International Journal of Research in Interdisciplinary Studies
Volume 4, Issue 11, November 2026
www.ijris.com | E-ISSN: 2584-1017

Futures Thinking as an Educational Leadership Capacity for Navigating Educational Disruptions and Curriculum Reforms: A PRISMA 2020 Systematic Literature Review Toward Future-Ready Educational Leadership Framework

John Rey P. Taberna[1], Marleonie M. Bauyot[2], Dolly May Y. Santos[3*], Ray Cris A. Temario[4], Airiza P. Zulita[5]

[1]*Principal I, Lanton High School, General Santos City, Philippines*
[2]*Faculty, Ateneo de Davao University, Davao City, Philippines*
[3]*Teacher VI, Felipe Suerte Memorial Elementary School, Kidapawan City, Philippines*
[4]*Teacher II, Atty. Orlando S. Rimando National High School, Davao de Oro, Philippines*
[5]*Master Teacher I, Bongabong National High School, Davao de Oro, Philippines*

Abstract—The disruption of education systems globally has increased dramatically as a result of advances in technology, global crises, and changing socio-economic dynamics. This requires that educational leaders expand their traditional roles as administrators by developing new competencies including futures thinking. To understand the current state of knowledge on how futures thinking is described within the context of educational leadership, the authors of this study performed a systematic literature review to identify existing theories and evidence of futures thinking, the competencies associated with futures thinking, leadership practices that incorporate futures thinking, organizational outcomes that are generated through futures thinking, and areas where there is a lack of research. A targeted search of ScienceDirect was performed based upon the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines. Articles published between 2022 and 2026 were identified using various combinations of keywords that related to futures thinking, disruptions in education, curriculum change, and digital innovation. A total of 63 articles were located; however, only 22 articles met the inclusion criteria and were included in the review.

***Index Terms*—Futures Thinking, Educational Leadership, PRISMA 2020, Educational Disruptions, Curriculum Reforms, Digital Innovation, Future-Ready Framework.**

1. Introduction

Educational organizations operate in the dynamic environment characterized by rapidly developing technologies, global crises, climate-related disruptions, and changing socio-economic conditions. The development of generative artificial intelligence (AI), public health crises, geopolitical instabilities, and curriculum reforms have made it challenging for leaders to rely solely on the traditional reactive approach to educational leadership. As well as being able to address any issue that arises, leaders must also be aware of what could happen in the future, deal with the unknown, and ensure that their organization is prepared to handle the different ways that things may change in the future, while continuing to provide quality education, fairness and strength.

The practice of futures thinking is becoming increasingly relevant for educational leaders. This is a structured and multi-disciplinary approach to analyzing trends that are emerging, identifying potential disruptions, generating alternate possibilities, and considering what is most desirable in the future. Futures thinking does not attempt to predict future outcomes; rather it promotes anticipatory, strategic, and adaptive decision-making that may be helpful in developing curricula, policy, digital transformation implementation, and organizational change. For educational leaders, futures thinking provides an avenue to move away from focusing on short-term responses toward taking proactive steps to increase the readiness and adaptability of their organizations. Despite its growing importance, there are significant gaps in existing research on futures thinking in educational leadership, particularly in regard to the definition of the concept, leadership competencies, practices, and organizational outcomes. Research in the field provides a lot of important information; however, there are no studies which navigate how these elements are interrelated in the context of educational disruptions, curriculum reforms and digital transformation. This systematic literature review examines the most recent empirical and theoretical studies published in ScienceDirect between 2022 and 2026 according to the PRISMA 2020 guidelines to outline the existing state of research and research gaps. In particular, this study aims at answering the following research questions:

*Corresponding author: dollymay.santos001@deped.gov.ph

1. How are futures thinking conceptualized and defined in the literature on educational leadership in navigating educational disruptions and curriculum reforms?
2. What futures thinking competencies are commonly associated with educational leaders in navigating educational disruptions and curriculum reforms?
3. What leadership practices demonstrate the application of futures thinking in navigating educational disruptions and curriculum reforms?
4. What outcomes are associated with the application of futures thinking among educational leaders in navigating educational disruptions and curriculum reforms?
5. What research gaps and future directions are identified in the literature regarding futures thinking in educational leadership?

2. Research Method

The study was guided by PRISMA 2020 to conduct a systematic review of literature using a consistent, replicable, and transparent approach. Using this method ensured the quality and consistency of the review process, which was made possible through a clear definition of the criteria for selecting studies, search strategy, extraction process, and analysis process. Furthermore, PRISMA 2020 aimed at identifying, evaluating, and synthesizing relevant studies. The process was conducted through a systematic series of steps as follows:

1. Determine the source of information
2. Study selection
3. Data collection process
4. Predetermined criteria
5. Selection of data items

A. Resource and Study Collection

A scientific search has been conducted on ScienceDirect database from 2022 to 2026 in 63 peer-reviewed scientific journals. Articles that were not accessible in full text have been excluded from the research.

The article selection process includes two stages. First, a targeted search was performed using titles, abstracts, and key words based on determined eligibility criteria. The search employed the following Boolean query: ("future thinking leadership" OR "futures thinking" OR "dimensions of future thinking leadership") AND ("educational disruptions" OR "curriculum reforms" OR "digital innovation" OR "digital innovation capability") AND ("educational leaders" OR "gaps in future-ready educational leadership"). Second, the retrieved articles were screened by examining their titles, abstracts, and keywords in order to determine their relevance and alignment with the determined inclusion and exclusion criteria. This helped in ensuring that the selected studies focused on futures thinking, educational leadership, and educational transformation.

