ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

EXAMINING THE ROLE OF TRANSFORMATIONAL LEADERSHIP IN BUILDING AI-READY UNIVERSITIES: EVIDENCE FROM HIGHER EDUCATION INSTITUTIONS IN KHYBER PAKHTUNKHWA, PAKISTAN

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Abstract
Artificial Intelligence (AI) increasingly reshapes higher education institutions by influencing governance systems, teaching models, research processes, and administrative operations. Institutional readiness for AI requires digital infrastructure, policy frameworks, staff competencies, ethical safeguards, and innovation-supportive culture. Leadership plays a central role in enabling such transformation, yet empirical evidence from developing regions remains limited. This study examined the role of transformational leadership in building AI-ready universities in Khyber Pakhtunkhwa (KP), Pakistan. A quantitative cross-sectional survey was conducted with 37 academic heads and institutional representatives from major KP universities. Transformational leadership (12 items) and AI readiness (23 items) were measured using Likert-scale instruments. Reliability analysis showed acceptable internal consistency ($\alpha = .657$ for leadership; $\alpha = .612$ for AI readiness). Correlation analysis revealed a moderate positive relationship ($r = .488$, $p < .01$). Regression analysis indicated that transformational leadership significantly predicted AI readiness ($\beta = .377$, $p = .002$). The findings demonstrated that leadership behaviors such as vision communication, intellectual stimulation, and staff support significantly aligned with institutional AI preparedness. The study contributed empirical evidence from KP and highlighted leadership development as a strategic lever for AI-driven university transformation.

Keywords: *Transformational leadership, AI readiness, higher education, digital transformation, KP Pakistan, educational management*

Introduction
Artificial Intelligence (AI) has emerged as one of the most transformative forces shaping contemporary higher education systems. Universities worldwide increasingly integrate AI-driven technologies into teaching, learning, research, governance, and administrative operations. Applications include learning analytics, automated grading systems, intelligent tutoring systems, predictive enrollment management, plagiarism detection, academic integrity monitoring, chatbots for student services, and research automation tools (Chen, Chen, & Lin, 2020; Holmes et al., 2022; Zawacki-Richter et al., 2022). The rapid proliferation of generative AI technologies further accelerates institutional pressure to adopt and regulate AI systems responsibly (Williamson & Eynon, 2023).

Global policy organizations emphasize that AI adoption in education extends beyond technological procurement. UNESCO (2021) and OECD (2023) assert that AI integration requires systemic transformation encompassing digital infrastructure development, human capacity enhancement, governance reform, ethical safeguards, and institutional accountability. Similarly, the World Bank (2023) identifies institutional readiness—rather than mere technology availability—as the central determinant of sustainable AI adoption in developing economies. These perspectives position AI integration as a strategic organizational transformation rather than a purely technical implementation.

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Digital transformation research further supports this institutional perspective. Vial (2019) and Kane et al. (2022) argue that digital transformation succeeds when leadership aligns technological initiatives with strategic vision, organizational culture, and governance frameworks. In higher education, institutional transformation requires coordinated action among leadership structures, quality assurance mechanisms, academic councils, and administrative units (Bond et al., 2021). Without leadership-driven alignment, technology adoption often remains fragmented, experimental, and unsustainable.

In developing regions, including Pakistan, universities encounter additional structural constraints. These include uneven digital infrastructure, limited AI literacy among faculty and administrators, inconsistent policy frameworks, financial resource limitations, and institutional resistance to change (Qureshi et al., 2020; Shah & Nair, 2022). Although Pakistan's Higher Education Commission (HEC) has initiated digital transformation strategies, implementation across provinces remains uneven. Within Khyber Pakhtunkhwa (KP), universities demonstrate varied levels of digital maturity, institutional capacity, and technological investment. While some institutions integrate advanced digital systems, others operate with limited infrastructure and governance clarity.

