

A Review on Developing Digital Leadership: Assessing Strategies and Implications to Generate Links for Promoting Digital Leadership in Higher Education Institutions

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ABSTRACT

This review explores the transformative impact of digital technologies in academia and the essential role of educational leadership in fostering innovation and digital transformation. Investigating strategies used by educational leaders, the study examines their effects on university culture, instructional quality, and the overall educational environment in traditional and digital practice. Digital leadership, encompassing mindset, behavior, and skills for technology-driven transformation, emerges as crucial for navigating the challenges of the 21st-century educational landscape. The synthesis of diverse studies focuses the multifaceted nature of digital leadership, advocating for adaptable, visionary leadership approaches to address digital era challenges. Furthermore, the paper emphasizes the need for a structured framework, skill development initiatives, and policy changes to align leadership styles with the demands of the evolving digital environment in higher education.

Keywords: *Digital leadership; Educational Transformation; Leadership Paradigms; Strategies; Implications*

Introduction

The dynamic educational landscape has brought about a transformation in the ways that instructors educate, students learn, and institutional administration lead through the integration of digital technologies. As we now live in a digital age, the administration needs to be at the forefront of innovation, a catalyst for change, and an architect of digital transformation.

When the education went back to traditional educational system, everything went back to the way universities used to have. Due to the pandemic, management returned to the conventional form, where face-to-face meetings with the university community will occur in full force. Additionally, hybrid instruction and learning were also set aside. Due to this circumstance, the researcher, decided to look into different approaches and its implication to other universities.

The investigation conducted by the researcher centers on the vital role that school administrators have in promoting digital leadership practices inside their organizations. The primary objective is to discover the

strategies by the educational leaders to promote the culture of digital leadership. In addition, the researcher's objective is to connect the strategies and implications to generate links for promoting digital leadership in higher educations.

The digital environment offers a broad scope of opportunities and challenges. Educational leaders are required to become proficient not only in managing the university but also in becoming digitally skilled as it is now the demands of the 21st century. The pandemic brings a realization that the educational system should move forward and not otherwise. The impact of lockdown offers a great opportunity to every university to have an open mind to embrace the changes it brought to the educational system. Effective digital leadership may significantly impact the university's educational environment that offers various experiences both instructors and students.

This study analyzed various strategies utilized to foster digital leadership and to determine the result of those strategies on the university environment, professors, and students. The insight gained from this study may assist other universities about the practices of the current educational leaders who have started navigating digital leadership in their institutions. This study sought to answer the following questions: (1) What are the strategies in digital leadership?; (2) What are the implications of digital leadership?; (3) What are the generated links between digital leadership strategies and implications of digital leadership?

Digital Leadership

Digital leadership encompasses a combination of mindset, behavior, and skills aimed at fostering a transformative educational culture through technology utilization. This shift towards digital leadership is vital in addressing the challenges and determining the necessary managerial competencies for a successful digital transition (Sheniger, 2019). It is further defined as utilizing instructional technology, digital learning culture, and resources to drive institutional digital transformation, foster a culture of digital learning, and enhance technology-based professional development (Zhong, 2017).

The digital transformation of an institution is a critical process in ensuring its stability in an increasingly digitized world. To achieve this transformation, leaders must cultivate a culture that leverages digital technology for efficient information dissemination, easy access to information, and anticipates changes crucial to the institution's future success (Sainger, 2018) (Jameson, et al., 2022), and are expected to act fast and be flexible in managing the digital transformation of the institution (Klein, 2020). To digitally transform, there must be an organization that is new, changed, and individuals with unified values. (Tanniru & Peral, 2021)

Moreover, digital leadership is pivotal in promoting digital learning and enhancing digital literacy among inherently tech-savvy students (Gamrawi and Tamim). Leaders must acquire digital literacy to utilize technology tools for community enhancement effectively. This not only pertains to managing the institution but also to handling technology-based tasks. Therefore, it is imperative for leaders to strategically plan their digital literacy development to align their institution with the skills required in the 21st century (Charles, 2018).

Key Findings and Synthesis

Digital leadership research in various domains reveals critical insights into the evolving landscape of leadership practices and the challenges digitalization poses. Jameson et al., (2022) highlight the escalating interest in digital leadership research within higher education. Despite this, they underscore methodological constraints and the absence of a unified theoretical framework, advocating for a maturity framework to guide research and policy, urging for comprehensive perspectives and in-depth explorations at institutional levels.