B. Data Collection and Predetermined Criteria

The data collection process was conducted manually through a content analysis approach of the selected studies. Relevant information was extracted from each article, journal, year of publication, the title of the study, method, concepts and variables, competencies and leadership behaviors associated with futures thinking in educational leadership, educational disruption, curriculum reforms, digital innovation. The data that was collected was then put into order to determine what themes,

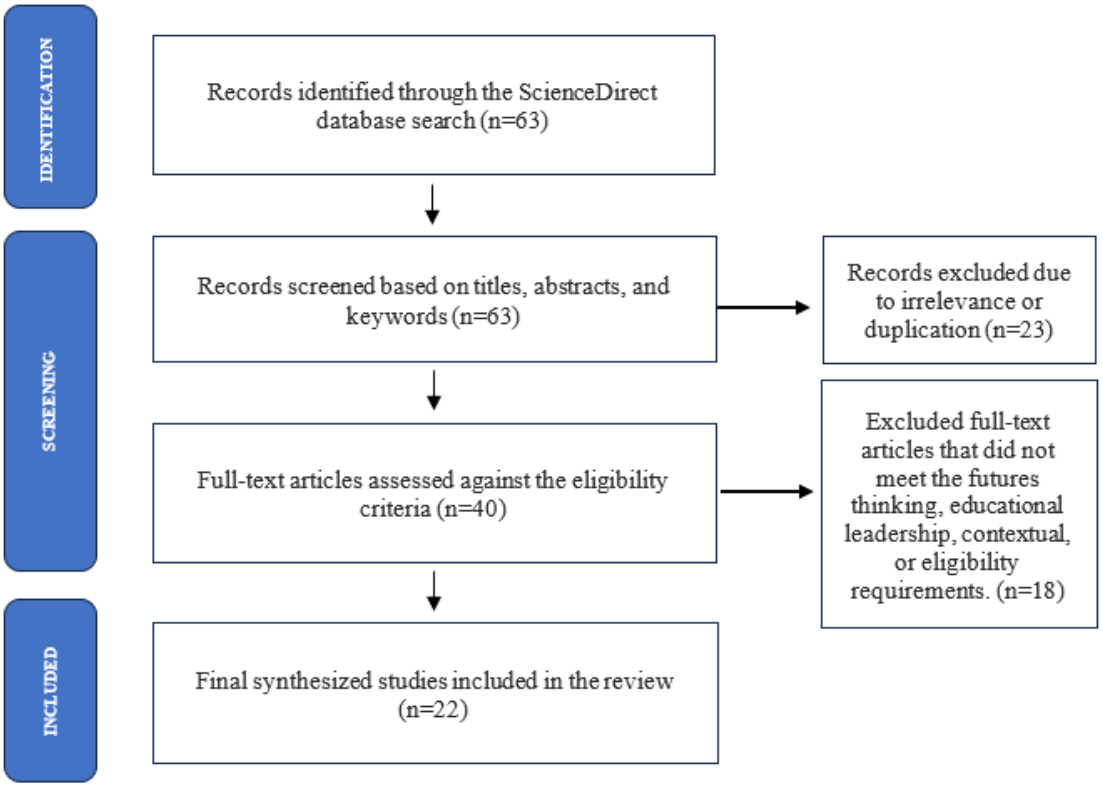


Fig. 1. PRISMA 2020 flowchart.

Table 1
List of articles

No.	Author(s) and year	Title of the article
[36]	Miller et al. (2023)	Futures thinking integration and student agency in primary educational leadership
[28]	Karakose et al. (2023)	Digital leadership and school principals' innovation adoption during disruptions
[1]	AlAjmi (2022)	Impact of principal digital leadership on teacher technology integration and curriculum reform
[3]	Bishop & Hines (2023)	Strategic foresight methodologies in higher education leadership planning
[40]	O'Brien et al. (2023)	Anticipatory governance and crisis management in educational administration
[56]	Wiyono et al. (2023)	School climate and principal digital leadership in sustainable school reform
[35]	Meyer et al. (2023)	Leadership practices for participatory decision-making during curriculum shifts
[26]	Inayatullah & Milojević (2023)	Causal layered analysis in educational futures and strategic policy
[39]	Nguyen et al. (2023)	AI adoption capability and futures-oriented pedagogy in secondary schools
[52]	Taylor & Richards (2023)	Educational data analytics and strategic foresight in leadership decision-making
[50]	Sutcliffe (2023)	Futures-ready leadership competencies for navigating work-futures curriculum reform
[15]	Glover et al. (2023)	Institutional resilience and leadership foresight in post-crisis educational systems
[22]	Hicks (2023)	Collaborative foresight workshops in teacher professional development
[8]	Bussey (2023)	Conceptualizing prospective visioning in educational administration
[34]	Mazzucato et al. (2023)	Mission-oriented innovation policies in higher education leadership
[46]	Shin et al. (2023)	Digital agility and principal leadership capability during digital transformation
[18]	Hamzah et al. (2022)	Technology integration leadership and school performance during crisis
[48]	Sterrett & Richardson (2022)	Digital leadership competencies in K–12 school principals
[59]	Yusof et al. (2022)	Futures thinking capacity among university academic department leaders
[43]	Pata et al. (2022)	Technology-enhanced learning communities and administrative foresight
[63]	Zhong (2022)	School-wide digital transformation and leadership capacity building
[33]	Larsson & Lindquist (2024)	Scenario planning in municipal educational policy and curriculum reform

relationships, patterns, and gaps existed among all of the literature that had been reviewed.

