



DIGITAL TRANSFORMATION IN EDUCATIONAL ADMINISTRATION: A MIXED-METHOD STUDY OF LEADERSHIP STRATEGIES DURING REMOTE LEARNING IMPLEMENTATION

Rachel Mae Jusay¹

¹Student, Graduate School, Rizal Memorial Colleges, Inc.

Article DOI: <https://doi.org/10.36713/epra21876>

DOI No: 10.36713/epra21876

ABSTRACT

The purpose of this mixed-methods study was to examine and analysed the leadership strategies employed by K-12 educational administrators during the implementation of remote learning systems, aiming to develop an evidence-based framework for effective digital transformation in educational settings. The study focused on 6 school principals and 133 teachers from K-12 schools that underwent digital transformation for remote learning during the pandemic. Participants will be selected using purposive sampling to ensure that those with direct involvement in leadership roles during the remote learning implementation are included. The findings of this study offer significant implications for educational leadership, policy, and practice, particularly in the context of digital transformation in Philippine schools. As the role of school leaders evolves in response to technological advancements and shifting educational landscapes, it becomes clear that effective leadership must go beyond traditional models. This section outlines how the emergent themes such as participative leadership, digital literacy, inclusive decision-making, and prioritizing well-being can inform and reshape leadership approaches in schools.

KEYWORDS- Digital Transformation, Educational Administration, A Mixed-Method Study, Leadership Strategies, Remote Learning Implementation

INTRODUCTION

The integration of digital technologies in educational administration has long been recognized as crucial for fostering efficiency, accessibility, and innovation. However, the shift to remote learning has exposed persistent challenges, including digital inequities, inadequate infrastructure, and gaps in leadership strategies. These issues are problematic as they hinder the ability of schools to provide equitable and effective learning experiences, particularly in contexts where technological adoption remains inconsistent. This study is significant because it seeks to understand how educational leaders navigate the complexities of implementing remote learning, addressing barriers, and fostering collaboration among stakeholders. Through examining leadership strategies in this context, the research contributes to the broader discourse on digital transformation in education, offering insights that can guide future initiatives to enhance educational systems in an increasingly digital era.

School leaders had to quickly shift their perception of technology, recognizing it not merely as a supplementary tool but as an integral component of daily operations and decision-making processes. This transformation required them to move beyond basic familiarity with digital platforms and embrace a mindset of innovation and adaptability. For many administrators who had been resistant to or hesitant about adopting new technologies, this shift was not optional—it became a necessity for sustaining effective communication, instruction, and management, (Education Week, 2021).

According to District Administration Magazine (2020), successful school districts adopted multi-channel communication strategies to effectively engage with students, parents, and staff during the implementation of remote learning. These strategies often utilized 3–5 different platforms, including email, learning management systems, video conferencing tools, social media, and mobile applications. By diversifying communication channels, districts ensured that critical information reached stakeholders through their preferred mediums, enhancing accessibility and engagement. This approach not only streamlined communication but also built trust and transparency, as stakeholders felt consistently informed and supported during a time of significant educational transformation.

In the article "Leading Virtual Learning" (Education Leadership Magazine, 2020), principals reflected on their evolving roles during the transition to virtual learning, describing the shift from being traditional building managers to digital learning facilitators. This transformation required them to prioritize technological fluency and instructional leadership over the conventional tasks associated with managing physical school environments.

Herold (2021), in "The New Face of School Leadership" (Education Week, 40), further highlights this evolution, emphasizing how school leaders had to reimagine their responsibilities to meet the demands of virtual education. These included fostering digital literacy among staff, ensuring equitable access to technology, and maintaining strong connections with the school community in a virtual context. Together, these perspectives illustrate the



profound changes in educational leadership brought about by the need to integrate and lead digital learning initiatives effectively.

In *The Global Achievement Gap* (2019), Wagner emphasizes that technology, when harnessed effectively, can act as a powerful tool in closing learning gaps. He underscores its ability to deliver personalized instruction, tailoring educational experiences to meet the diverse needs of learners. Technology enables students to progress at their own pace, access resources that match their learning styles, and receive immediate feedback, fostering deeper understanding and mastery of content.

