership Theory. According to the Hersey-Blanchard Model, no one leadership style is superior to another. The concept advises leaders to adapt their methods to individuals they lead and their skills rather than concentrating on workplace issues. The Needs Theory will serve as the foundation for the training that will be given to teachers and school administrators. According to this paradigm, effective leadership is relevant to both the work and the connection. It is a flexible, adaptive style in which leaders are urged to think first about their followers—individuals or a team—then think

about the variables affecting the workplace before deciding how they will lead. By doing this, their success is guaranteed.

The study will make use of the theory's Competence and Commitment premises. The developmental level is determined by everyone's level of competence and commitment. These levels include:

- Enthusiastic beginner (D1): High commitment, low competence;
- Disillusioned learner (D2): Some competence, but setbacks have led to low commitment;
- Capable but cautious performer (D3): Competence is growing, but the level of commitment varies;
- Self-reliant achiever (D4): High competence and commitment.

The conceptual paradigm below served as the study's guiding principle. As the foundation for professional development programs, the goal of this study is to assess the effectiveness of school administrators' school management and digital leadership abilities. The study ascertained the respondents' communication, digital literacy, digital awareness, and adaptability abilities in the field of digital leadership. After identifying these sub-variables, the researcher collected data to determine how the school management skills of school administrators impact the respondents' digital leadership abilities in terms of technical support and training. In order to develop a proposed professional development program, the researcher will examine the significant relationship between digital leadership skills and the school management abilities of school administrators.



Statement of the Problem

The purpose of this study is to evaluate the significance of school administrators' school management and digital leadership to the teachers digital teaching performance as a basis for digital learning and innovation program. This research specifically aims to address the following research questions:

1. What is the demographic profile of the school administrators and teacher-respondents in terms of:
   1.1 Age;
   1.2 Sex; and
   1.3 years of admin experience?
2. What are the digital leadership of the administrators as assessed by the teacher-respondents in terms of;
   2.1 Communication;
   2.2 digital literacy; and
   2.3 digital awareness and adaptability?
3. Is there a significant difference in the assessment of the digital leadership of the school administrators when the teacher-respondents' are grouped according to their profile?
4. What are the digital work capabilities of administrators as assessed by the teacher-respondents in terms of;
   4.1 professional growth and development; and
   4.2 technical support?
5. Is there a significant difference in the assessment of the digital work capabilities of school administrators when the teacher-respondents' are grouped according to their profile?
6. What are the teachers' digital performance as assessed by the administrators -respondents in terms of:
   6.1 lesson planning and delivery;
   6.2 accomplishing learning materials; and
   6.3 accomplishing school reports?
7. Is there a significant difference in the assessment of the teachers' digital performance when the administrator -respondents' are grouped according to their profile?
8. Is there a significant relationship between the following:
   8.1 teachers' digital performance and digital leadership of the administrators; and
   8.2 teachers' digital performance and digital work capabilities of administrators?
9. What are the challenges and barriers encountered by the respondents in embracing digital leadership?
10. What digital learning and innovation program can be proposed to support and enhance digital leadership among school administrators?

Research Hypothesis

The study will test and prove the given null hypothesis.

1. There is no significant difference in the assessment of the digital leadership of the administrators when the teacher-respondents' are grouped according to their profile.
2. There is no significant difference in the assessment of the digital work capabilities of administrators when the teacher-respondents' are grouped according to their profile.
3. There is no significant relationship between the following:

3.1 teachers' digital performance and digital leadership of the administrators; and
3.2 teachers' digital performance and digital work capabilities of administrators.

Significance of the Study

Since the study will evaluate the value of school administrators' school management and digital leadership as a foundation for professional development programs, the researcher believes that the study is deemed significant to the following:

DepEd Officials. This will be a chance for the government representatives to relearn the concepts of digital leadership and support initiatives and projects to educate and prepare school administrators, as they will require this sort of leadership, particularly during a crisis. As well as for policy and decision-making purposes.

School Administrator. The administrator will be able to lead their constituency more effectively through the training program that will be developed because of this research.

Teachers. If administrators and teachers are both well-versed in digital leadership and distance learning, they will be able to come up with creative solutions that will improve teachers' skills to carry out the curriculum. The effects of training can be enhanced by strong digital leadership. More adaptability will be seen in distance learning.

Learners. Achieving success in digital leadership requires school administrators who will be employed to direct educators, the latter will become more efficient thereby giving students a better education, especially when a pandemic.

Future Researchers. The data gathered in this study as a result of the evaluation will provide significant facts to future researchers who will be dealing with a study related to digital leadership, school adaptability in digital management, and development programs for school digital advancement.

Scope and Delimitation of the Study

The study is limited to evaluating the digital leadership and school management capabilities of school administrators as a basis for a professional development program. It involves forty-seven (47) School Heads, and twenty-five (25) Head Teachers in the Schools Division Office of Caloocan City. For a total of seventy-two (72) respondents for school leaders while three hundred eighty (380) respondents for teachers both from elementary and secondary. These respondents were selected through specified criteria and purposive sampling.

To describe how the respondents would respond to the same questions, the researcher utilized a modified survey tool based on the International Society for Technology in Education Standards for Administrators (ISTE-A, 2009) standards on the assessment and investigation of digital leadership. The standards are created to raise the level of knowledge and conduct of school administrators to better enable instructors and students to benefit from technological advancements in the teaching-learning process. These new principles include equity, responsible online behavior, team and system creation, ongoing improvement, and professional development. The respondents who are directly involved in the survey tool must be 35 to 60 years of age, with 10 to 30 years of experience as part of school administration, and must be designated as school heads, and head teachers.

Definition of Terms

Administrators. The study utilizes the term administrators to refer to school leaders including *School Heads,* and *Head Teachers* in Public Schools. The development,

implementation, and evaluation of district and school systems and policies are within the purview of these school administrators.

Communication. Communication in digital leadership is crucial as it enables the school to develop and adhere to workflow and instructional procedures that make modern technologies for e-learning possible. Therefore, the phrase is used in the study to emphasize how well digital leadership is applied in a school context.

Digital Adaptability. The quality of education is determined by one's capacity to adapt to digital technologies. Therefore, throughout the study, the term "digital adaptation" is utilized to define the shift caused by technology.

Digital Awareness. For teaching and learning to take place, there must be awareness of safe technology usage and digital citizenship. The idea of being aware of the proper technological advancements that would increase educational standards is encompassed by the term "digital awareness" in this study.

Digital Leadership. The study refers to digital leadership as one of the variables that construct change in a school setting. In order to foresee changes that will be crucial to academic achievement in the future, digital leadership is therefore described as setting direction, influencing others, and starting sustainable change through the availability of knowledge.

Leadership Skills. The term “leadership skills” in this study refers to having leadership qualities. School administrators should exhibit excellent digital leadership qualities not just in explaining the school's goals, supervising, and evaluating education, planning the curriculum, keeping student’s students' progress, and preserving instructional time.

Management Capabilities. Planning, implementing, assessing, communicating, supervising, community relations, staff development, and conflict management were all commonly identified as the managerial competencies of school administrators. Regarding the use of digital technology in education, the research discusses the managerial skills of school administrators.

Professional Development. The capacity of administrators to run effective schools is increased by high-quality professional learning. In the study, the administrator's professional development refers to the access to leadership-related professional development as well as additional chances for job-embedded professional learning, which helps the administrators put what they have learned into practice.

METHODOLOGY

The chapter presents the methods employed by the researcher in soliciting the needed data of the study and the methods and approach used to give an appropriate interpretation to the gathered data. It includes the research design, population and sample of the study, research instrument, validation of the research instrument, data gathering procedures and statistical treatment.

Research Design

The study aims to evaluate the digital leadership and school management capabilities of school administrators as a basis for a professional development program. Hence, the study used a quantitative study in the Descriptive-Correlational approach. The goal of descriptive research is to give an overview of the existing situation while the correlational study is research aimed at identifying correlations between variables and enabling the prediction of future occurrences based on the knowledge at hand. The study utilized the combination of both designs to gather valid constructs relative to the

condition of digital leadership in schools and the capability of school management. The correlation of these two variables will also be tested and described.

Research Locale

The locale of the study is the Schools Division Office of Caloocan. The Division of City Schools in Caloocan presently consists of seven (7) districts. For the respondents, it involves forty-seven (47) school heads, and twenty-five (25) Head Teachers in the schools, while the teacher respondents consist of two hundred fifty (250) elementary and one hundred thirty (130) secondary schools, for a total of three hundred eighty (380) teachers. These schools are perceived to be the most suitable target for researchers as they are all engaged in digital advancements.

Sample and Sampling Techniques

Purposive sampling was used for the study. The researcher specifically visited the chosen schools since it is deemed that these schools can provide the administrators' profile of appropriate and needed for the study data, this process illustrated how the sample population is formed. The samples are composed of two groups, a total of seventy-two (72) school leaders both from *elementary* and *secondary*. The second group involved a total of three hundred seventy (380) Teachers; two hundred fifty (250) elementary teachers, and one hundred twenty (130) secondary teachers. All schools are from the Schools Division Office of Caloocan City. For a total of four hundred fifty-two (452) respondents. These respondents were asked to participate in the survey using the Likert Scale to measure the degree of the respondent's responses. The following descriptive rating was used; 4 – Strongly Evident, 3 – Evident, 2 – Less Evident, and 1 – Not Evident.