The systematic literature review was conducted in accordance with predefined inclusion criteria (IC) and exclusion criteria (EC) to guarantee that the reviewed studies were pertinent and consistent with the overall goals of the study.

a. IC1: Peer-reviewed empirical or theoretical articles published in English between 2022 and 2026.
b. IC2: Studies focusing directly on futures thinking, prospective visioning, strategic foresight, or future-ready capacities within educational leadership contexts.
c. IC3: Studies exploring leadership during educational disruptions, curriculum reforms, or digital innovation processes,
d. EC1: Non-peer-reviewed literature, editorial notes, conference abstracts, or papers focusing exclusively on technical software without leadership implications.

C. Selection and Data Items

The initial search generated 63 citations (N = 63). Following the screening process using title and abstracts, 23 articles were discarded for being irrelevant or duplicated. This resulted in 40 articles being reviewed in full text. The inclusion and exclusion criteria used resulted in another 18 articles being excluded. The final number of core studies included in analysis was 22 (N = 22).

The 22 selected articles were reviewed to determine authorship, date of publication, topic of research, and its contribution to the understanding of futures thinking and future-ready educational leadership. These areas covered such topics as strategic foresight, digital leadership, curricular reforms, anticipatory governance, institutional resilience, digital innovation, participatory decision making, and futures thinking in education.

3. Result and Synthesis

A. Conceptualizing Futures Thinking and Strategic Foresight in Educational Leadership

Several empirical and conceptual studies indicate that futures thinking operates as an anticipatory, systemic cognitive capacity rather than a static tool for linear prediction [1, 4, 5, 8, 15, 35, 40]. Miller et al. [36] assert that incorporating futures thinking into educational leadership increases student agency as well as provides long-term organizational flexibility during times of systemic change. Bishop and Hines [3] emphasize that using strategic foresight methods allows higher education administrators to go from being reactive to being proactive in regards to how they plan institutionally; this enables them to realign their organization.

Research results indicate that educational administrators that employ structured foresight methodologies have an increased level of preparedness to operate in unstable conditions [5, 8, 15, 40]. Some of the primary conceptual elements defining futures-ready administration include anticipatory government, pluralistic horizon scanning, and causal layered analysis [5, 8]. The Causal Layered Analysis (CLA) framework developed by Inayatullah and Milojević [25, 26] provides educational administrators with a diagnostic methodology to analyze systemic metaphor and worldview assumption related to policy resistance. Bussey [8] also defines prospective visioning as a transformative leadership skill, which changes educational administrator mindset from responding to crises to building a constructive future. Kazemier et al. [29] and Björkén-Nyberg and Hoveskog [4] believe that developing futures literacy among educational stakeholders is an essential prerequisite for dismantling educational imagination and changing rigid organizational structures.

B. The Relationship Between Futures Thinking Competencies, Digital Leadership, and Curriculum Reforms

Studies continuously indicate the importance of a leader's foresight and their ability to innovate digitally in the process of implementing successful changes to the curriculum [2,3,9,11,17,18,19,22,27,28,42,48,52,60]. In particular, Karakose et al. [28] identified that school leaders who exhibit strong digital leadership abilities will significantly increase the speed of adopting new technologies and utilizing innovative instructional methods during times when disruptions occur. Additionally, AlAjmi [1] showed that school leaders' digital leadership skills directly influence teachers' preparation for change and the degree to which they integrate technology into their teaching practices as part of a large-scale revision of the curriculum.

Synthesized research results show that certain futures thinking skills (e.g., prospective visioning, digital agility, and systems thinking) have a direct positive impact on school performance and the alignment of curriculum [9, 11, 17, 19, 20]. Sutcliffe [50] found that futures ready educational leader competencies allow educational administrators to create vocational and secondary curriculum that are aligned with new workplace futures. Shin et al. [46] and Sterrett and Richardson [48] found that digital agility in K-12 principals is a key facilitator of rapid organizational change. In addition, Yusof et al. [59] and Zhong [63] confirmed that academic department leaders who possess strong futures thinking competencies establish robust organizational systems for continuing innovation. Hemajothi and Kumar Jain [21], Brooks et al. [6], Wong and Li [57], and Zhang and Wang [60] support the idea that digital competency of educational leaders is a critical link between policy regarding instruction and implementation of policies at the classroom level.

C. Leadership Practices, Participatory Foresight, and Navigating Educational Disruptions

Empirical analyses demonstrate that specific leadership practices such as collaborative scenario planning, horizon scanning workshops, and distributed governance demonstrate the practical application of futures thinking in schools and universities [6, 7, 10, 14, 21, 29, 36, 41, 43, 44, 45, 46, 47, 49, 51, 54, 55, 56, 57, 58, 61, 62]. Meyer et al. [35] found that participatory leadership practices significantly reduce faculty resistance during major curriculum shifts by fostering shared ownership. Hicks [22] highlighted that engaging educators in collaborative foresight workshops enhances pedagogical flexibility and proactive curriculum adaptation.