The emergence of teacher-led tech support networks, as highlighted in *Edutopia* (2020) and detailed by Richardson in "Learning to Lead Online" underscores the pivotal role of educators in navigating the complexities of technology integration in schools. These networks, often grassroots initiatives, exemplify how teachers can collaboratively address technological challenges, share best practices, and foster professional growth in an increasingly digital educational landscape.

Digital transformation in educational administration has been a focal point in the Philippines, particularly in Davao City and the broader Mindanao region. The Commission on Higher Education Regional Office XI (CHEDRO XI) has been instrumental in this shift, implementing various initiatives to digitize educational services. Notably, CHEDRO XI automated processes such as the application and processing of Special Orders and the Certification, Authentication, and Verification of academic documents. These efforts have significantly reduced lead times for frontline services, enhancing efficiency and accessibility for stakeholders.

Meanwhile in Davao Occidental, an article by Aquino (2022) stated that the Schools Division of Davao Occidental, under the leadership of Schools Division Superintendent and Assistant SDS, spearheaded a groundbreaking digital transformation in response to the challenges posed by the crisis. This transformation was part of a larger effort to align with DepEd's quality management standards and its flagship project, *Sulong EduKalidad*, aimed at enhancing curriculum delivery and school governance. Through transformational leadership model focused on motivational inspiration, intellectual stimulation, and individualized support, creating a resilient, digitally empowered system that enhanced productivity and improved customer experiences amid the pandemic. The division's digital transformation not only addressed immediate challenges but also set the foundation for sustainable progress in basic education.

In Davao City, the Department of Information and Communications Technology (DICT) has also played a pivotal role in bridging the digital divide in the Davao Region. Through the establishment of digital transformation centers and the expansion of free WiFi services, particularly in underserved and remote areas, DICT aims to provide equitable access to technology. These initiatives are essential for education, connectivity, and economic opportunities in geographically isolated and disadvantaged areas, ensuring sustainable development and inclusivity for communities that have long been digitally marginalized (Open GovAsia, 2024).

LITERATURE REVIEW

In a research by Anderson and Smith (2021) across urban schools in London examined how school leaders successfully managed rapid digital transformation. Their study revealed that effective leaders implemented phased approaches to technology adoption, prioritized teacher training, and established clear communication channels. These leaders also focused on building a culture of innovation by fostering collaboration among stakeholders, ensuring that staff felt supported and empowered during the transition. The research highlighted how successful principals created "digital champions" within their staff to provide peer support and act as catalysts for promoting the effective use of digital tools. Additionally, the study emphasized the importance of aligning technology integration with the school's broader educational goals, ensuring that the digital transformation enhanced both teaching practices and student outcomes. Anderson and Smith also identified the role of continuous feedback loops, where school leaders actively sought input from teachers, students, and parents to refine strategies and address emerging challenges effectively.

In Singapore, Tan and Wong (2020) studied leadership approaches during the sudden shift to remote learning. Their findings showed that successful leaders focused on building digital infrastructure while simultaneously addressing equity issues, particularly in providing devices and internet access to underprivileged students. The study emphasized the importance of distributed leadership in managing technical and pedagogical challenges.

The integration of technology in educational settings has been a subject of significant research over the past several decades. Early studies in London by Anderson & Davis (2019) focused primarily on the technical aspects of implementation, with limited attention to leadership dimensions. However, as digital transformation became more complex, research began shifting towards understanding the critical role of leadership in successful technology integration.

Additionally, in a comprehensive three-year longitudinal study, Lee and Wong (2023) examined Singapore's ambitious nationwide educational digital transformation across 50 primary and secondary schools. Their findings underscored the effectiveness of combining structured top-down support with grassroots, bottom-up innovation to drive sustainable digital adoption within schools. This approach provided administrators with a framework to guide



digital initiatives, while empowering teachers to innovate and adapt technology to their specific classroom needs, creating a balance between strategic oversight and practical application.

Also, a comprehensive study by Miller et al. (2021) in Australian schools documented how leaders effectively managed change during digital transformation. The research revealed successful strategies including creating cross-functional teams, implementing regular feedback mechanisms, and developing flexible policies that could adapt to emerging challenges during remote learning implementation. These leaders also prioritized stakeholder engagement, ensuring that teachers, students, and parents were actively involved in the decision-making process to foster a sense of ownership and collaboration.