Klus & Müller, (2021) identified crucial competencies for effective digital leadership, emphasizing the impact of entrepreneurial thinking, IT proficiency, and motivation on managing digital challenges. They found that strong team-playing skills were not necessarily advantageous, underscoring the significance of adaptability, creativity, and the ability to navigate rapid digital changes. Ilomäki & Lakkala, (2018) proposed an innovative digital school model highlighting leadership's central role in utilizing digital resources for school improvement. Antonopoulou et al. (2021) found a positive correlation between transformational leadership and digital leadership in university departments, emphasizing the importance of transformational approaches in driving effective digital outcomes. Jakubik & Berazhny, (2021) emphasized the evolving leadership paradigms influenced by digitalization, highlighting a shift towards collaborative, network-centric practices marked by trust and co-creation in the creative economy.

Moreover, Khan's (2016) exploration underscored six characteristics reshaping leadership practices in response to digitalization. This accentuated leaders' need to adapt their approaches, leveraging digital tools to navigate complex organizational landscapes. Conversely, Markova (2014) emphasized leadership's role in integrating educational technology, stressing alignment between technological integration and pedagogical objectives to create transformative learning environments.

Moore's qualitative study showcased the pivotal role of principals in shaping technology-rich learning spaces, emphasizing crucial digital leadership behaviors such as hands-on training, positive attitudes, and offering direct support. Ghamrawi and Tamim (2023) typology outlined multifaceted skill sets and cultural attributes necessary for successful digital transitions in higher education.

Synthesizing these studies underscores the multifaceted nature of digital leadership and its implications. Effective digital leadership demands embracing digital tools, cultivating supportive environments, offering unwavering support, and advocating for digital initiatives. These findings collectively emphasize the need for a nuanced blend of technological integration, pedagogical alignment, supportive leadership behaviors, and adept governance to navigate the digital landscape effectively.

These studies highlight the multifaceted nature of digital leadership, emphasizing the critical need for adaptable, visionary, and transformative leadership approaches to address the challenges and opportunities presented by the digital era.

Strategies in Digital Leadership

Digital leadership in higher education and organizational settings is a rapidly evolving field critical for navigating the complexities of the digital era. Numerous studies underscore the urgency of understanding and implementing effective digital leadership strategies. The reviewed research emphasizes several key strategies and their implications, paving the way for an enhanced digital leadership landscape.

Leadership strategies in the digital generation involve a seamless integration of digitalization's characteristics into leadership styles, leveraging interconnectedness, transparency, and the dissolution of hierarchical barriers through adept use of digital tools. Markova's model underscores the need for leaders to cultivate a supportive culture facilitating technological integration, offering essential support, and enabling training opportunities for instructors amidst evolving learning processes. Digital leadership strategies is pivotal for principals to aid teachers in technology utilization, emphasizing hands-on training, fostering positive attitudes, and providing crucial support (Ghamrawi & M. Tamim, 2023). Moreover, the research collectively emphasizes the indispensability of transformational leadership bolstered by digital skills, particularly in academic contexts, to drive effective leadership outcomes.

Digital leadership encompasses a multifaceted domain that necessitates a comprehensive understanding of its skills and competencies. Scholars like Jameson et al., (2022) have emphasized the need for a coherent definition and operationalization of digital leadership, particularly in higher education, highlighting the scarcity in conceptual frameworks and theories. (Klus & Müller, 2021) elaborate on this by emphasizing crucial leadership skills for navigating the digital landscape. Entrepreneurial thinking, self-organization, IT competencies, and adaptability in rapidly changing environments are fundamental skills for effective digital leadership.

A significant cornerstone in digital leadership lies in embracing transformational leadership styles. Antonopoulou et al., (2020) illuminate the strong correlation between transformational leadership and the successful implementation of digital initiatives in higher education. Visionary leadership that fosters efficiency and worker satisfaction is pivotal in driving digital transformation within educational institutions. Digital leaders have the motivation to collaborate and to take risk in the changing world (Sagbas & Erdogan, 2022). In addition, digital leadership requires vision of transformation, employees' engagement in technological advancements and must build an organization in the 4.0 era of digitalization (Anindhyta, Karnati, & Suryadi, 2023).