Despite the increasing visibility of AI technologies in academic environments, systematic examination of institutional AI readiness in KP universities remains limited. Existing institutional discussions often focus on digital learning platforms or pedagogical innovation, while governance readiness, ethical preparedness, and leadership influence receive comparatively less empirical attention.

Organizational change literature consistently identifies leadership as a central determinant of successful transformation (Antonakis & Day, 2018; Judge & Piccolo, 2004). Transformational leadership, in particular, emphasizes vision articulation, intellectual stimulation, inspirational motivation, and individualized support (Bass, 1985; Burns, 1978). Empirical research demonstrates that transformational leaders foster innovation climates, enhance staff engagement, and support digital transformation processes (Al-Husseini & Elbeltagi, 2022; García-Morales et al., 2020).

Recent studies show that digital transformation initiatives in universities require leadership behaviors that encourage experimentation, reduce resistance, support training, and establish clear governance expectations (Kane et al., 2022; Verma & Gustafsson, 2020). Transformational leadership aligns strongly with these requirements because it:

- Promotes shared digital vision
- Encourages creative problem-solving
- Supports continuous professional development
- Strengthens institutional trust and collaboration
- Reinforces accountability and ethical standards

In AI-driven contexts, leadership plays a critical role in shaping institutional AI policies, guiding responsible use, managing academic integrity concerns, and ensuring inclusive and equitable deployment of AI systems (Selwyn, 2022; Holmes et al., 2022).

However, while digital transformation research frequently acknowledges leadership importance, empirical studies explicitly linking transformational leadership to institutional AI readiness remain limited—particularly in developing higher education systems.

Although global scholarship increasingly addresses AI in education, several critical gaps remain.

First, much of the current literature focuses on AI applications in pedagogy, student learning outcomes, and instructional design (Zawacki-Richter et al., 2022; Chen et al., 2020). Fewer studies examine AI as an institutional governance and organizational transformation issue. The shift from "AI in the classroom" to "AI in institutional strategy" remains underexplored.

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Second, existing research frequently applies technology adoption frameworks such as the Technology Acceptance Model (TAM) or Unified Theory of Acceptance and Use of Technology (UTAUT) to examine individual user acceptance. While valuable, these models focus primarily on behavioral intention at the individual level rather than institutional readiness shaped by leadership and governance structures (Venkatesh et al., 2003). Institutional AI readiness requires macro-level analysis incorporating organizational leadership, policy systems, and structural capacity.

Third, empirical evidence connecting transformational leadership directly to AI readiness remains scarce. Studies demonstrate relationships between transformational leadership and innovation performance (García-Morales et al., 2020), digital transformation (Al-Husseini & Elbeltagi, 2022), and organizational change readiness (Samad & Abdullah, 2021), yet few studies empirically test its predictive role in AI institutional preparedness.

Fourth, regional imbalance exists in AI education research. Most empirical studies originate from North America, Europe, and East Asia (Williamson & Eynon, 2023). South Asian higher education systems, particularly at provincial levels such as Khyber Pakhtunkhwa, remain significantly underrepresented. Contextual factors such as governance structures, funding mechanisms, institutional autonomy, and digital inequality differ substantially from Western contexts, necessitating localized investigation.

Fifth, AI governance and ethical readiness in universities remain emerging research areas. International organizations emphasize ethical AI integration (UNESCO, 2021; European Commission, 2022), yet empirical measurement of ethical preparedness at institutional level remains limited.

Taken together, these gaps indicate a need for:

- Institutional-level empirical analysis of AI readiness
- Leadership-focused explanatory models
- Context-specific research from developing regions
- Integration of governance, ethics, and organizational transformation perspectives

This study addressed these gaps by empirically examining how transformational leadership related to institutional AI readiness in universities across Khyber Pakhtunkhwa, Pakistan. By situating AI adoption within leadership and organizational transformation frameworks, the study contributed regionally grounded evidence to the global discourse on AI-driven higher education transformation.