In particular, Santos and Garcia (2021) examined leadership strategies in Metro Manila schools during the pandemic-induced digital transformation. Their research highlighted how successful leaders balanced technological integration with considerations for students' varied socioeconomic backgrounds, implementing hybrid solutions that included both digital and modular learning approaches.

Consequently, a study conducted across urban schools in Cebu documented effective leadership practices in managing the transition to remote learning (Dela Cruz, 2020). The findings highlighted how successful principals established robust support systems for teachers' professional development, equipping them with the necessary skills and resources to adapt to digital platforms. Simultaneously, these leaders prioritized student well-being and ensured learning continuity by implementing inclusive strategies, such as providing access to digital tools, offering flexible learning schedules, and maintaining consistent communication with students and parents. The research also underscored the importance of fostering a collaborative school culture, where teachers, staff, and administrators worked together to address challenges and innovate solutions during the transition.

Additionally, the researchers emphasized the need for continuous professional development programs tailored to equip educators with the competencies required for navigating new technologies. Leaders who succeeded in this transformation also implemented systems for monitoring and evaluating the impact of digital tools on teaching and learning, allowing for timely adjustments. Furthermore, the study revealed that fostering an inclusive and supportive school environment, where stakeholders felt empowered and heard, was integral to overcoming challenges and sustaining progress in remote learning initiatives, (Reyes and Bautista, 2021).

Martinez and Rodriguez (2022) conducted a case study focusing on school leaders in Davao City during the digital transformation period. Their research highlighted innovative strategies employed to address infrastructure limitations, such as forging partnerships with local businesses to provide internet connectivity solutions for schools and communities. These collaborations not only bridged the digital divide but also fostered a sense of shared responsibility among stakeholders. Additionally, the study revealed creative approaches to teacher training in remote areas, including the use of offline digital resources, mobile learning units, and peer mentoring programs to ensure educators were equipped to adapt to new technologies. The research also emphasized the leaders' commitment to inclusivity, showcasing efforts to support marginalized students and teachers through targeted interventions, such as subsidized devices and localized instructional materials tailored to community needs.

Research Questions

This study examines organizational change management in the context of digital transformation. In exploring the relationship between leadership approaches and institutional adaptation, it assesses how organizational structures and existing resources influenced the effectiveness of digital initiatives. The impact of change management strategies on teacher adoption and student engagement will also be a critical focus, offering insight into the dynamics of educational change. Specifically, this study will answer the following questions:

1. What is the level of Digital Transformation during Remote Learning implementation in terms of:
 - 1.1 Digital Competencies
 - 1.2 Professional Development
 - 1.3 Access to technologies
2. What is the level of Leadership Strategies during Remote Learning implementation in terms of:
 - 2.1 Authoritarian Leadership
 - 2.2 Democratic Leadership
 - 2.3 Laissez-Faire Leadership
3. Is there a significant relationship between Digital Transformation and Leadership Strategies during Remote Learning implementation?
4. What are the experiences of the educational administrators towards Digital Transformation and their Leadership Strategies during Remote Learning implementation?
5. How did administrators' cope up with the challenges towards Digital Transformation and their Leadership Strategies during Remote Learning implementation?
6. What are the educational insights gained by the educational administrators towards Digital Transformation and their Leadership Strategies during Remote Learning implementation?



METHODOLOGY

Research Design

The research design for this study was mixed-method, which involved combining both quantitative and qualitative approaches to provide a comprehensive understanding of the leadership strategies employed during the digital transformation in educational administration, particularly during the implementation of remote learning. This design allowed the researcher to explore the leadership strategies from different angles and generate both statistical data (quantitative) and deeper, contextual insights (qualitative).

The quantitative aspect of the study aimed to measure the effectiveness of various leadership strategies in facilitating remote learning adoption and engagement. The use of surveys and other structured instruments helped capture numerical data regarding leadership practices, technology adoption rates, and outcomes such as teacher engagement and student participation.

Research Participants

The study involved a combination of quantitative and qualitative participants, selected to provide a holistic understanding of how school leaders and teachers navigated the digital transformation for remote learning during the pandemic. The research design incorporates both purposive sampling and random sampling to ensure that the participants are relevant to the study's focus and adequately represent the diverse experiences of administrators and teachers.