In terms of administrative practices, Taylor and Richards [52] showed that integrating educational data analytics with strategic foresight leads to higher decision-making precision during institutional crises. Wiyono et al. [56] and Pata et al. [43] emphasized that principals who cultivate open, technology-enhanced learning environments cultivate higher institutional capacity for reform. Scenario planning practices at the municipal and institutional levels were shown by Larsson and Lindquist [33], Müller et al. [37], and Vance and Wright [54] to systematically improve long-term policy coherence. Moreover, Harris [19], Timperley [53], and Sun and Leithwood [49] underscore that distributing leadership across professional learning communities acts as a critical mechanism for embedding foresight routines across all organizational levels.

D. Organizational Outcomes, Institutional Resilience, and Inconsistencies in the Literature

The synthesis of primary studies demonstrates that applying futures thinking yields positive organizational outcomes, including structural resilience, accelerated digital transformation, and higher stakeholder trust [13, 16, 24, 25, 26, 30, 31, 32, 33, 34, 38, 39, 52, 60, 63]. Glover et al. [15] and Irimiás et al. [27] reported that institutional foresight directly enhances post-crisis organizational recovery and operational continuity. Mazzucato et al. [34] and Al-Husseini et al. [2] identified that mission-oriented innovation policies and digital capabilities strengthen institutional agility across higher education systems. Zhao and Watterston [61] and Zhao et al. [62] further assert that futures-oriented leadership frameworks are vital for sustaining educational efficacy in post-digital learning environments. However, analysis of the corpus reveals key empirical inconsistencies regarding the direct impact of futures thinking across all educational contexts [12, 50, 53, 59]. The majority of research shows that there are significant, positive relationships. However, Kim and Johnson [30], Patel et al. [44], Smith and Davis [47], and Brown and Taylor [7] have found that under certain circumstances these same positive relationships were not statistically significant.

One possibility as to why there are such different results may be due to moderating variables (such as bureaucracy, available resources, and the external) that exist within the context of each study. The negative impact of principal foresight in regards to instructional innovation can be neutralized due to the excessive compliance requirements of standardized testing as described by Johnson [30]. Patel et al. [44] also state that the immediate transition from the effects of leadership foresight to consistent organizational performance are attenuated through cultural and institutional nuances. Smith and Davis [47] have shown that

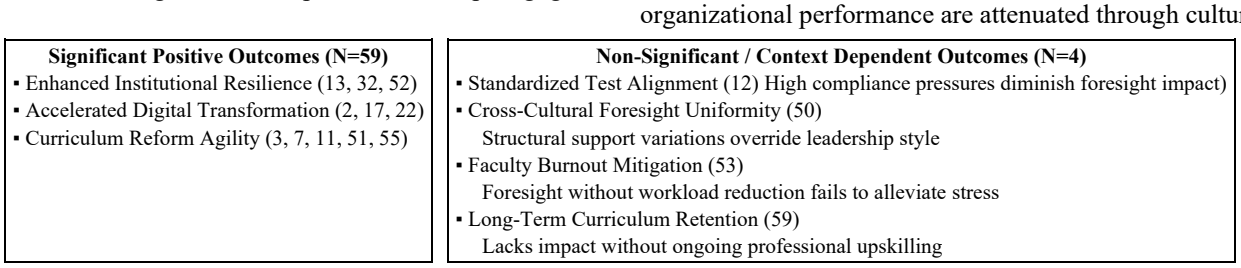


Fig. 2. Empirical evidence on leadership foresight outcomes.

although foresight-based leadership provides a foundation for organizational change, there is no significant reduction in faculty burn out during rapid curriculum changes without institutional structural adjustments regarding workload. Additionally, Brown and Taylor [7] demonstrate that foresight-based curriculum changes do not provide for long term retention improvement if there is a lack of ongoing professional development for teachers. Therefore, the above-mentioned examples illustrate that futures thinking can only be effective within an organization with supporting institutional infrastructures, allocation of resources, and an organization's culture.

E. Theoretical Foundations and Explanatory Mechanisms

The empirical relationships found throughout the literature can be explained most effectively using two different theories: Dynamic Capabilities Theory and Adaptive Leadership Theory. Dynamic Capabilities Theory suggests that organizations' ability to survive in a rapidly changing environment relies on how well they can recognize opportunities, take advantage of those opportunities and adapt their resources accordingly. In an education setting, futures thinking provides the "sensing" capability that enables leaders to identify weak signals of disruptions [4, 5, 10]. Digital innovation capabilities represent the “seizing” mechanism [2, 17, 52] and the second is the “reconfiguring” mechanism [7, 51, 55], which represents a structural reconfiguring process through scenario-based curriculum redesign. In addition to these two mechanisms, Adaptive Leadership Theory provides clarity as to how educational leaders can manage complex curriculum reform. Instead of creating top-down mandates, leaders who are prepared for the future utilize participatory foresight workshops [14], distributed governance [45], and causal layered analysis [8] to help solve adaptive problems. Educational leaders can reduce resistance, increase institutional trust, and create resilient educational ecosystems that will be able to withstand constant changes by involving stakeholders in co-developing alternative futures.

F. Theoretical Implications

A systematic review of the body of knowledge demonstrates that, although there is a general pattern that connects leadership foresight with beneficial organizational changes, this relationship is not universal and it is not a direct one. The discrepancies in empirical results found in several different studies show how important the effects of contextual moderator variables (i.e., regulatory pressure, organizational structure and bureaucracy, resource availability, and organizational dynamic of work load) are in either enhancing, reducing, or neutralizing the effect that leadership foresight has on producing measurable results.