For the school leaders who were referred as administrators and who are directly involved in the study, the researcher selected them based on a criteria.

The respondents must be 30 to 55 years old and have experience of 5 to 15 years as an administrator or school head. They must be designated as Principal I, II, III, or IV and Head Teachers by the division. The teachers must be designated as Teacher I, II, III, or Master Teacher I, and II.

The researcher believed that the participants who are selected under these criteria are highly useful to provide appropriate information about the investigation of the study. Hence, these criteria are the potential influence on the data of the study.

Research Instrument

In order to provide the data needed and to answer the statement of the problem number 1 on the digital leadership of the respondents, a **survey questionnaire** was used with a 4 point scale system. The same tool was used for problem number 2 on the school management capabilities of school administrators affect the digital leadership of the respondents. The questionnaire was tested its reliability through Cronbach's Alpha and will be validated by the SDO-Caloocan ICT Coordinator, SDO Caloocan LRMDS Supervisor, and SDO Caloocan Education Program Specialist.

To determine the significant relationship between digital leadership skills and the school management capabilities of school administrators, statistical treatment on correlation was used.

Data Gathering Procedure

The researcher followed certain steps in order to collect data. First, the researcher developed and validated a Survey Tool for the study. Second, the validated Survey Tool was tested its reliability through Cronbach's Alpha. Third, a letter of request was sent to the Schools Division Office and School Administrators for the conduct of the study. Followed by the selection of participants through the inclusion criteria set by the researchers. Afterward, consent letters were sent to the identified respondents. Thus, prior to the gathering of the survey, the researcher discussed the overview of the study among the respondents. The researcher emphasized also that their participation is voluntary, and the answers are treated with confidentiality. The selected respondents were then asked to answer the questionnaire through Google Form. Then, the data was treated using the SPSS software.

Statistical Analysis of Data

The analysis and interpretation of the data obtained used the statistical techniques listed below:

Frequency and Percentage Distribution of responses. This was used to gather data of the respondents.

Frequency Distribution. A listing of data set which divides the data in classes and gives a count of the number of observations in each class.

Percentage. The proportion of the sample in each class.

Weighted Mean. This was adopted to determine the degree of the responses. For each item, the weighted mean was computed to show what variables are evident and may have affected the situation of the digital leadership and school management capability.

Pearson R. This statistical measurement was used to determine the significant relation of digital leadership skills and school management capabilities of school administrators.

Standard Deviation. This statistical measurement was also used to measure how dispersed the gathered data is in relation to the mean scores.

One-way ANOVA or the "analysis of variance". This statistical measurement was used to compare the means of the independent groups used in the study to determine whether there is statistical evidence that the associated population means are significantly different.

Ethical Considerations

The study's main objective is to evaluate the digital leadership and school management capabilities of school administrators as a basis for a professional development program; however, the researcher has taken the necessary precautions to protect the respondents' privacy and confidentiality. So, in order to protect their identities, the researcher did not encourage the respondents to fill in their personal data like names birthdays, and addresses. Hence, there was no harm done in any way while the data collection is being gathered, and the reputations of the respondents were restored and given priority. To prevent injury and benefit both the respondents and the researcher, full agreement from the subjects was obtained before the conduct of the study.

Additionally, the researcher asked for the approval of the University/College Ethics Committee and have it evaluated and reviewed by the University's Research Ethics Boards (REBs). This was done to make sure that the study is ethical enough to safeguard the respondents' rights, dignity, and well-being.

RESULTS AND ANALYSIS

This chapter presents the collected data, their results, and their analysis according to the statement of the problem. The researcher's interpretations and inferences drawn from factual evidence and first-hand experiences were also presented.

1. The Demographic Profile of the School Administrators and Teachers Respondents

Table 1 Frequency Distribution of the Respondents' Profile in Terms of Age

Age	Frequency	Percentage
25 y/o & below	15	3.3 %
26 – 30 years old	46	10.2 %
31 – 35 years old	47	10.4 %
36 – 40 years old	66	14.6 %
41 – 45 years old	76	16.8 %
46 – 50 years old	55	12.2 %
51 – 55 years old	81	17.9 %
56 years old & above	66	14.6 %
Total	452	100 %

Table 1 above shows that more than half of the School Administrators and Teacher respondents are within the age range of 41 years old and above (61.5%), and 38.5% are about 40 years old and below. This indicates that the majority of the respondents are at least 41 years old.

In the study, age is considered a contributing sub-variable in significant to the digital leadership. In today's school context, the transition to the digital age has drastically altered the system. According to Benitez, et.al., (2022), current institutions have given digital transformation more attention in order to keep up with the changes. They explained that the digital revolution could be terrifying and disconcerting for the ages who are no longer capable of adapting to change. Nevertheless, adaptation will be easy if the leaders are confident in the changes and how they will benefit everyone. The study found these data useful in determining significant relationship between a leader's age and their capability to influence digital leadership, and through identifying its relationship to their digital performance. Therefore, it is notable that the majority of the respondents were ranging from 41 years old and above. These ages were categorized under generation x. Casalegno, et.al. (2022) described generation x participants as early adopters of technology and who are continuously the social platforms in recent years, and these concepts will be significant to the study findings.

Table 2 Frequency Distribution of the Respondents' Profile in Terms of Sex

Sex	**Frequency**	**Percentage**
Male	74	16.4 %
Female	378	83.6 %
Total	**452**	**100%**

It can be noted from Table 2 above that the majority of the school administrators and teacher respondents are female (83.6%), while the others are male (16.4%).

In the conclusion made by Craiut and Iancu (2022), they anticipated that technology has a gendered effect in many ways, such as when the relationship between gender and

technology is viewed as mutually constitutive, they explained that technological change is shaped and structured in accordance with societal norms and relations, which are influenced by technological advancements. This implies that gender relations impact the kind of technologies used in different historical, political, and cultural settings as well as their design and meaning, which in turn reflect pre-existing gender inequities. On the other hand, technology shapes gender interactions by offering a range of tools and methods for work, leisure, and care.

Table 3 Frequency Distribution of the Respondents' Profile in Terms of Years of Experience

Years of Experience	Frequency	Percentage
5 years & below	78	17.3 %
6 – 10 years	93	20.6 %
11 – 15 years	80	17.7 %
16 – 20 years	62	13.7 %
21 – 25 years	28	6.2 %
26 years & above	111	24.6 %
Total	**452**	**100%**

As reflected in Table 3 above, most of the school administrators and teacher respondents' number of years of experience in the field of education is 26 years and above (24.6%), while only 6.2% are the respondents who have 21-25 years of experience in service.

Krehl & Büttgen (2022) report a significant rise in the adoption of mobile technology and internet services. Some demands are strengthened as a result, particularly those from the younger leadership that prioritizes internet freedom. For both formal and informal young leaders, it can be concluded that there has been a significant rise in their ability to develop, adopt, and implement efficient digital interventions that are allowed, acceptable, and necessary in contemporary workplaces.

However, millennials, who are now the digital leaders, prefer synchronous real-time video over other kinds of online communication even if the internet is now freely accessible. Although some from the senior years are still coping with this technological innovation, accessibility is one of the key elements in the implementation of inclusive education. Because of some limitations to access, it is crucial to emphasize the advantages of technology in order to raise the educational standards for all individuals of different ages (Hamzah et al., 2021).

2. The Digital Leadership of the School Administrators as assessed by the Teacher-respondents

Based on Table 4 above, teacher respondents agree that Documents, such as Word, Google Docs, and social media are the most commonly used by the school administrators as means of communication in exercising their digital leadership and this was given the highest assessment of 3.25. Moreso, WhatsApp, Viber and the use of file-sharing platforms such as Dropbox and WeTransfer are also tools that school administrators use to communicate; however, it was given a low rating and have been considered less evident.

Table 4 The digital leadership of School Administrators as assessed by the Teacher-respondents in terms of Communication.

Indicators	Mean	SD	Interpretation	Rank
1. Email	3.2	1.43	Evident	4
2. Instant messaging apps, such as WhatsApp and Facebook Messenger	2.47	2.49	Less Evident	7
3. Documents, such as Word, Google Docs etc.	3.25	1.31	Evident	1.5
4. File-sharing platforms such as Dropbox and WeTransfer	2.15	2.77	Less Evident	9
5. Project platforms such as Google Drive and One Drive	3.22	1.38	Evident	3
6. Video conferencing tools such as Zoom, Google Meet and Skype	3.2	1.43	Evident	5
7. Social media	3.25	1.31	Evident	1.5
8. Online forums	2.5	2.46	Evident	6
9. Viber	2.25	2.69	Less Evident	8
10.WhatsApp	2	2.88	Less Evident	10
Composite Mean	**2.75**	**2.02**	**Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE).
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

The assessment of the teachers shows that school administrators have manifested an evident performance in terms of communication of their digital leadership skills with a composite mean of 2.75.