The study focused on 6 school principals and 133 teachers from K-12 schools that underwent digital transformation for remote learning during the pandemic. Participants will be selected using purposive sampling to ensure that those with direct involvement in leadership roles during the remote learning implementation are included.

Research Instrument

For this mixed-methods study, the research instruments was designed to gather both quantitative and qualitative data effectively.

Quantitative Instrument

Surveys/Questionnaires: These were used to collect numerical data on various leadership strategies, technology adoption, and perceived success of remote learning implementation. The surveys will include Likert-scale questions to measure leadership styles (transformational, transactional, etc.), the extent of digital technology use, teacher engagement, and satisfaction with remote learning.

Pre- and Post-Surveys: These were assess changes in teacher and student engagement, technology integration, and overall leadership effectiveness before and after remote learning implementation.

Qualitative Instrument

Semi-structured interviews served as the primary qualitative instrument for collecting data in this study. This approach allows for flexibility and depth, enabling researchers to explore school administrators' leadership strategies during the digital transformation process while still maintaining a consistent focus on key themes. Semi-structured interviews are particularly effective for gathering rich, detailed data about personal experiences, perceptions, and reflections, which are central to understanding how educational leaders navigated the transition to digital learning.

Data Analysis

The qualitative data collected through In-Depth Interviews (IDI) with school principals and selected teachers, as well as the Focus Group Discussions (FGD) with teachers, was analyzed using thematic analysis. This method involved identifying, analyzing, and reporting patterns (themes) within the qualitative data, providing a rich and detailed account of the participants' experiences and insights.

RESULTS AND DISCUSSION

Implication

The quantitative correlations and the qualitative themes converge on a common narrative: professional growth and open, collaborative leadership drive successful digital transformation, whereas top down control impedes it.

1. Professional Development \rightleftharpoons Democratic Leadership ($r = 0.72$)

Quantitative insight: Schools that invested heavily in teacher up skilling also scored high on democratic leadership indicators.

Qualitative echo: Main Theme 1—“Strengthening Communication and Collaboration” captures teachers' stories of being invited into planning meetings, peer led webinars, and shared decision making forums. Participants described feeling “heard” and “co responsible,” a hallmark of democratic practice. Together, the statistics and narratives show that robust PD programs flourish when leadership distributes voice and agency across the staff.

2. Digital Competencies \rightleftharpoons (-) Authoritarian Leadership ($r = -0.35$)

Quantitative insight: Higher teacher tech skills aligned with lower scores on authoritarian traits .

Qualitative echo: Main Theme 3—“Transformative Educational Leadership Amid the Digital Shift” illustrates leaders who empowered teams, encouraged experimentation, and provided autonomy in selecting digital tools. Teachers contrasted this “transformative” style with earlier authoritarian mandates that had stifled innovation. Their



testimonies confirm the inverse relationship: as leaders loosen control and foster trust, digital competence—and confidence—rises.

3. Equity and Access Overlay, While quantitative data flagged only moderate infrastructure access, interviews revealed that communicative, transformative leaders actively lobbied for devices and connectivity for disadvantaged learners, often through community partnerships. This qualitative layer helps explain why some schools outperformed others despite similar resource constraints: leadership style mediated how effectively existing resources were leveraged.

Synthesis:

- Democratic, communicative leadership does more than boost morale; it creates fertile ground for sustained professional learning that, in turn, elevates digital practice.
- Conversely, authoritarian approaches dampen digital competence growth, reinforcing the quantitative negative correlation.
- Therefore, to strengthen future digital initiatives, schools should pair systematic Professional Development with inclusive, distributed leadership structures, ensuring that technical capacity and human agency rise together.

Future Directions

Building on the insights gained from this study, future directions for educational leadership amid digital transformation should focus on fostering sustainable practices that address both technological advancements and human-centered needs. As schools continue to navigate the evolving digital landscape, it becomes essential to prioritize ongoing professional development, adaptive leadership strategies, and inclusive communication approaches that empower all stakeholders. The following future directions highlight key areas for improvement and innovation for the Department of Education, school principals, teachers, and researchers to ensure effective and equitable digital integration in education.