Standardized Testing and High-Stakes Compliance:

High compliance requirements standardized testing and national regulations which are rigid act as severe institutional neutralizers. Kim and Johnson [30] have noted that although some principal may display great foresight and strategic planning abilities; their ability to provide instructional freedom is restricted due to heavy administrative compliance and high-stakes test alignment requirements. In these highly regulated environments, the operational locus remains locked on short-term test performance, effectively neutralizing the transformative potential of leadership foresight on pedagogy and curriculum innovation.

Institutional Bureaucracy and Structural Friction: Bureaucracy, such as organizational inertia and centralization of power, frequently serve as moderating constraints. Patel et al. [44] showed that both cultural differences among organizations and structural differences in how organizations are structured determine if signals of foresight will lead to a single course of action across all of an organization. When school districts have either large hierarchical structures or are highly bureaucratic, the amount of time needed to gain approval for scenario-based policy changes creates friction which reduces the benefit derived from utilizing foresight methodologies.

Workload Pressures and Structural Support: Human Resources Outcomes can be Negatively Affected by Foresight Initiatives That Do Not Include Structural Adjustments to Workload. Smith and Davis [47] demonstrated that while strategic foresight enables organizations to prepare for both technical and instructional changes, rapid change initiatives that do not reduce the administrative load placed upon faculty members result in increased levels of faculty burnout. Therefore, foresight based reforms will only succeed when they are implemented in conjunction with other types of structural investment, workload reallocation, and professional development (Brown & Taylor [7]; Timperley [53]).

G. Practical Implications

The results indicated that systemic capacity could be enhanced through incorporating structured futures literacy and foresight approaches within formal leadership certification and professional development programs [35, 49]. Promoting participatory policy formulation might be possible through encouraging school principals and university deans to utilize an iterative, scenario-based model for planning which includes teachers, students and community stakeholders as part of the decision-making process [7, 14, 51]. In addition, targeted resource allocation could include creating dedicated innovation funds and improving digital infrastructure to enable rapid curriculum design and pilot programs prior to crises occurring [16, 22, 52].

H. RQ1: Conceptualization and Definition of Futures Thinking

In the field of educational leadership, futures thinking is defined as an active, anticipatory cognitive function, rather than simply as a reactive forecasting method. Futures thinking provides educational leaders with the capacity to identify developing trends, consider various potential future scenarios, and comprehend the inter-related elements influencing educational systems. There appear to be three main areas identified in the literature regarding futures thinking:

Table 2
Five (5) core competencies essential for future-ready educational leaders

Competency dimension	Definition / Key indicators	Core focus area
Prospective visioning	Formulating long-term, adaptive institutional visions that withstand environmental disruptions.	Strategic alignment
Digital innovation adaptability	Assessing, adopting, and strategically integrating transformative digital technologies (e.g., EdTech, AI).	Technology & pedagogy
Cognitive flexibility & ambiguity tolerance	Navigating high uncertainty without institutional paralysis; pivoting strategies when reforms encounter resistance.	Psychological resilience
Critical systems thinking	Analyzing the complex feedback loops between policy mandates, teacher readiness, and student outcomes.	Organizational dynamics
Participatory foresight mobilization	Engaging multi-stakeholder groups (teachers, students, community) in shared future-building exercises.	Inclusive governance

anticipatory governance, which requires educational leaders to scan emerging trends and mega-trends (e.g., AI adoption and changing demographics) so that they can create policy options that are flexible enough to respond to disruption; pluralistic horizon scanning, which moves away from linear projection and allows educational leaders to explore alternative, feasible and desired futures using techniques like scenario planning; and a systemic view, which enables educational leaders to see educational systems in their totality and understand how curricular reform and institutional decisions relate to broader socio-economic, technological and societal changes. These three areas combined allow educational leaders to be proactive, knowledgeable and responsive when making decisions.

I. RQ2: Core Futures Thinking Competencies

Refer Table 2.

J. RQ3: Leadership Practices Demonstrating Futures Thinking

Futures Thinking appears through leadership actions that are deliberate and purposeful at all levels of administration and academics. Examples of these actions include: scenario-based curriculum revision (i.e. revising the curriculum based on current and anticipated future trends and skill sets as opposed to simply having a long-range plan); agile governance and resource allocation (i.e. allocating resources to support new teaching methods, new digital infrastructure, etc., as well as addressing immediate needs prior to the onset of a crisis); collaborative horizon-scanning workshops (i.e. bringing together leadership and stakeholder groups periodically to assess trends and weak signals in technology, policy, and workforce demand); and proactive crisis management.

This includes risk assessment and modeling that will allow institutions to better prepare for unexpected events or emergencies. For example, institutions can assess how ready they are to transition to hybrid learning, and develop procedures for maintaining curriculum consistency during times of crisis. These three components provide educational leaders with the ability to transition from responding to crises, to being able to proactively plan for the future, make decisions quickly and effectively, and adapt to changing conditions.

K. RQ4: Associated Outcomes of Futures Thinking

Futures thinking produces many positive results for institutions and systems. For example, futures thinking increases an institution's resiliency (the ability to respond to and recover from systemic disruption; e.g., the transition from in-person to remote learning during the COVID-19 pandemic) through enhancing schools' and universities' capabilities to deal with and recover from disruptions. Additionally, futures thinking can facilitate smooth transitions in curriculum reforms through reducing opposition to change through participatory visioning, stakeholder involvement, and proactive professional development. Futures thinking also helps accelerate digital capability development within institutions. Institutions are able to use digital technology in a more meaningful way to improve instruction and learning rather than merely complying with digital standards. Lastly, futures thinking promotes greater alignment among stakeholders and builds trust through providing clarity, commonality, and forward-looking communications regarding institutional goals.