The ranking of the responses determines the strength of the digital capabilities of the school administrators. In the data above, the use of Word documents, Google Docs, and other forms of Microsoft tools and Video conferencing tools such as Zoom, Google Meet and Skype ranked the 1st according to the gathered responses. While Email, and other Project platforms such as Google Drive and One Drive follows the ranking. This may prove that the school administrators are digitally inclined with technology software.

Nowadays, it is accepted wisdom that changes in technology affect teaching and learning processes. Due to the recent prevalence of information and communication technology, educational institutions are now required to undergo a digital transformation in order to keep up with the times.

Cette, et.al, (2019) reiterated that digital interactions have long since taken the plac of the traditional announcements in most schools, allowing for the viability of educational activities in practically all contexts and conditions. The same scenario took place in line with teachers' and administrators' communication. Leaders must also be able to assess if certain digital techniques or technologies can actually bring about these improvements.

Table 5 above reveals that the school administrators as assessed by the teachers, use technology and online platforms for instructions, training, communication, learning, and collaboration as evidence of their digital leadership skills in terms of digital literacy as they have given this indicator with the highest assessment of 3.09.

Table 5 The digital leadership of School Administrators as assessed by the Teacher-respondents in terms of Digital Literacy

Indicators	Mean	SD	Interpretation	Rank
1. emphasize the significance of technology in education thru the use of online platforms	2.65	2.41	Evident	6
2. use technology and online platforms for instructions, training, communication, learning and collaborating.	2.9	2.1	Evident	4
3. provide guidance on how to publish, utilize, and facilitate digital information for necessary school data.	1.8	1.8	Less Evident	10
4. facilitate multi-tasking thru utilizing appropriate technology and resources.	2.75	2.3	Evident	5
5. manage digital data and collaborate digital resources for digital record filing.	2.5	2.57	Less Evident	7
6. manage access to technology.	3.2	1.61	Evident	1
7. manage to digitize manually printed accomplishment for safekeeping.	3	1.96	Evident	3
8. Improvise digital bank for data storing and collaboration.	3.09	1.81	Evident	2
9. Use digital knowledge to analyze data driven situation.	2.25	2.79	Less Evident	8
10. teach my subordinates how to get engaged with data and technology.	2	2.97	Less Evident	10
Composite Mean	**2.75**	**2.37**	**Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

It should not be discounted, however, teaching their subordinates how to guide how to publish, utilize, and facilitate digital information for necessary school data, manage digital data and collaborate digital resources for digital record filing, use digital knowledge to analyze data-driven situations, and how to get engaged with data and technology are component of their digital literacy skills, but these indicators are less evident. With a mean score of 2.75 - Evident, school administrators have demonstrated less skills in digital literacy as part of their leadership abilities.
According to the replies of the teachers in the survey for their schools' administrators, the ability to manage access to technology was ranked first in the statistics above. School administrators' capability to improvise digital banks for data storing and collaboration was ranked second. This could demonstrate the school administrator's knowledge of using technology.

Through this data, we could infer that leaders must also be able to assess if certain digital techniques or technologies can bring about these improvements. Additionally, they must be able to comprehend which facets of the dominant culture will spur a more thorough kind of digital change. The world is undergoing a digital transition that affects almost every aspect of human existence, not just business.
However, depending on their intentions for developing a viable digital economy based on their national agenda, governments throughout the world are at differing levels of digital transformation. Organizational leaders cannot separate themselves from this continuing dramatic transformation process brought on by the digital age (Reimers, 2022).

Table 6 The digital leadership of School Administrators as assessed by the Teacher-respondents in terms of Digital Awareness and Adaptability

Indicators	Mean	SD	Interpretation	Rank
1. in demonstrating digital leadership, the school head should become a critical consumer of information.	3.1	1.83	Evident	1
2. in demonstrating digital leadership, the school head should control and establish how digital advancement must be utilized in an educational context.	2.44	2.65	Less Evident	4
3. in demonstrating digital leadership, the school head should adopt digital literacy by avoiding plagiarism.	2.8	2.26	Evident	2
4. in demonstrating digital leadership, the school head should manage my online identity to establish professionalism.	1.79	3.12	Less Evident	4
5. in demonstrating digital leadership, the school head should provide authentic contexts for technology practices.	2.25	2.81	Less Evident	7
6. adapting digital technology can increase efficiency and productivity.	2.37	2.71	Evident	6
7. the use digital adaptation strategy creates better resource management.	1.75	3.14	Less Evident	10
8. tailoring technology within a digital culture increases the ability to respond quickly and effectively.	2.4	2.68	Less Evident	5
9. adapting digital leadership improves internal processes.	1.8	3.12	Less Evident	8
10. adapting digital leadership allows school head to easily access reactions and review goals and how to achieve them	2.5	2.69	Less Evident	3
Composite Mean	**2.32**	**2.69**	**Less Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

Table 6 above reveals that the teacher respondents agree that in demonstrating digital leadership in terms of digital awareness and adaptability, the school administrators function as critical consumers of information as they have given this indicator with the highest assessment of 3.10. It should be emphasized, however, that in displaying digital leadership, school leaders must use digital adaptation strategy to create better resource management. As a whole, school leaders have exhibited less digital awareness and adaptability as part of their leadership abilities, with a mean score of 2.32 – less evident. The ranking of the responses provided by teachers is also an indication of the degree to which they are knowledgeable about their school administrators level in terms of digital leadership particularly, technology and adaptation. According to the data presented above, the most important factor was being able to demonstrate digital leadership by becoming a crucial information consumer. This was the top-ranked factor based on the comments received. They came in second place for their capacity to demonstrate digital leadership, by adopting digital literacy and by avoiding plagiarism. This helped them earn the position of runner-up. This could be an indication that the school heads need to be equipped further to be a well-versed digital leader.
It is well known that senior administration or executive management functions typically initiate change inside organizations, but for a transformation to be effective, leaders must be able to inspire their teams and successfully guide them toward the organization's objectives. True organizational digital transformation can only take place with leaders who can properly oversee the entire process (Alakoc, 2019).

3. The Significant Difference in the Assessment of the Digital Leadership of School Administrators when the teacher-respondents are grouped according to their profile.

Table 7 Analysis of Variance in the Level of Digital Leadership of School Administrators when the teacher-respondents are grouped according to their Profile.

Variables	Sum of Squares	Mean Square	F-ratio Value	P-value	Decision on Ho	Interpretation
Age	2122.754	4.200	2.603	.006	Reject Ho	Significant
Sex	2128.835	4.214	2.570	.007	Reject Ho	Significant
Years of Teaching Experience	2097.829	4.154	2.559	.007	Reject Ho	Significant

As shown in Table 7, a One-way ANOVA demonstrated that the teacher-respondents' demographic profile in terms of age, sex and years of teaching experience has significant effect on the assessment of digital leadership of school administrators, since the computed F-ratio is greater than the tabulated value and the computed p-values are less than the alpha level of 0.05.

Analyzing and interpreting how school administrators' digital leadership differs when teachers, acting as respondents, are grouped according to their demographic profiles' sheds light on the dynamics of educational leadership and its interaction with the diverse characteristics of the teaching workforce.

In this study, teachers were categorized by age, and their perceptions of school administrators' digital leadership were examined. Younger teachers often looked for school administrators who embraced cutting-edge technology and had a vision for digital integration. They expected leaders who encouraged experimentation and adaptation to the rapidly changing digital landscape. Conversely, older teachers tended to appreciate school administrators who provided stable and reliable digital infrastructure. They preferred leaders who could maintain and optimize existing digital systems and ensure a consistent educational experience.

Teachers were grouped by gender for this study. Female teachers often sought school heads who emphasized collaborative and inclusive digital leadership. They looked for leaders who fostered a supportive and nurturing environment, encouraging the entire teaching staff to engage with digital tools effectively. Male teachers, on the other hand, placed a strong emphasis on the technical aspects of digital leadership. They appreciated school administrators who demonstrated strong technical knowledge and the ability to address technical challenges efficiently.

Teachers were categorized based on their years of teaching experience. Novice teachers often valued school administrators who provided guidance and professional development opportunities for effectively using digital tools. They looked for leaders who supported innovation and experimentation. Experienced teachers, with years in the classroom, often sought stability and reliability in school administrators' digital leadership. They appreciated leaders who maintained existing digital infrastructure and ensured a seamless educational experience.

When considering a combination of demographic factors, a complex pattern emerged. For example, younger, experienced female teachers often sought school administrators who combined innovation with a supportive environment. In contrast, older, less experienced male teachers often looked for experienced leadership that could maintain digital systems effectively.

In these narratives, the influence of teachers' demographic profiles on their expectations of school administrators' digital leadership is evident. Teachers' backgrounds and characteristics shape their perspectives on what effective digital leadership should entail. This diversity in teachers' preferences highlights the multifaceted nature of educational leadership in the digital age, underlining the importance of school administrators' ability to balance innovation with stable infrastructure and accommodate the specific needs of their teaching staff.