The formulation of a robust strategy for digitalization stands as a critical aspect in steering higher education institutions towards successful digital transformation. Ehlers (2020) underscores the urgency for universities to develop coherent strategies that guide the digitalization process. The lack of research in educational leadership about digitalization calls for a structured framework to guide higher education institutions, ensuring consistency and coherence in digital strategies.

In line with the evolving digital landscape, Jakubik & Berazhny (2021) advocate for a paradigm shift in leadership models from traditional command-and-control structures to collaborative, trust-based approaches.

Trust, collaborative learning, and networked communication surface as essential components of contemporary leadership paradigms in the digital era, fostering a more adaptive and responsive environment.

Empowering educators and recognizing the complexities of integrating digital technologies into education is pivotal. Holt (2019) emphasizes the significance of educators' perspectives and digital teaching habits in shaping effective digital education. Addressing educators' upskilling needs and acknowledging the nuances in their digital teaching methods are crucial for successful digital integration in further education contexts. Karakose, Polat, and Papadakis (2021) added that educators should have adequate knowledge about the available digital tools, latest technology, and new technological capacities that they can use in their educational leadership.

Implications in Digital Leadership

The implications of digital leadership are critical for effectively integrating digital strategies within educational and organizational frameworks. The scarcity in defining and operationalizing digital leadership skills, as highlighted by Jameson et al., (2022) and Klus and Müller, (2021) underscores the urgent need for institutions to prioritize defining digital leadership and fostering requisite skills. To address this, tailored training and professional development programs should be instituted, ensuring leaders possess crucial competencies such as entrepreneurial thinking, self-organization, IT proficiency, and adaptability to rapidly changing environments. However, as mentioned by Promsri (2019), leader is the focal point in the digital transformation and not technology, because no matter how advanced the technology is, if the behavior of the leader towards technological advancement is somewhat traditional, it is hard to achieve the main goal.

Transformational leadership emerges as a fundamental driver of digital transformation, as elucidated by Antonopoulou et al., (2020). The strong correlation between transformational leadership and the successful implementation of digital initiatives in higher education underlines the need for educational institutions to encourage and nurture these leadership qualities. Facilitating visionary leadership styles among department heads and organizational leaders is crucial to fostering efficiency, worker satisfaction, and successful digital integration. Bras and Demillo (2017) cited that transformational leaders must create a culture of safe innovation and need to have a mindset that failure is a chance to learn new ideas, and from these new insights found strategies that can be utilized in the implementation of an organization's innovation.

Ehlers (2020) emphasizes that higher education institutions must develop coherent digitalization strategies aligned with their long-term goals. The lack of research in educational leadership concerning digitalization necessitates a structured approach, avoiding transient digital strategies. This implication highlights institutions' urgency to formulate comprehensive digitalization strategies rather than reacting to immediate needs.

Jakubik & Berazhny (2021) advocate shifting from traditional command-and-control leadership models to collaborative, trust-based paradigms. This shift requires organizations to foster a culture of trust, collaboration, and adaptive learning to harness the potential of digital leadership effectively. Similarly, Holt, (2019) emphasizes the significance of empowering educators through comprehensive training programs for effective digital integration in further education.