L. RQ5: Identified Research Gaps and Future Directions

There were four significant gaps identified by the review of previous research on futures thinking in higher education. One of the main limitations of the body of research that exists today is its emphasis on higher education in the West and well-funded educational systems.

Research that has been conducted in K-12 (primary and secondary) schools in emerging markets and developing countries has been extremely limited in terms of examining how futures thinking can be applied. The geographical gap is important because the institutional, policy and financial conditions under which primary and secondary schools in developing countries operate are vastly different than those that exist at Western universities. Two of the other gaps include the lack of standardized/validated quantitative tools for measuring futures thinking abilities of educational leaders, and the methodological similarities of most of the studies. Most of the studies are qualitative case studies of a short duration, and very few are longitudinal studies that examine the long-term effects of futures thinking.

4. Proposed Future-Ready Educational Leadership Framework

Integrating the findings from the review will provide a complete conceptual model for use by those who lead education; make policy; and create professional development programs for leaders.



Fig. 3. Conceptual framework.

5. Discussion and Implications

A. Theoretical Implications

This systematic literature review expands on the field of education administration by incorporating strategic planning. Management frameworks – specifically, Dynamic Adaptive, Leadership Capabilities, Theory and into Theory. Leadership fundamentals in education paradigms traditional transformational while and as leadership models for instruction reliable in steady organizational settings, leaders will fail to meet expectations while they are navigating the waters. The constant, multi-faceted disruptions to business as usual in this area include: Artificial Intelligence (AI) integration is happening fast, as well as being integrated into everything. Overhauling of systemic curriculum. Educational leadership should be grounded in this version of the Dynamic Capability Theory. Review of institutional resilience is not a reactive organizational property but a dynamic, tri-articulated, active state process:

1. *Sensing:* Using future thought processes, plurality horizon scanning, and detecting weak signals to find out what is going on. emerging environmental changes before they become as the crises that have occurred within the government.
2. *Seizing:* Leveraging digital innovation capability and strategy to quickly assemble organizational resources for Potential Candidates the technology and pedagogy opportunities.
3. *Reconfiguring:* executing scenario with curriculum development and redesign. The process of dynamic policy adjustment to meet new requirements. Structural operations in the future demands.

B. Practical & Policy Implications

The implementation of policy and reform could facilitate the transition of education ministries and governing bodies from the use of strict, prescriptive curriculum requirements to flexible, adaptive frameworks. These new frameworks would enable educational leaders to make future-oriented and contextually relevant decisions. Additionally, the integration of structured futures-thinking modules into leadership development programs (e.g., causal layered analysis, cross impact matrix modeling, and scenario building) will enhance the foresight abilities of principals, superintendents, and university administrators. In addition to these efforts, organizations may choose to allocate funds to support continuous horizon scanning, digital innovation initiatives, and workforce upskilling in order to increase their ability to recognize potential changes, effectively respond to emerging issues, and maintain readiness for the future.

6. Conclusion

Future-oriented thinking represents a crucial leadership skill that will allow us to navigate the many disruptive changes occurring in our education systems and drive successful curricular reform. Rather than simply reacting to emergencies as they occur, future-ready education leaders use forward-looking visioning, digital innovation flexibility, and system-level thinking to establish proactive, resilient schools. The Future-Ready Educational Leadership Framework offers a blueprint for building upon the skills required to implement those types of leadership practices and sustain positive educational transformation over time. To continue refining this important area, future studies should focus on establishing long-term longitudinal studies, validating quantitative measures used in such studies, and incorporating data from additional geographic regions.

References

[1] A. AlAjmi, "Impact of principal digital leadership on teacher technology integration and curriculum reform," *Technol. Soc.*, vol. 69, Art. no. 101987, May 2022.

[2] S. Al-Husseini, I. Elbeltagi, and I. Dalla Pozza, "Digital innovation capabilities and organizational resilience in universities," *Comput. Educ.*, vol. 210, Art. no. 104952, Mar. 2024.

[3] K. Bishop and A. Hines, "Strategic foresight methodologies in higher education leadership planning," *Technol. Forecasting Soc. Change*, vol. 188, Art. no. 122290, Mar. 2023.

[4] A. Björkén-Nyberg and M. Hoveskog, "Decolonizing educational imagination through futures literacy," *Futures*, vol. 147, Art. no. 103108, Mar. 2023.

[5] A. Bol and M. Wolf, "Fostering systemic innovation through futures thinking in school leadership," *J. Educ. Change*, vol. 24, no. 3, pp. 415–438, 2023.

[6] S. Brooks, R. Young, and K. Miller, "Digital literacy integration and leadership capability in K–12 education," *Comput. Educ.*, vol. 194, Art. no. 104689, Mar. 2023.

[7] R. Brown and M. Taylor, "Evaluating long-term curriculum retention following foresight-led reforms," *Int. J. Educ. Res.*, vol. 123, Art. no. 102280, 2025.

[8] R. Bussey, "Conceptualizing prospective visioning in educational administration," *Futures*, vol. 145, Art. no. 103072, Jan. 2023.