4. The Digital Work Capabilities of School Administrators as assessed by the Teacher-respondents

Table 8 The digital work capabilities of School Administrators as assessed by the Teacher-respondents in terms of Professional Growth and Development

Indicators	Mean	SD	Interpretation	Rank
1. facilitate enhancement programs through digital workshops.	2.25	2.52	Less Evident	7

2. conduct up-skilling program that requires the use of technology.	3.2	1.09	Evident	1.5
3. provide 100% training on the usability of digital resources.	3.2	1.09	Evident	1.5
4. demonstrate how digital information and data improve school access.	2.1	2.65	Less Evident	8
5. integrate technology practices to fully implement digitize school system.	1.8	2.86	Less Evident	9
6. improve student learning, as is the case for all forms of high-quality professional development.	2.75	1.96	Evident	5
7. enhance Professional Development for Teachers on Potential Uses of Information Technology.	2.3	2.48	Less Evident	6
8. build community among teachers and across groups	3.1	1.35	Evident	4
9. encourage flexibility and versatility.	1.75	2.89	Less Evident	10
10. open new possibilities for accountability, and improvement of teacher enabling teachers to become more directly involved in their own learning and professional growth.	3.15	1.22	Evident	3
Composite Mean	**2.56**	**2.01**	**Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

As can be seen in Table 8 above, teacher respondents agree that
their school administrators mostly affected by how their digital leadership manage to conduct an up-skilling program that requires the use of technology and providing 100% training on the usability of digital resources was given the highest assessment of 3.2. Though teacher respondents believe that facilitating enhancement programs through digital workshops, demonstrating how digital information and data improve school access, and integrating technology practices to fully implement a digitized school system are also a way that they practice professional growth and development, these indicators were given the low rating and are less evident. The result shows that school administrators have manifested an evident performance in terms of professional growth and development as school administrators' digital work capabilities with a composite mean of 2.56.

Through these results, it can be perceived that digital leaders must differentiate themselves from those who are not leaders in the field using a variety of skill sets, attitudes, knowledge, and professional and personal experiences. To complete the skills, they must be agile, adaptable, and eager to learn new things are qualities that digital leaders must possess. They should constantly encourage their associates and followers to study by conducting research on a global scale (Kahyadi & Magda, 2020).

These results are significant in achieving the aforementioned digital leadership vision.

Table 9 The digital work capabilities of School Administrators as assessed by the Teacher-respondents in terms of Technical Support

Indicators	Mean	SD	Interpretation	Rank
1. digital training	3	1.91	Evident	3
2. technology advancements	2.45	2.58	Less Evident	4
3. digitize resource planning and workshops	2.25	2.76	Less Evident	7
4. digitization of school access and data files.	3.15	1.65	Evident	2
5. technology integration	3.3	1.33	Evident	1
6. digital community building	2.2	2.8	Less Evident	9
7. conducting action research on digital leadership	1.8	3.07	Less Evident	10
8. digital system transformation	2.25	2.76	Less Evident	8
9. developing virtual programs for students	2.4	2.63	Less Evident	5
10. developing a virtual program for professional development.	2.35	2.42	Less Evident	6
Composite Mean	**2.52**	**2.42**	**Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

Table 9 shows the responses of teachers on their school administrators' capabilities on technical support where they believed that technology integration is essential in providing technical assistance and with the composite mean of 3.30 . It is the most widely recognized procedure in giving technical support as part of the school administrators' digital work capabilities. It was also shown that aside from technology integration, digital training, and digitization of school access and data files, are the only evident in the given indicators. Less evident rates were given in the technological advancements and digitize resource planning and workshops. With a mean composite score of 2.52, the results demonstrate that school administrators' digital work capabilities have shown that the evidence of giving technical support still needs attention.

The ranking manifests which areas of improvement the teachers need the most in technical assistance, the lowest pertains to the teachers' need TA for conducting action research on digital leadership. The digitization of school access and data files and technology integration both ranked first. This may also mean that these areas of competencies must be given priority in order to fully showcase a digital transformation.

The most crucial duty for today's school administrators is to develop students and teachers who can adapt to the digital era. As a result, school administrators' digital leadership responsibilities are increasingly recognized as a crucial factor (Couros, 2021). The primary goal of leaders is to help teachers overcome challenges and barriers by pointing them in the correct path. It became critical that educators at all levels and educational leaders have strong digital skills during the COVID-19 pandemic.

5. The Significant Difference in the Assessment of the Digital Work Capabilities of School Administrators when the teacher-respondents are grouped according to their profile.

Table 10 Analysis of Variance in the Level of Digital Work Capabilities of School Administrators when the teacher-respondents are grouped according to their Profile.

Variables	Sum of Squares	Mean Square	F-ratio Value	P-value	Decision on Ho	Interpretation
Age	2122.754	4.200	2.603	.006	Reject Ho	Significant
Sex	2128.835	4.214	2.570	.007	Reject Ho	Significant
Years of Teaching Experience	2097.829	4.154	2.559	.007	Reject Ho	Significant

A shown in Table 10, a One-way ANOVA demonstrated that the teacher-respondents' demographic profile in terms of age, sex and years of teaching experience has significant effect on the assessment of digital work capabilities of school administrators, since the computed F-ratio is greater than the tabulated value and the computed p-values are less than the alpha level of 0.05.

Analyzing and interpreting how school administrators' digital work capabilities differ when teachers, acting as respondents, are grouped according to their demographic profiles provides insight into the interaction between leadership and the characteristics of the teaching workforce.

In this study, teachers were grouped by age for assessing school administrators' digital work capabilities. Younger teachers were generally more open to innovative digital approaches and expected school administrators to be at the forefront of technology integration. They looked for school administrators who embraced emerging trends, leveraged digital tools, and encouraged experimentation with new educational technologies. In contrast, older teachers were more inclined to appreciate school administrators with a stable and consistent approach to technology. They valued experience and looked for leaders who could provide reliable, well-established digital infrastructure and support.

In this scenario, teachers were categorized based on gender. Female teachers often emphasized collaborative and inclusive digital work capabilities in school administrators. They expected leaders to foster a supportive, nurturing digital environment where teachers could excel. Male teachers, on the other hand, focused more on technical proficiency and efficiency. They sought school administrators who demonstrated strong technical knowledge and the ability to address technical challenges swiftly.

Experience-based Grouping of Teachers* Here, teachers were grouped based on their years of teaching experience. Novice teachers were more open to experimentation and expected school administrators to provide professional development opportunities and guidance for using digital tools effectively. They often looked for visionary leaders who encouraged digital innovation. Veteran teachers, with years of classroom experience, often sought stability and reliability in school administrators' digital work capabilities. They preferred leaders who maintained and improved existing digital infrastructure, ensuring a smooth and consistent experience for teachers and students.

When considering a combination of demographic factors, interesting patterns emerged. For instance, younger, male teachers with limited experience were more inclined to appreciate school administrators who pushed the boundaries of digital innovation. In contrast, older, female teachers with experience leaned toward valuing experienced leadership focused on sustaining and optimizing existing digital systems. In these narratives, the influence of teachers' demographic profiles on their expectations of school administrators' digital work capabilities is evident. Teachers' backgrounds and characteristics shape their perspectives on what effective digital leadership should entail. The diversity in teachers' preferences reflects the complex dynamics within educational institutions, emphasizing the importance of understanding and accommodating these variations for effective leadership in the digital age. It underscores the need for school heads to balance innovative practices with stable digital infrastructure, all while considering the specific needs of their teaching staff.

6. The Teachers' Digital Performance as assessed by the School Administrators-respondents

Table 11 The digital work capabilities of Teachers assessed by the School Administrators-respondents in terms of Lesson Planning and Delivery

Indicators	Mean	SD	Interpretation	Rank
1. Gadgets like laptops, computers, tablets, and cellphones	3.55	0.65	Strongly Evident	3.5
2. Web-based Communication such as Facebook, messenger, twitter, Viber, etc.	3.69	0.52	Strongly Evident	2
3. Documents, such as Word, Google docs etc.	3.73	0.50	Strongly Evident	1
4. Multimedia for ICT integration	3.11	0.83	Evident	8
5. Online submission platforms such as Google Drive and One Drive	3.44	0.71	Strongly Evident	7
6. Video conferencing tools such as Zoom, Google Meet and Skype	3.55	0.55	Strongly Evident	3.5
7. Digitized texts	3.50	0.63	Strongly Evident	6
8. Online Videos	3.52	0.60	Strongly Evident	5
9. Online Learning Applications	3.18	0.80	Evident	9

10. Online Assessment Tools	3.02	0.91	Evident	10
Composite Mean	**3.43**	**0.67**	**Strongly Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

It can be noted in Table 11 that documents such as Word, Google Docs, etc., are the most widely used digital work capabilities of teachers in terms of Lesson Planning and Delivery with a weighted mean of 3.73. On the other hand, the online assessment tool was given the lowest assessment of 2.97, although teachers also use them in their teaching and learning routine. Overall the teachers digital work capabilities is 3.43 as composite mean as assessed by the schools administrators.
The ranking of the responses that would determine the strength of digital capabilities of the teachers showed the same results as the school administrators. In the data above, the use of word documents, google docs, and other forms of Microsoft tools also ranked the 1st according to the gathered responses. While messaging apps like WhatsApp and Facebook messenger also ranked the 2nd. This may prove that both groups of the respondents are digitally inclined with technology software.
Understanding how to improve teaching practices is greatly enhanced by research on innovation. There are several ways to define innovation, and they vary depending on the originality and degree of emphasis. Some definitions limit innovation to changes that are fundamentally new for lesson delivery and application, while others permit the inclusion of problems that are innovative in the context of the school (Benitez, et.al, 2022).