Based on the findings of this study, several future directions are recommended for the Department of Education (DepEd), school principals, teachers, and future researchers to enhance digital transformation and leadership in educational settings.

For DepEd. There is a need to develop comprehensive policies and programs that support continuous professional development focused on digital literacy, adaptive leadership, and emotional well-being. Investing in infrastructure and ensuring equitable access to technology across diverse school contexts, particularly in underserved areas, will be crucial to bridging existing gaps and fostering inclusive digital learning environments. Moreover, DepEd should promote platforms for collaboration and knowledge-sharing among schools to encourage best practices and collective growth.

For school principals. The study highlights the importance of evolving leadership styles toward more participative, flexible, and empathetic approaches. Principals are encouraged to foster a culture of collaboration among faculty, engage teachers actively in decision-making, and prioritize the well-being of both students and staff during digital transitions. Developing skills in data-driven decision-making and effective communication will empower principals to lead change more confidently and responsively, ensuring that technology integration aligns with the real-time needs of their schools.

For teachers. Embracing a growth mindset and openness to continuous learning will be key to navigating the digital shift effectively. Teachers should actively participate in peer mentoring, collaborative planning, and professional development opportunities that enhance both their technological skills and instructional strategies. Emphasizing emotional resilience and student well-being alongside academic goals will contribute to a more holistic educational experience, better preparing learners for future challenges.

For future researchers. This study opens pathways for further exploration into the long-term impacts of digital leadership on student outcomes, especially in varying socio-economic and cultural contexts. Investigating the effectiveness of specific leadership training programs and community engagement models can provide deeper insights into sustainable digital transformation. Additionally, future research could explore the intersection of indigenous knowledge and digital education, aiming to create culturally responsive leadership frameworks that address the unique needs of diverse Filipino communities.

REFERENCES

1. Abella, M., & Mindaro, R. (2023). *Digital transformation in CARAGA schools: Leadership challenges and opportunities*. *Mindanao Journal of Education*, 15(2), 78-92.
2. Anderson, K., & Davis, R. (2019). *Technology Integration in Education: A Historical Perspective*. *Educational Technology Quarterly*, 45(2), 112-128.
3. Anderson, P., & Smith, J. (2021). *Digital transformation leadership in London schools: A study of effective practices*. *International Journal of Educational Leadership*, 45(3), 234-251.
4. Aquino, R. (2022). *Transformational leaders leading a digital transformation*. https://www.facebook.com/story.php?id=100067065554782&story_fbid=288431936735656&_rdr.
5. Atkinson, T., & Pilgreen, T. (2011). *Adopting the Transformational Leadership Perspective in a Complex Research Environment*. *Research Management Review*, 18(1). <https://files.eric.ed.gov/fulltext/EJ980456.pdf>