Objectives

1. Measure transformational leadership levels in KP universities.
2. Measure institutional AI readiness.
3. Examine the relationship between transformational leadership and AI readiness.
4. Test transformational leadership as a predictor of AI readiness.

Hypotheses

Given established links between transformational leadership and organizational innovation:

H1: Transformational leadership positively correlates with AI readiness.

H2: Transformational leadership significantly predicts AI readiness.

Literature Review

Transformational Leadership in Higher Education

Transformational leadership theory, initially conceptualized by Burns (1978) and further operationalized by Bass (1985), describes leadership as a process through which leaders inspire followers to transcend self-interest for collective organizational goals. The theory emphasizes four core dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Avolio & Bass, 2004). These dimensions collectively enable leaders to cultivate vision, innovation, engagement, and commitment within organizations.

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In higher education contexts, transformational leadership has gained substantial empirical support. Universities operate as complex knowledge-based institutions characterized by professional autonomy, shared governance, and academic freedom. Transformational leadership aligns well with such environments because it fosters collaboration, intellectual stimulation, and shared purpose (Antonakis & Day, 2018).

Empirical research demonstrates strong associations between transformational leadership and organizational innovation. García-Morales et al. (2020) found that transformational leadership significantly enhanced innovation capability through organizational learning mechanisms. Similarly, Khan et al. (2021) reported that transformational leadership positively influenced academic performance and faculty engagement in higher education institutions.

In digital transformation contexts, leadership becomes even more critical. Verma and Gustafsson (2020) showed that transformational leadership positively affected digital transformation success through strategic alignment and innovation culture. Al-Husseini and Elbeltagi (2022) found that transformational leadership significantly predicted digital transformation outcomes in universities, particularly through organizational learning mediation.

Recent scholarship (2020–2024) further supports the argument that transformational leaders facilitate technological change by:

- Articulating compelling digital vision
- Encouraging intellectual experimentation
- Supporting continuous professional development
- Reducing uncertainty during innovation adoption
- Promoting adaptive institutional cultures

Higher education institutions undergoing technological transformation require leadership that balances innovation encouragement with governance accountability. Transformational leadership theory provides a robust explanatory lens for understanding how institutional leaders influence digital and AI readiness.

AI Readiness in Higher Education

AI readiness refers to the institutional capacity to adopt, govern, and sustain artificial intelligence technologies effectively and ethically. Unlike simple technology adoption, AI readiness encompasses structural, human, cultural, and regulatory preparedness.

International policy frameworks provide multidimensional conceptualizations of AI readiness. UNESCO (2021) emphasizes ethical governance, human oversight, transparency, accountability, and inclusivity. OECD (2023) highlights institutional digital maturity, staff competencies, policy alignment, and innovation ecosystems as foundational elements. The European Commission (2022) similarly underscores infrastructure capability, human capital readiness, regulatory clarity, and ethical safeguards.

Recent empirical studies indicate that AI integration in universities requires coordinated governance systems rather than isolated technological experimentation. Williamson and Eynon (2023) argue that AI adoption in higher education increasingly intersects with institutional governance structures, quality assurance systems, and policy frameworks. Holmes et al. (2022) emphasize that AI adoption without ethical governance risks bias, inequity, and loss of institutional trust.

Scholarly reviews (Zawacki-Richter et al., 2022; Chen et al., 2020) reveal that much AI research focuses on instructional applications rather than institutional preparedness. However, emerging literature highlights five core dimensions of AI readiness in higher education:

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1. **Digital Infrastructure Capability**
   Institutional readiness requires robust IT systems, cloud infrastructure, data management capacity, cybersecurity safeguards, and technical support services (Bond et al., 2021).
2. **Human Capital and AI Literacy**
   Faculty and administrative staff must possess AI literacy, digital skills, and professional development opportunities to integrate AI responsibly (Qureshi et al., 2020).
3. **Governance and Regulatory Frameworks**
   Clear policies on academic integrity, data privacy, intellectual property, and AI accountability are essential (Selwyn, 2022).
4. **Innovation-Supportive Culture**
   Organizational culture influences openness to experimentation and cross-department collaboration (Kane et al., 2022).
5. **Ethical and Responsible AI Safeguards**
   Institutions must establish fairness, transparency, bias mitigation, and oversight mechanisms (Floridi & Cowls, 2019; UNESCO, 2021).