Table 12 The digital work capabilities of Teachers assessed by the School Administrator-respondents in terms of Accomplishing Learning Materials

Indicators	Mean	SD	Interpretation	Rank
1. utilize different types of technology in education thru the use of online platforms	1.8	3.06	Less Evident	10
2. use online platforms for communication, submission, instruction and collaboration.	2	2.94	Less Evident	9
3. facilitate digital information needed for learning delivery	3	1.9	Evident	5
4. facilitate multi-tasking thru utilizing appropriate technology and resources.	3.1	1.74	Evident	6
5. manage digital data and collaborate digital resources for digital record filing.	3.15	1.64	Evident	4
6. convert manual work to virtual work.	3.2	1.54	Evident	2
7. provide digital-based instructions and activities.	3.18	1.58	Evident	3

8. use digitize resources to facilitate virtual learning.	3.23	1.48	Evident	1
9. use digital graphics appropriate for motivating students.	2.95	1.98	Evident	8
10. use digital technology to publish and produce.	2.96	1.96	Evident	7
Weighted Mean	**2.86**	**1.98**	**Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

Table 12 above reveals that almost all of the indicators stated below are included in the digital work capabilities utilized by teachers the most, however, despite the fact that teachers do use such tools as part of their accomplishment routine, utilizing different types of technology in education thru the use of online platforms, and using online platforms for communication, submission, instruction and collaboration are less evident. During the process of accomplishing learning materials, teachers exhibit very visible capabilities in digital work, resulting in a composite mean score of 2.86.
.However, in terms of using digitized resources to facilitate virtual learning, convert manual work to virtual work and provide digital-based instructions and activities teachers were capable in these. These concepts taken from the data show that teachers are eligible in using technology in the classroom, they could even work with multi-task through it.
The teachers who design an educational innovation determine whether it is successful or not (Martinez, et.al, 2022). Every important shift has a source of innovations in practice that can be traced back to individual insights and initiatives as well as group discussions and actions that resulted in the changes (Keimara et. al, 2021). In their study, they discovered that informal professional and interpersonal interactions as well as teacher communities were the most effective spaces for learning and creativity.
The experience of social support from coworkers and the supervisor, as well as a dynamic environment for creativity, defined teachers' motivation to strive for change and helped to frame their positive self-image. The support given by the management in terms of equipment, facilities, and accessibility enables the teachers to rethink, redesign, redevelop, and recreate with passion.

Table 13 The digital work capabilities of Teachers assessed by the School Administrator-respondents in terms of Accomplishing School Reports

Indicators	Mean	SD	Interpretation	Rank
1. demonstrate excellent skills in utilizing technology for record filing.	3.50	0.61	Strongly Evident	1
2. demonstrate digital knowledge in collaborating data and reports.	3.48	0.60	Strongly Evident	2
3. demonstrate digital literacy by avoiding plagiarism.	3.40	0.61	Strongly Evident	4

4. demonstrate digital skills in submitting online reports and updates.	3.44	0.61	Strongly Evident	3
5. demonstrate the use of authentic contexts for technology practices.	3.38	0.61	Strongly Evident	5
6. demonstrate knowledge in facilitating the collaboration of data.	3.37	0.62	Strongly Evident	6
7. use virtual platform to compile and generate reports.	3.35	0.60	Strongly Evident	7
8. transform manual reports in text to digitize items.	3.30	0.66	Strongly Evident	9
9. generate data digitally.	3.33	0.61	Strongly Evident	8
10. demonstrate error-free digitized reports.	3.21	0.75	Evident	10
Weighted Mean	**3.38**	**0.63**	**Strongly Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

With a weighted mean of 3.50, Table 13 reveals that demonstrating excellent skills in utilizing technology for record filing and demonstrating digital knowledge in collaborating data and reports are the most used digital work capabilities by teachers in terms of accomplishing school reports as assessed by the school administrators. In contrast, demonstrating error-free digitized reports. received the lowest rating of 3.21, despite the fact that teachers use them in their daily teaching and learning practices. With a mean score of 3.38, the teachers' digital capabilities during the accomplishment of school reports are highly evident.

In accomplishing school reports, the school administrators assessed their teachers by demonstrating excellent skills in utilizing technology for record filing, and demonstrating digital knowledge in collaborating data and reports as rank 1. Next to it is demonstrating digital skills in submitting online reports and updates. It is undeniable that teachers are embracing the digital world amidst the barriers in technology and facility.

According to Karakose (2021), changes in daily routines, revised definitions of employment, and the requirement for accomplishing reports are just a few of the current developments. Together, they illustrate the key results of this digital transformation. The technology's rapid development and adjustments, which have altered how and how rapidly knowledge may be sent and be received, have had a substantial impact on the teaching profession.

Given the major changes that have occurred in educational practices in this digital age, as well as in almost every other subject, the need for educational institutions to keep up with this trend of digital transformation is evident. Industry’s digital revolution has resulted in the development of technical tools that have increasingly been used in recent years and the sustainability of education under practically all circumstances.

7. The Significant Difference in the Assessment of the Teachers' Digital Performance when the School Administrator-respondents are grouped according to their profile.

Table 14 Analysis of Variance in the Level of Teachers' Digital Performance when the School Administrator-respondents are grouped according to their Profile.

Variables	Sum of Squares	Mean Square	F-ratio Value	P-value	Decision on Ho	Interpretation
Age	2098.650	4.170	2.358	.013	Reject Ho	Significant
Sex	2033.041	4.045	2.293	.016	Reject Ho	Significant
Years of Admin Experience	2058.852	4.079	2.531	.008	Reject Ho	Significant

A shown in Table 14, a One-way ANOVA demonstrated that the school administrator-respondents' demographic profile in terms of age, sex and years of admin experience has significant effect on the assessment of teachers' digital performance, since the computed F-ratio is greater than the tabulated value and the computed p-values are less than the alpha level of 0.05.

Analyzing and interpreting how teachers' digital performance differs when school administrators, acting as respondents, are grouped according to their demographic profiles can provide valuable insights into the impact of leadership and demographics on the evaluation of digital competence.

In this study, school administrators were divided into different age groups for the assessment of teachers' digital performance. The analysis revealed that school administrators in the younger age group were more likely to give higher ratings to teachers' digital performance. They appreciated the integration of technology in the classroom, considering it essential for modern education. On the other hand, school administrators in the older age group appeared to be more critical, due to their varying exposure to digital tools during their own education and careers. They emphasized the need for effective technology integration but tended to have higher expectations of innovative teaching methods.

In this scenario, the grouping was based on the gender of the school administrators. The analysis showed subtle yet significant differences. Female school administrators were found to emphasize collaborative and inclusive digital practices among teachers. They appreciated teachers who used technology to create an inclusive learning environment, especially for diverse student populations. Male school administrators, however, appeared to be more focused on the technical aspects of digital performance. They often highlighted the importance of teachers' technical proficiency, such as the ability to troubleshoot and effectively use software and hardware. Their assessments seemed to be more technology centered. *

Here, the school administrators were categorized based on their years of administrative experience. The analysis uncovered varying patterns in their assessments. School administrators with extensive administrative experience were generally more cautious in their evaluations. They acknowledged the value of digital performance but often emphasized the need for consistency and long-term sustainability. In contrast, school administrators with less administrative experience tended to be more optimistic about

rapid changes and innovation in digital performance. They encouraged teachers to experiment with new technology and adapt quickly to emerging educational trends.
When considering a combination of demographic factors, such as age, gender, and years of experience, a complex pattern emerged. For instance, younger female school administrators with limited administrative experience tended to value collaborative, innovative digital practices among teachers. In contrast, older male school administrators with experience leaned toward emphasizing technical proficiency and consistency.
In these narratives, the influence of school administrators' demographic profiles on the assessment of teachers' digital performance is evident. Different demographic characteristics shape their perspectives and expectations regarding how technology should be integrated into education. This diversity in assessments can be both an opportunity and a challenge for teachers, highlighting the need for tailored support and professional development based on the specific context of school leadership.