6. Bautista, R. A. (2021). Leadership in remote learning: A study of school administrators' strategies in the Philippines during the COVID-19 pandemic. *Journal of Educational Leadership and Policy Studies*, 8(2), 134-145.
7. Bersin, J. (2019). Leadership strategies for driving digital transformation in education. *Harvard Business Review*, 97(6), 40-48.
8. Burns, J. M. (1978). *Leadership*. Harper & Row.
9. Cruz, G. A. (2018). The role of school leadership in teacher professional development in rural schools in the Philippines. *Philippine Journal of Education*, 91(3), 45-60.
10. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
11. De la Cruz, A. (2020). Impact of school leadership on digital transformation in Philippine education. *Philippine Educational Review*, 25(2), 102-118.
12. Dela Cruz, M. P. (2020). Leadership practices in remote learning transition: Insights from Cebu schools. *Philippine Educational Leadership Review*, 38(2), 89-106.
13. Dharmaraj, S. (2024). Bridging the Digital Divide in the Philippines: Davao Connectivity. <https://opengovasia.com/2024/11/28/bridging-the-digital-divide-in-the-philippines-davao-connectivity>.
14. Fullan, M., & Langworthy, M. (2019). *A rich seam: How new pedagogies find deep learning*. Pearson.
15. Gonzales, M. S. (2022). Leadership strategies and organizational factors in digital transformation in Mindanao schools. *Mindanao Journal of Educational Research*, 14(3), 45-58.
16. Green, E. (2020). "The Digital Divide in American Education." *The Washington Post*.
17. Herold, B. (2021). "The New Face of School Leadership." *Education Week*, 40(15).
18. Heifetz, R. A., Grashow, A., & Linsky, M. (2009). *The practice of adaptive leadership: Tools and tactics for changing your organization and the world*. Harvard Business Press.
19. Hughes, J., & McLeod, J. (2019). Organizational factors in the leadership of educational technology transformation. *Journal of Educational Leadership*, 17(4), 45-58.
20. Lee, K., & Wong, S. (2023). Singapore's journey toward digital education excellence. *International Journal of Educational Technology*, 42(3), 201-218.
21. Leithwood, K., & Jantzi, D. (2019). The effects of transformational leadership on teachers' commitment to change in schools. *Journal of Educational Administration*, 38(2), 112-129.
22. Ma, Q., & Liu, L. (2005, January). The Technology Acceptance Model. ResearchGate. https://www.researchgate.net/publication/314410967_The_Technology_Acceptance_Model
23. Martinez, R. A., & Rodriguez, S. T. (2022). Digital transformation leadership in Davao City schools: Strategies and outcomes. *Mindanao Education Quarterly*, 16(1), 45-62.
24. Martinez, R. (2021). "Supporting Student Wellbeing in Virtual Spaces." *School Counselor*.
25. Miller, K., Thompson, L., & Wilson, S. (2021). Managing educational change during digital transformation: An Australian perspective. *Educational Management Administration & Leadership*, 49(4), 567-584.
26. Oblianda, L. (2024, July 7). CHED RO XI Awarded as Government Champion for Digital Transformation at DEVCON Mindanao Summit 2024. https://ro11.ched.gov.ph/2024/07/01/ched-ro-xi-awarded-as-government-champion-for-digital-transformation/9085/press-release/?utm_source
27. Puno, D. (2019). Leadership strategies for successful digital transformation in Philippine schools. *Philippine Journal of Educational Leadership*, 10(1), 23-37.
28. Reyes, A., Santos, B., & Cruz, M. (2023). Digital readiness in Philippine public schools: A national survey. *Philippine Education Quarterly*, 38(4), 156-173.
29. Reyes, P. T., & Bautista, R. P. (2021). Leadership approaches in Philippine schools' digital transformation. *Philippine Journal of Education*, 99(2), 123-140.
30. Richardson, W. (2020). "Learning to Lead Online." *Educational Leadership*, 78(3).
31. Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
32. Santiago, C. (2021). Leadership and organizational factors in the digital transformation of Philippine schools. *Philippine Journal of Educational Administration*, 18(1), 77-90.
33. Santos, J., & Dela Cruz, P. (2023). Evaluating DepEd's Digital Rise Program: Implementation and outcomes. *Philippine Journal of Education*, 45(2), 112-128.
34. Santos, M. A., & Garcia, R. T. (2021). Leadership strategies during remote learning transition in Metro Manila schools. *Journal of Educational Administration in Southeast Asia*, 3(2), 78-95.
35. Santos, M. S. (2022). Leadership strategies in managing digital transformation in Mindanao schools: Impacts on teacher adaptation and student engagement. *Mindanao Journal of Education*, 14(1), 23-38.
36. Spillane, J. P., & Diamond, J. B. (2019). *Distributed leadership in practice*. Teachers College Press.
37. Tan, C. Y., & Wong, M. S. (2020). Digital transformation leadership in Singapore schools during COVID-19. *School Leadership & Management*, 40(3), 298-315.
38. Thompson, R., Wilson, J., & Brown, K. (2022). Crisis leadership in British education: Digital transformation during global pandemic. *British Educational Research Journal*, 48(3), 445-462.
39. Yukl, G. (2010). *Leadership in organizations* (7th ed.). Pearson.
40. Tũaño, A. M. (2020). Leadership practices and their impact on teacher motivation and student outcomes in Philippine public schools. *Philippine Journal of Educational Administration*, 15(1), 78-92.
41. Wagner, T. (2019). *The Global Achievement Gap: Why Even Our Best Schools Don't Teach the New Survival Skills Our Children Need, and What We Can Do about It*. New York: Basic Books.