Digital Leadership

FRAMEWORK FOR DIGITAL LEADERSHIP

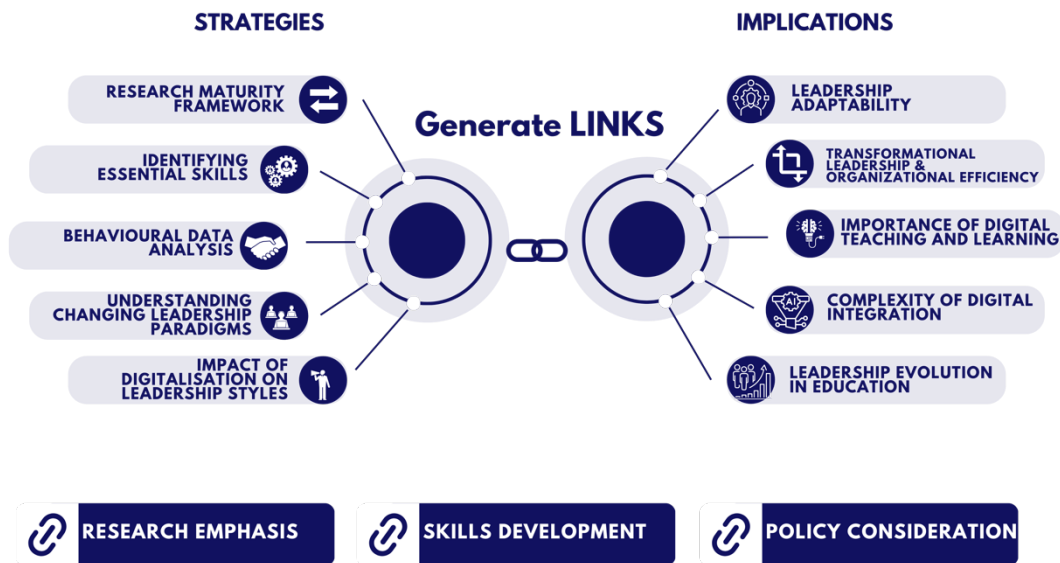


Figure 1. Digital Literacy Framework from Strategies and Implications to Generate Links

Digital leadership strategies encompass various key aspects to navigate the complexities of the digital age effectively. The framework entails several critical strategies: first, establishing a robust research maturity framework that delves into the theoretical groundworks of digital leadership while aligning empirical studies with strong methodologies. Second, identifying essential skills necessary for effective digital leadership, including entrepreneurial thinking, IT proficiency, adaptability, and creativity, to shape tailored leadership development programs. Third, leveraging behavioral data analysis to understand correlations between leadership styles and outcomes, particularly emphasizing the impact of transformational leadership in digital contexts. Fourth, understanding changing leadership paradigms, encouraging a shift from traditional models toward collaborative, trust-driven approaches in networked environments, and lastly, exploring how digitalization influences contemporary leadership styles and practices within evolving organizational structures, considering aspects like values-based leadership and the impact of digital tools on leadership approaches.

The implications of digital leadership underscore the necessity for leadership adaptability as a need to blend technical expertise with soft skills like creativity and flexibility to thrive in a dynamic digital landscape. Transformational leadership styles positively correlate with organizational efficiency in digital contexts, urging institutions to prioritize fostering such leadership for improved performance. Education must undergo a cultural shift towards effective integration of digital teaching and learning technologies, necessitating substantial upskilling among teachers. Government policies should address the complexities of digital integration in education, supporting educators' adaptation and aligning curricula with digital demands. Education leaders must evolve their styles to prepare students for future workplaces, emphasizing the evolution of teacher-student relationships amidst rapid digital transformations.

Connecting the digital leadership strategies and implications can generate three links: A call for comprehensive research that bridges the gap between theoretical insights and practical implementation, emphasizing the need for more practical implications in understanding digital leadership.

A focus on skills development through investment in training programs is essential for enhancing digital leadership skills among leaders and educators, ensuring adaptability in a rapidly evolving technological landscape.

It urges governments, especially in the education sector, to craft policies that acknowledge and support the complexities of digital integration, emphasizing the need to upskill educators and align curricula with the digital era's demands.

Conclusion Future Directions

The exploration of digital leadership within Higher Education Institutions (HEIs) emphasizes the critical role of leaders in steering institutions through a dynamic educational landscape transformed by digital technologies. Amidst the pandemic's disruptions, it is imperative to investigate strategies and implications for fostering digital leadership, which has become paramount. Digital leadership, a combination of mindset, behavior, and skills, is pivotal in driving transformative educational cultures through technology utilization. The multifaceted domain of digital leadership demands adaptable, visionary, and transformative approaches to navigate challenges and harness opportunities in the digital era.

The future of digital leadership research within HEIs should prioritize several crucial avenues. Firstly, an emphasis on comprehensive research bridging theoretical insights with practical implementation is essential. This necessitates more pragmatic implications for understanding digital leadership, and grounding studies in real-world applications. Secondly, focusing on skills development through tailored training and professional development programs becomes imperative. Investing in enhancing digital leadership skills among leaders and educators is pivotal for navigating the rapidly evolving technological landscape. Lastly, advocating for government policies that acknowledge the complexities of digital integration in education remains crucial. Policies should support educator upskilling and align curricula with the demands of the digital era, ensuring educational institutions remain adept in preparing students for future workplaces. The synthesis of digital leadership strategies and implications serves as a call to generate links between research, skills development, and policy to foster digital leadership in HEIs and beyond effectively.

Contribution of authors

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Conflict of Interest

The author declares that there is no conflict of interest.

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