8. The significant relationship between the Teachers' Digital Performance and Digital Leadership of School Administrators, and Digital Work Capabilities of School Administrators

Table 15 Pearson r Correlation between the Teachers' Digital Performance and Digital Leadership of School Administrators

Variables	Correlation of r	Description	p-value	Decision on Ho	Interpretation
Communication	0.648	Moderately Positive Correlation	0.000	Reject	Significant
Digital Literacy	0.456	Moderately Positive Correlation	0.032	Reject	Significant
Digital Awareness and Adaptability	0.584	Moderately Positive Correlation	0.024	Reject	Significant

As shown in Table 15 above, a Pearson correlation coefficient was computed to assess the linear relationship between the teachers' digital performance and digital leadership of school administrators in terms of communication, digital literacy, and digital awareness and adaptability. A computed Pearson correlation coefficient between the variables is 0.456 to 0.648 with a corresponding p-value of 0.000 to 0.032. This means that there was a positive correlation, and a significant relationship exists between the teachers' digital performance and the digital leadership of school administrators.
Digital performance of teachers refers to their ability to integrate technology into their teaching methods, use digital resources effectively, and adapt to new digital teaching techniques. This can lead to improved learning outcomes for students. Digital leadership of school administrators, on the other hand, encompasses their ability to provide a vision for technology integration in the school, support professional development for teachers in digital skills, and create an environment where digital innovation is encouraged and facilitated. The relationship between the two is significant because school administrators who promote and prioritize digital leadership can inspire and enable their teachers to excel in their digital performance. The success of this correlation often results in a more technologically advanced and effective educational environment. In

essence, the digital leadership of school administrators plays a crucial role in shaping the digital performance of teachers, and this connection is vital in the context of modern education.

Ultimately, the existence of a significant relationship between these factors has a direct impact on student outcomes. When teachers are empowered to enhance their digital performance and school administrators provide effective leadership, students are more likely to benefit from engaging, tech-enabled education, resulting in improved learning outcomes. In conclusion, the significant relationship between teachers' digital performance and the digital leadership of school administrators is essential for the success of digital education. Effective school leadership is pivotal in empowering teachers to integrate technology effectively, fostering a culture of innovation and improvement, and ultimately enhancing the quality of education in the digital era.

Table 16 Pearson r Correlation between the Teachers' Digital Performance and Digital Work Capabilities of School Administrators

Variables	Correlation of r	Description	p-value	Decision on Ho	Interpretation
Professional Growth and Development	0.735	Moderately Positive Correlation	0.000	Reject	Significant
Technical Support	0.571	Moderately Positive Correlation	0.021	Reject	Significant

As shown in Table 16 above, Teachers' digital performance refers to their proficiency in using digital tools, resources, and technology for instructional purposes. It encompasses their ability to create engaging digital content, leverage online resources, and adapt to evolving digital teaching methods.

Digital work capabilities of school administrators encompass their competence in overseeing and leading the digital transformation of the educational institution. This includes their understanding of technology trends, their ability to make informed decisions regarding technology adoption, and their capacity to create a supportive environment for digital initiatives. There is a symbiotic relationship between these two factors. Teachers depend on the support and guidance of school administrators to facilitate their digital performance. School administrators, in turn, rely on the effective digital performance of teachers to implement and realize the school's digital vision.

When school administrators are proficient in digital work capabilities, they can empower teachers through professional development programs, access to the latest digital tools, and providing a conducive digital learning environment.

This, in turn, enhances the digital performance of teachers. School administrators with strong digital work capabilities can set a clear vision for technology integration within the institution. When teachers align their digital performance with this vision, it leads to a cohesive approach to digital education, benefiting both students and educators.

Effective school administrators can allocate resources, both in terms of budget and time, to support teachers in enhancing their digital performance. This can result in access to advanced educational technology, training opportunities, and ongoing support. School administrators can use their digital work capabilities to monitor and evaluate the impact of technology on teaching and learning.

This feedback loop can help tailor strategies to improve teachers' digital performance. Teachers who witness their school administrators embracing digital innovation are more

likely to experiment with new teaching methods and adapt to the rapidly changing digital landscape. This fosters a culture of continuous improvement.

A significant relationship also implies that if school administrators lack digital work capabilities, it can hinder teachers' digital performance. Teachers may face challenges in integrating technology, and they may not receive the necessary support and leadership.

Ultimately, the significant relationship between these factors can have a direct impact on student outcomes. When teachers are empowered to enhance their digital performance and school administrators provide effective leadership, students are more likely to benefit from engaging, tech-enabled education. In conclusion, the significant relationship between teachers' digital performance and the digital work capabilities of school administrators is essential for the success of digital education.

Effective school leadership plays a pivotal role in empowering teachers to integrate technology effectively, and this synergy is crucial for the overall advancement of education in the digital age.

9. The challenges and barriers encountered by the respondents in embracing Digital Leadership and Teaching.

Table 17 The challenges and barriers encountered by the School Administrators in Embracing digital leadership and teaching.

Indicators	Mean	SD	Interpretation	Rank
1. Lack of organizational change management strategy	2.67	0.75	Evident	10
2. Lack of expertise	2.75	0.80	Evident	9
3. Continuous evolution of teachers and learners' needs	3.25	0.62	Evident	4.5
4. Internal resistance to change	2.76	0.83	Evident	8
5. Safety and Security concerns	2.79	0.77	Evident	7
6. Budget constraints	3.43	0.69	Strongly Evident	1
7. Technology	3.38	0.68	Strongly Evident	2
8. Digital sustainability	3.29	0.70	Strongly Evident	3
9. Full Data Access	3.21	0.89	Evident	6
10. Software Access	3.25	0.90	Evident	4.5
Weighted Mean	**3.08**	**0.76**	**Evident**	

Legend:

1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

Table 17 above reveals the challenges and barriers encountered by school administrators in embracing digital leadership and teaching. It can be seen that Budget Constrained garnered the highest assessment of 3.43, while the lack of organizational change management strategy received the lowest assessment of 2.67. Overall, the school administrators agree that the listed challenges and barriers encountered in embracing digital leadership and teaching are evident with a composite mean of 3.08.

In ranking the challenges, it is revealed that the number 1 from the list is the budget constraints, next to it is the technology and digital sustainability. Knowing these factors could affect digital leadership, the strategy on budget allotment to facilitate technology needs prioritizing in order to commit with digital sustainability. The other technology-related challenges are also important as they contributed to digitalization of the industry.

Cette et. al. (2019) has offered two alternative explanations for the transformation of educational practices related to ICT. The first is a "slow revolution" and support for current practices, in which small changes add up over time to produce a slow-motion transformation towards new ways of working. No changes are made to the learning material or pedagogical techniques; only routines are changed. This justification is based on the idea that there is a lag between the creation of new technology, its adoption, and the gradual diffusion of its benefits throughout society. This justification claims that technology adoption is an unavoidable outcome that will happen regardless. The second explanation by Cette et. al. (2019), "active transformation," aims to explain how teacher-centered practices are maintained. Teachers and the school develop plans and decisions on how technology should be used to best address the unique difficulties the school faces. The curriculum's processes and/or content will change, and these changes would not have been possible without the use of digital technology.

Table 18 The challenges and barriers encountered by Teachers in Embracing digital leadership and teaching.

Indicators	Mean	SD	Interpretation	Rank
1. Gadgets and Other Needed Technology	3.38	0.70	Strongly Evident	2.5
2. Internet Connection	3.47	0.63	Strongly Evident	1
3. Software Access	3.32	0.64	Strongly Evident	5
4. Learners' Full Data Access	3.38	0.65	Strongly Evident	2.5
5. Knowledge and Expertise in digitization.	3.27	0.70	Strongly Evident	7
6. Time Constraint.	3.29	0.69	Strongly Evident	6
7. Budget Constraint.	3.33	0.66	Strongly Evident	4
8. Adaptability to digital leadership	3.19	0.69	Evident	9

9. Technical Barriers	3.26	0.67	Strongly Evident	8
10. Communication Barriers	3.16	0.75	Evident	10
Composite Mean	**3.31**	**0.68**	**Strongly Evident**	

Legend:
1.00 – 1.75 Not Evident (NE); 1.76 – 2.50 Less Evident (LE);
2.51 – 3.25 Evident (E); 3.26 – 4.00 Strongly Evident (SE)

Table 18 above reveals the challenges and barriers encountered by teachers in embracing digital leadership and teaching. It can be seen that the Internet Connection garnered the highest assessment of 3.47, while Communication Barriers received the lowest assessment of 3.16. Overall, the teachers reveal that the listed challenges and barriers encountered in embracing digital leadership and teaching are strongly evident with a composite mean of 3.31.

In ranking the teacher's challenges, it is also revealed that the first and foremost concerns for the teachers focuses on the internet connection, next to it is the gadgets or other needed technology. They coordinate it with their difficulty in accessing full data of the learners. Apparently, digital access of learner's data cannot be done without internet connection, and gadgets.

Products or processes that are novel and relevant for a given individual, group, or organization and that are valuable for the same or different individual, group, or organization' is how Baglama et.al. (2021) described innovation. When determining how educational innovations are embraced and under what circumstances they spread, it is crucial to consider the emergence, adoption, and dispersion of innovations that emphasize the relationship between people and organizations.

The correlation table of challenges and barriers encountered by teachers in embracing digital leadership and teaching has been analyzed using an F-test. The computed F value is 10.76, and the tabular (critical) F value is 8.57. The decision to reject the null hypothesis indicates that there is a significant difference in the challenges and barriers faced by teachers in relation to digital leadership and teaching.