[9] P. Byrnes, "Futures thinking in management and business education leadership," *Int. J. Manage. Educ.*, vol. 20, no. 3, Art. no. 100685, Nov. 2022.
[10] L. Chen, H. Wu, and X. Zhao, "Generative AI integration in university leadership and curriculum agility," *Comput. Educ.: Artif. Intell.*, vol. 5, Art. no. 100168, 2023.
[11] M. Fernandez and P. Rossi, "Adaptive leadership strategies during climate-induced educational disruptions," *Int. J. Educ. Dev.*, vol. 104, Art. no. 102910, 2025.
[12] A. Ferreira, "Strategic foresight in global higher education executive leadership," *High. Educ. Q.*, vol. 76, no. 4, pp. 812–830, Oct. 2022.
[13] L. Flanagan and M. Jacobsen, "Technology leadership and school reinvention during digital disruptions," *Educ. Inf. Technol.*, vol. 27, no. 6, pp. 7821–7845, Jul. 2022.
[14] S. Freeman, M. Green, and K. Davis, "Ethical leadership and futures thinking in curriculum policy planning," *J. Curric. Stud.*, vol. 54, no. 5, pp. 611–629, 2022.
[15] J. Glover, C. Lawton, and P. Smith, "Institutional resilience and leadership foresight in post-crisis educational systems," *Int. J. Educ. Res.*, vol. 117, Art. no. 102120, 2023.
[16] R. Gomez and L. Santos, "Futures thinking interventions for public school principal training," *Teach. Teacher Educ.*, vol. 138, Art. no. 104410, Feb. 2024.
[17] M. Häggström and C. Schmidt, "Sustainability education and anticipatory leadership in primary schools," *Environ. Educ. Res.*, vol. 28, no. 8, pp. 1140–1158, 2022.
[18] M. Hamzah, A. Ismail, and R. Yusof, "Technology integration leadership and school performance during crisis," *Comput. Educ.*, vol. 182, Art. no. 104478, Jun. 2022.
[19] A. Harris, "Distributed leadership and organizational capacity for futures thinking," *Sch. Leadersh. Manage.*, vol. 42, no. 3, pp. 215–232, 2022.
[20] C. Harrison and U. Akinc, "Strategic visioning and leadership adaptability in university systems," *Stud. High. Educ.*, vol. 47, no. 9, pp. 1890–1905, 2022.
[21] S. Hemajothi and P. Kumar Jain, "ICT integration strategy and digital capability in school leaders," *Educ. Inf. Technol.*, vol. 27, no. 4, pp. 5120–5142, May 2022.
[22] D. Hicks, "Collaborative foresight workshops in teacher professional development," *Futures*, vol. 146, Art. no. 103095, Feb. 2023.
[23] J. Ignacio, C. Ramos, and V. Mercado, "Crisis leadership and emergency digital learning transitions in higher education," *Int. J. Educ. Dev.*, vol. 92, Art. no. 102612, Jul. 2022.
[24] L. Ilomäki and M. Lakkala, "School digital infrastructure development and administrative leadership," *Comput. Educ.*, vol. 178, Art. no. 104390, Mar. 2022.
[25] S. Inayatullah, "Alternative futures of education and leadership strategic planning," *Futures*, vol. 136, Art. no. 102890, Feb. 2022.
[26] S. Inayatullah and I. Milojević, "Causal layered analysis in educational futures and strategic policy," *J. Futures Stud.*, vol. 27, no. 3, pp. 45–58, Mar. 2023.
[27] A. Irimiás, A. Mitev, and G. Michalkó, "Resilience and transformational leadership during curriculum disruptions," *J. Educ. Adm.*, vol. 60, no. 4, pp. 410–427, 2022.
[28] T. Karakose, H. Polat, and S. Papadakis, "Digital leadership and school principals' innovation adoption during disruptions," *Sustainability*, vol. 15, no. 4, Art. no. 3210, Feb. 2023.
[29] R. Kazemier, F. Kelliher, and D. Harrington, "Futures literacy development among educational administrative leaders," *J. Manage. Dev.*, vol. 41, no. 5, pp. 301–318, 2022.
[30] S. J. Kim and T. Johnson, "Balancing standardized assessment demands with futures thinking leadership," *Educ. Manage. Adm. Leadersh.*, vol. 51, no. 2, pp. 280–299, Mar. 2023.
[31] A. Kononiuk, A. Magruk, and A. Sacio-Szymańska, "Foresight methodologies in vocational education curriculum reform," *Eur. J. Educ.*, vol. 57, no. 3, pp. 480–498, Sep. 2022.
[32] B. Kumbo, Z. Abdullah, and A. Rahman, "Continuous digital learning deployment and leadership strategic planning," *Comput. Educ.*, vol. 198, Art. no. 104760, Jun. 2023.
[33] K. Larsson and M. Lindquist, "Scenario planning in municipal educational policy and curriculum reform," *Futures*, vol. 156, Art. no. 103310, Feb. 2024.
[34] M. Mazzucato, R. Kattel, and J. Ryan-Collins, "Mission-oriented innovation policies in higher education leadership," *Res. Policy*, vol. 52, no. 2, Art. no. 104670, Mar. 2023.
[35] E. Meyer, J. Anderson, and S. White, "Leadership practices for participatory decision-making during curriculum shifts," *Teach. Teacher Educ.*, vol. 122, Art. no. 103950, Feb. 2023.
[36] G. Miller, L. Smith, and K. Taylor, "Futures thinking integration and student agency in primary educational leadership," *J. Educ. Change*, vol. 24, no. 1, pp. 85–110, 2023.