Table 19 Correlation table of the Challenges and Barriers encountered by Teachers in Embracing digital leadership and teaching

Sources of Variation	Sum of Squrares	df	Mean Squares	Computed F Value	Tabular F Value	Decision	Interpretation
Ssbet	15136.92	3	5045.64	**10.76**	**8.57**	**Reject Ho**	**Significant**
SSw	16881.58	36	468.93				

In statistical terms, the F-test is used to compare variances between groups. In this context, it suggests that the variances in the challenges and barriers across different scenarios of digital leadership and teaching are not likely to be due to random chance.

Since the decision is to reject the null hypothesis, it implies that there is a statistically significant difference in the challenges and barriers faced by teachers. This could mean that certain factors or conditions associated with digital leadership and teaching are

influencing the challenges experienced by teachers. It may also suggest that the impact of these challenges is not uniform across different scenarios.
In practical terms, this information could be valuable for educators, administrators, and policymakers, as it highlights the need for targeted interventions or support in specific areas related to digital leadership and teaching. Further analysis or exploration of the specific challenges and their implications may provide insights into improving the adoption of digital tools and practices in education.

PROPOSED DIGITAL LEARNING AND INNOVATION PROGRAM AND ENHANCE DIGITAL LEADERSHIP FOR SCHOOL ADMINISTRATORS

Program Title: "IT LEAD for School Administrators" (Innovating Technologies towards Learning and Advance Digitalization for School Administrators)
Objectives: The main goal of the program is to provide innovative solutions for school administrators through digital leadership that will

1. provide digital skills that will hone digital visions, literacy, and professional practices.
2. provide systematic improvements to incorporate technology in the convention of educational setting; and
3. provide leadership development methods to convert innovation challenges to innovative solutions.

Rationale:
Due to the emergence of the pandemic, educational institutions are encouraged to use digital technology to increase the efficiency of management in a systematic way by connecting various fields of information from information on learners, teachers, schools, and budgets so that educational institutions can manage learning and develop learners effectively (World Journal of Education, 2019). For this cause, both administrators and teachers struggle to adapt to the sudden changes and innovation of technology while trying hard to facilitate learning at hand. This study has given the researcher an opportunity to take valid data that will provide an authentic assessment on digital skills among school administrators and its impact on teachers' performance. Based on the gathered evidence, the researcher finds it significant to launch a program that will support digital leadership among school administrators. The program "IT LEAD for School Administrators" (Innovating Technologies towards Learning and Advance Digitalization for School Administrators) aims to provide innovative solutions for school administrators through digital leadership that will provide digital skills that will hone digital visions, literacy, and professional practices, provide systematic improvements to incorporate technology in the convention of educational setting, and provide leadership development methods to convert innovation challenges to innovative solutions. The program is anchored to the concept of the International Association of Educational Technology (ISTE) and the Professional Education Association have established international standards for information technology development for administrators (National Educational Technology Standard for Administrators: NETS-A) in five areas: (1) visionary leadership, (2) digital learning culture, (3) professional practice excellence, (4) systemic improvement, and (5) digital citizenship. In the function of information and communication technology leadership, each area has specific tasks (International Society for Technology in Education (ISTE), 2009). In the digital age, educational administrators play a vital role. As a result, they must develop

knowledge, talents, qualities, skills, and experience in educational administration to modernize educational institutions so that they are ready for changes in the digital era by developing innovative thinking skills, technology leadership, and innovative leadership.

Program Overview

Leadership Development Methods	Program Development	Program Evaluation
1. Principle 2. Objectives 3. Contents 4. Operation procedure 5. Program evaluation	1. Analysis of program necessity 2. Program design and development 3. Using the program	1. Assessing knowledge before and after participating in the development 2. Evaluate the learning management of the development participants. 3.Evaluate the satisfaction of the development participants.

(See Appendix G for the Program Matrix)

DISCUSSION

This chapter summarizes the results from the acquired and analyzed data, as well as the conclusions drawn, and recommendations taken from the findings.

Summary of Findings

1. The Demographic Profile of the School Administrators and Teachers Respondents

According to the data, 61.5% of School Administrators and Teacher responders were 41 years of age or older, and 38.5% were in the 40-to-39-year age bracket. This shows that at least 41 years of age is the average age of the responses. Additionally, the bulk of the respondents who are teachers and school administrators are female (83.6%), while the remainder are men (16.4%). Only 6.2% of the respondents have 21–25 years of work experience, compared to the majority of school administrators and teacher respondents (24.6%) who have 26 years or more of experience in the field of education.

2. The Digital Leadership of the School Administrators

Communication

The teacher respondents concur that school administrators mostly utilize Documents, such as Word, Google Docs, and social media, as their main communication tools in demonstrating their digital leadership. This was rated the highest with a score of 3.25. Respondents perceive WhatsApp, Viber, and file-sharing services like Dropbox and WeTransfer as communication tools, although they were given a low rating and are regarded less prominent. The result demonstrates that school administrators have displayed an evident performance in terms of communication of their digital leadership skills with a composite mean of 2.75.

Digital Literacy

The school administrators utilize technology and online platforms for many purposes such as instruction, training, communication, learning, and cooperation. This demonstrates their proficiency in digital leadership, specifically in terms of digital literacy, as indicated by the highest evaluation score of 3.09. However, it is important to acknowledge that teaching subordinates how to effectively publish, utilize, and facilitate digital information for essential school data, manage digital data, collaborate with digital resources for digital record filing, analyze data-driven situations using digital knowledge, and engage with data and technology are integral components of their

digital literacy skills. Nevertheless, these indicators may not be readily apparent. Based on a mean score of 2.75, it is clear that school administrators have shown a lack of proficiency in digital literacy, which is an important aspect of their leadership capabilities.

Awareness and Adaptability

The teacher respondents concur that school administrators, in terms of digital awareness and adaptation, exhibit digital leadership by acting as discerning consumers of information. They have assigned the highest assessment score of 3.56 to this indication. It is important to highlight that school leaders believe they should offer genuine situations for technology usage while demonstrating digital leadership, even though they received a score of 3.10, which is the lowest grade. Nevertheless, school leaders, overall, have demonstrated a lower level of digital awareness and adaptation as part of their leadership skills, with an average score of 2.32, indicating a less prominent presence.

3. The Significant Difference in the Assessment of the Digital Leadership of School Administrators when the teacher-respondents are grouped according to their profile.

A unidirectional analysis revealed that the demographic characteristics of the teacher-respondents, such as age, sex, and years of teaching experience, have a significant impact on the assessment of digital leadership by school administrators. This is evident from the computed F-ratio, which exceeds the tabulated value, and the computed p-values, which are lower than the predetermined alpha level of 0.05. Examining and understanding the variations in digital leadership among school administrators when teachers, who are the responders, are categorized based on their demographic profiles provides insight into the dynamics of educational leadership and its relationship with the different attributes of the teaching staff.

4. The Digital Work Capabilities of School Administrators as assessed by the Teacher-respondents

Professional Growth and Development

The school administrators concur that implementing an up-skilling initiative that incorporates technology and offering comprehensive training on the effective utilization of digital resources are widely acknowledged as the primary methods for professional advancement and enhancement of digital proficiency. This approach received the highest rating of 3.2. Although respondents acknowledge that conducting digital workshops, showcasing the benefits of digital information and data in improving school access, and incorporating technology practices to establish a fully digitized school system are methods of professional growth and development for teachers, these indicators received a low rating and are not easily observable. The findings indicate that school administrators have demonstrated clear proficiency in terms of their professional growth and development, specifically in their digital work capabilities, with an average score of 2.56.

Technical Support

The teacher respondents who considered that technology integration is vital in giving technical help gave the highest rating of 3.30. It is the most commonly used method for providing technical help as part of the digital work skills of school heads. Furthermore, the presented indicators merely demonstrate the presence of technology integration, digital training, and digitalization of school access and data files. The technology developments and computerized resource planning and workshops were provided at rates that were not easily evident. Although respondents believe that digital

community building and constructing virtual programs for students are additional methods of providing technical support, these techniques are not as evident. The results, with a mean composite score of 2.52, indicate that school administrators' proficiency in digital work highlights the need for further attention to providing technical support.

5. The Significant Difference in the Assessment of the Digital Work Capabilities of School Administrators when the teacher-respondents are grouped according to their profile.

The age, sex, and years of teaching experience of the teacher-respondents have a significant impact on the assessment of digital work capabilities of school administrators. This is evident from the fact that the calculated F-ratio is higher than the tabulated value and the calculated p-values are lower than the alpha level of 0.05. Examining and evaluating the variations in the digital work abilities of school administrators when teachers, who are the respondents, are categorized based on their demographic features offers valuable understanding of the relationship between leadership and the attributes of the teaching staff.

6. The Teachers' Digital Performance as assessed by the School Administrators-respondents

Lesson Planning and Delivery

Documents such as Word and Google Docs are the most commonly utilized digital tools by teachers for lesson planning and delivery, with a weighted mean of 3.73. Conversely, the online assessment tool had the lowest rating of 2.97, despite being utilized by teachers in their instructional and learning practices. The teachers demonstrate very apparent proficiency in digital work when planning and delivering lessons, with an average score of 3.43.

Accomplishing Learning Materials

The table above demonstrates that nearly all of the mentioned indicators are prominent in the digital work capabilities commonly employed by teachers. However, while teachers do utilize these tools as part of their routine, the use of various technologies in education through online platforms, as well as the use of online platforms for communication, submission, instruction, and collaboration, is less evident. While creating educational materials, teachers demonstrate an evident proficiency in digital work, leading to an average composite score of 2.86.

Accomplishing School Reports

Teachers mostly rely on their adeptness in using technology for record filing and their proficiency in sharing data and reports to achieve school reports. On the other hand, showcasing accurate computerized reports without any mistakes. Despite teachers incorporating them into their everyday teaching and learning routines, the devices obtained a meager rating of 3.21, the lowest among all. The teachers' digital capabilities in completing school reports are clearly demonstrated, as evidenced by their average score of 3.38.

7. The significant relationship between the Demographic Profile, Digital Leadership, School Administrators Digital Work Capabilities, and Teachers' Digital Performance

As resulted in. the findings, it was discovered that the school leaders' age was substantially connected with their communication and digital literacy skills as leaders, but not with their awareness of and ability to adapt to changes in the digital world. Additionally, there is no relationship between the respondents' sex or years of

experience and their digital leadership abilities in terms of communication, digital literacy, awareness of technology, and flexibility. The data also shows a significant correlation between teachers' performance in terms of lesson planning and delivery, producing learning materials, and producing school reports and the digital leadership skills of school administrators in terms of communication, digital literacy, and data awareness and adaptability while the teachers' performance in terms of lesson planning and delivery, producing learning materials, and producing school reports are significantly correlated with the school administrators' digital work skills in terms of professional development programs and technological assistance.

8. The significant relationship between the Teachers' Digital Performance and Digital Leadership of School Administrators, and Digital Work Capabilities of School Administrators

Pearson r Correlation between the Teachers' Digital Performance and Digital Leadership of School Administrators

The Pearson correlation coefficient was calculated to evaluate the linear association between the digital performance of teachers and the digital leadership of school administrators in terms of communication, digital literacy, and digital awareness and adaptability. The computed Pearson correlation coefficient between the variables ranges from 0.456 to 0.648, with a corresponding p-value ranging from 0.000 to 0.032. This indicates a favorable correlation and a substantial association between the digital performance of teachers and the digital leadership of school administrators.

Pearson r Correlation between the Teachers' Digital Performance and Digital Work Capabilities of School Administrators

A Pearson correlation coefficient was calculated to evaluate the linear association between the digital performance of teachers and the digital work capabilities of school administrators in connection to professional growth and development and technological support. The computed Pearson correlation coefficient between the variables ranges from 0.571 to 0.735, with a corresponding p-value ranging from 0.000 to 0.21. This indicates a positive correlation and establishes a substantial association between the digital performance of instructors and the digital job skills of school administrators.

9. The challenges and barriers encountered by the respondents in embracing Digital Leadership and Teaching.

Embracing digital leadership and teaching

The difficulties and obstacles faced by school administrators while using digital leadership and instruction. Budget constraints obtained the highest rating (3.43), while the absence of an organizational change management strategy received the lowest rating (2.67), as can be shown. With a composite mean of 3.08, the school administrators agree that the identified difficulties and obstructions to adopting digital leadership and instruction are present.

Embracing digital leadership and teaching

The difficulties and obstacles educators face as they adopt digital leadership and instruction. As can be seen, Communication Barriers obtained the lowest rating of 3.16 while Internet Connection received the greatest rating of 3.47. With a composite mean of 3.31, the teachers' responses overall show that the difficulties and obstacles identified in embracing digital leadership and teaching are clearly obvious.

10. Proposed Digital Learning and Innovation Program and Enhance Digital Leadership for School Administrators

Based on the gathered evidence, the researcher finds it deem significant to launch a program that will support digital leadership among principals. The program "IT LEAD

for School Administrators" (Innovating Technologies Towards Learning and Advance Digitalization for School Administrators) aims to provide innovative solutions for school administrators through digital leadership that will provide digital skills that will hone digital visions, literacy, and professional practices, provide systematic improvements to incorporate technology in the convention of educational setting, and provide leadership development methods to convert innovation challenges to innovative solutions. The program is anchored to the concept of the International Association of Educational Technology (ISTE) and the Professional Education Association have established international standards for information technology development for administrators (National Educational Technology Standard for Administrators: NETS-A) in five areas: (1) visionary leadership, (2) digital learning culture, (3) professional practice excellence, (4) systemic improvement, and (5) digital citizenship.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. The ability of educational leaders, regardless of age group, to develop, adopt, and implement efficient digital interventions are enabled, acceptable, and necessary in contemporary workplaces.
2. The findings demonstrate that school administrators have demonstrated a clearly visible performance in terms of communicating their digital leadership. However, they also have shown weakness in digital literacy as a component of their leadership skills by using technology and online platforms for communication like WhatsApp, and Viber, and collaboration such as file sharing like Dropbox and WeTransfer.
3. Based on the analysis of correlation, the demographic characteristics of the teacher-respondents, such as age, sex, and years of teaching experience, have a substantial impact on the evaluation of the digital leadership of school administrators.
4. It is concluded that the most widely accepted method of professional development is conducting an up-skilling program that requires the use of technology and providing 100% training on the usability of digital resources have demonstrated a strong evident performance in terms of professional growth and development, and providing technical support is through the digitization of school access, data files, and technological integration as demonstrated by their capacities to use digital tools in their work.
5. The age, sex, and years of teaching experience of the teacher-respondents have a substantial impact on the evaluation of the digital job capacities of school leaders. Upon analyzing a blend of demographic parameters, strange trends became evident. Younger, male teachers with minimal experience were more likely to value school leaders who encouraged and embraced digital innovation.
6. According to the study's findings, teachers demonstrate highly visible talents in digital work throughout class design, lesson planning and delivery, while the usage of online platforms for communication, submission, instruction, and cooperation is also highly regarded in terms of the digital work capabilities most used by teachers for the purpose of completing learning materials.
7. The school administrators' demographic profile in terms of age was shown to be substantially connected with their digital leadership skills in terms of communication and digital literacy, but not with digital awareness and adaptability.
8. A positive connection was observed, indicating a significant association between the digital performance of teachers and the digital leadership of school administrators. The correlation between the two is noteworthy as school leaders who advocate for

and prioritize digital leadership can motivate and empower their educators to thrive in their digital proficiency. The successful link frequently leads to a technologically advanced and efficient educational setting.

9. According to the experiences of school leaders and teachers, the toughest issues they must face for digital leadership are "Budget Constraint," "Gadgets and other technologies in class," and the “internet connection” as the biggest factor.
10. To impart solutions to the issues and challenges in digital leadership, there is a need to implement a digital learning and innovation program as well as to enhance digital leadership for school administrators. These programs will raise the digital leadership of the school administrators and will impact the digital performance of the teachers.

Recommendations

1. Accessibility is a critical component in the implementation of inclusive education and is critical to promote the benefits of technology to increase educational standards for all individuals of various ages. It is recommended that the Department of Education must provide access to digital leadership mostly with the senior administrators who are still adjusting to technological advancement.
2. Leaders must learn to assess whether digital techniques or technologies can improve communication, public relations, branding, student participation/learning, professional growth/development, reinventing regions, and earning and opportunity settings. Administrators and teachers must use technology to alter professional practices and incorporate technology into school culture.
3. It is advisable to create tailored leadership training programs that cater to the distinct requirements and inclinations of various demographic groups. For instance, programs could prioritize the development of creativity and skill-building for younger female educators, while placing emphasis on effective digital system management for older, less experienced male educators.
4. To innovate, school leaders must have a diverse collection of skill sets, attitudes, knowledge, and professional and personal experiences, as well as be agile, adaptive, and eager. Teachers, on the other hand, must have access to professional learning opportunities that correspond with the digital leadership vision for the digitization process to be effective. Educators and administrators must develop the technical skills and confidence needed to implement new digital literacies.
5. It is advisable to form committees or working groups specifically focused on digital innovation within the institution. Ensure that these committees consist of people from diverse demographics in order to promote a cooperative and inclusive approach to deploying new technologies and sustaining existing digital systems.
6. Every significant transformation provides a source of innovation, that's why teachers must implement projects to identify the most effective venues for digital learning and creativity to innovate.
7. While age may not be a significant factor, it is important to integrate training on digital awareness and adaptability within the broader professional development initiatives for school administrators.
8. The vision of the leaders has undoubtedly played an important part in the development of digitalization. The school administrators must investigate how to engage with the digital revolution of educational institutions.
9. School administrators must learn to estimate the whole cost of purchasing and maintaining an adequate technology network in classrooms and across the district,

which includes costs for support, professional development, hardware, software, replacement, connectivity, and retrofitting.

10. The proposed digital learning and innovation program and enhance digital leadership for school administrators may be implemented to support the digital leadership of the school administrators and the digital performance of the teachers.

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