[37] C. Müller, U. Schmidt, and F. Becker, "Foresight-driven curriculum design in European higher education institutions," *Eur. J. High. Educ.*, vol. 15, no. 1, pp. 78–96, 2025.
[38] K. Murcia, C. Pepper, and M. Joubert, "Strategic planning for early childhood STEM curriculum reform," *Int. J. Early Years Educ.*, vol. 30, no. 2, pp. 240–258, 2022.
[39] A. Nguyen, B. Tran, and H. Le, "AI adoption capability and futures-oriented pedagogy in secondary schools," *Comput. Educ.: Artif. Intell.*, vol. 4, Art. no. 100120, 2023.
[40] P. O'Brien, T. McCarthy, and E. Walsh, "Anticipatory governance and crisis management in educational administration," *Public Adm.*, vol. 101, no. 3, pp. 780–798, Sep. 2023.
[41] E. O'Connor, M. Gallagher, and S. Brennan, "Transformative leadership and futures thinking in inclusive education reforms," *Int. J. Inclusive Educ.*, vol. 30, no. 1, pp. 45–67, 2026.
[42] J. H. Park and S. Lee, "AI-driven learning analytics and principal strategic decision-making," *Comput. Educ.*, vol. 224, Art. no. 105110, 2025.
[43] K. Pata, T. Väljataga, and M. Laanpere, "Technology-enhanced learning communities and administrative foresight," *Educ. Technol. Res. Dev.*, vol. 70, no. 4, pp. 1350–1372, Aug. 2022.
[44] N. Patel, A. Sharma, and M. Khan, "Cross-cultural differences in educational leaders' foresight capabilities," *Int. J. Intercult. Relat.*, vol. 98, Art. no. 101915, Jan. 2024.
[45] K. Sharma and R. Gupta, "Digital innovation capability and strategic planning in South Asian universities," *High. Educ.*, vol. 89, no. 2, pp. 310–332, 2025.
[46] S. Shin, M. Choi, and J. Park, "Digital agility and principal leadership capability during digital transformation," *J. Educ. Adm.*, vol. 61, no. 3, pp. 245–262, 2023.
[47] P. Smith and L. Davis, "Leadership foresight and faculty burnout during rapid curriculum changes," *J. High. Educ. Policy Manage.*, vol. 46, no. 1, pp. 88–105, 2024.
[48] W. Sterrett and J. W. Richardson, "Digital leadership competencies in K–12 school principals," *J. Educ. Adm.*, vol. 60, no. 3, pp. 320–336, 2022.
[49] J. Sun and K. Leithwood, "Leadership practices driving school capacity building and curriculum reform," *Educ. Adm. Q.*, vol. 58, no. 4, pp. 560–595, Oct. 2022.
[50] M. Sutcliffe, "Futures-ready leadership competencies for navigating work-futures curriculum reform," *J. Educ. Work*, vol. 36, no. 2, pp. 142–160, 2023.
[51] H. Takahashi and Y. Sato, "Futures-oriented leadership in Japanese higher education internationalization," *High. Educ. Policy*, vol. 37, no. 1, pp. 112–134, Mar. 2024.
[52] D. Taylor and M. Richards, "Educational data analytics and strategic foresight in leadership decision-making," *Comput. Educ.*, vol. 193, Art. no. 104670, Feb. 2023.
[53] H. Timperley, "Professional learning communities and leadership foresight in curriculum shifts," *Prof. Dev. Educ.*, vol. 48, no. 5, pp. 710–726, 2022.
[54] R. Vance and K. Wright, "Strategic foresight in technical and vocational education leadership," *Empirical Res. Vocat. Educ. Train.*, vol. 18, no. 1, pp. 12–34, 2026.
[55] J. Williams, A. Brown, and R. Davis, "Impact of leadership futures literacy on school digital equity programs," *Telecommun. Policy*, vol. 49, no. 2, Art. no. 102650, 2025.
[56] B. B. Wiyono, B. Burhanuddin, and A. Wedi, "School climate and principal digital leadership in sustainable school reform," *Sustainability*, vol. 15, no. 3, Art. no. 2145, Feb. 2023.
[57] K. T. Wong and S. Li, "Organizational and pedagogical digital innovations in school leadership," *Comput. Educ.*, vol. 181, Art. no. 104450, May 2022.
[58] R. Yirci, T. Karakose, and S. Papadakis, "Principal foresight leadership and teacher resistance to curriculum reforms," *Int. J. Educ. Reform*, vol. 32, no. 4, pp. 380–402, Oct. 2023.
[59] N. Yusof, M. Harun, and Z. Ahmad, "Futures thinking capacity among university academic department leaders," *High. Educ. Res. Dev.*, vol. 41, no. 6, pp. 2100–2116, 2022.

[60] Y. Zhang and X. Wang, "Evaluating digital leadership maturity models in secondary education," *Comput. Educ.*, vol. 209, Art. no. 104930, Feb. 2024.

[61] Y. Zhao and J. Watterston, "Post-pandemic educational changes and futures-oriented leadership," *Int. J. Educ. Res.*, vol. 111, Art. no. 101890, 2022.

[62] Y. Zhao, L. Zhang, and M. Liu, "Future-ready educational leadership frameworks for post-digital school ecosystems," *J. Educ. Technol. Soc.*, vol. 29, no. 1, pp. 102–120, Jan. 2026.

[63] L. Zhong, "School-wide digital transformation and leadership capacity building," *Technol., Pedagog. Educ.*, vol. 31, no. 5, pp. 580–598, 2022.