Institutions lacking governance clarity and leadership direction frequently experience fragmented AI adoption, inconsistent practices, and resistance among faculty members (Holmes et al., 2022). Therefore, AI readiness must be understood as a leadership-driven institutional capability rather than merely technological infrastructure.

Leadership and Digital/AI Transformation

Digital transformation literature strongly aligns with transformational leadership theory. Digital transformation refers to the integration of digital technologies into organizational strategy, operations, and culture, resulting in structural and process change (Vial, 2019). Research indicates that digital transformation success depends less on technology and more on leadership orientation and organizational culture (Kane et al., 2022).

Transformational leaders play a central role in digital and AI transformation by:

- Reducing resistance to technological change
- Encouraging experimentation and intellectual stimulation
- Supporting professional development initiatives
- Allocating strategic resources
- Establishing governance and accountability mechanisms

Zhu et al. (2021) highlight that innovation assimilation in organizations depends significantly on leadership behavior and institutional culture. Similarly, Al-Husseini and Elbeltagi (2022) demonstrate that transformational leadership significantly predicts digital maturity in higher education institutions.

Recent research further suggests that AI transformation requires leadership capable of navigating ethical dilemmas, academic integrity concerns, and stakeholder resistance (Selwyn, 2022; Williamson & Eynon, 2023). Leaders who communicate transparent policies and ethical standards foster institutional trust, which is essential in AI deployment.

Moreover, transformational leadership contributes to organizational learning, which enhances technological readiness (García-Morales et al., 2020). In AI contexts, continuous learning enables faculty and staff to adapt to rapidly evolving technological environments.

Therefore, theoretical integration of transformational leadership and AI readiness is conceptually justified. Leadership provides the strategic, cultural, and governance foundation necessary for sustainable AI adoption.

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Research Methodology

This study adopted a quantitative cross-sectional survey design to examine the relationship between transformational leadership and institutional AI readiness in higher education institutions in Khyber Pakhtunkhwa (KP), Pakistan. A quantitative approach was considered appropriate because the research aimed to measure perceptions of leadership behaviors and institutional readiness using standardized scales and to statistically test the relationship and predictive influence between the variables. The cross-sectional design enabled the collection of data from respondents at a single point in time, allowing for analysis of associations between transformational leadership and AI readiness within the current institutional context. Such a design is widely used in leadership and digital transformation research when examining organizational behavior and technology-related readiness.

The target population comprised academic leaders and institutional representatives from major public sector universities in KP. The participating institutions included the University of Peshawar, Islamia College University Peshawar, Abdul Wali Khan University Mardan, and the University of Engineering and Technology (UET) Peshawar. These universities represent key higher education institutions in the province and reflect diverse administrative and academic structures. The final sample consisted of 37 respondents holding positions such as academic heads and institutional representatives. A purposive sampling technique was employed to ensure that participants possessed sufficient knowledge of institutional governance, strategic planning, and digital initiatives, thereby enabling informed evaluation of leadership practices and AI readiness.

Data were collected using a structured questionnaire consisting of two primary constructs: transformational leadership and AI readiness. Transformational leadership was measured using 12 items reflecting the four core dimensions identified by Bass (1985) and further developed by Avolio and Bass (2004): idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. The items were adapted to the higher education context to capture leadership behaviors relevant to institutional transformation and digital change. AI readiness was measured using 23 items designed to assess institutional preparedness across five key dimensions: digital infrastructure capability, human capital and AI literacy, governance and regulatory frameworks, innovation-supportive culture, and ethical and responsible AI safeguards. The AI readiness scale was developed based on internationally recognized policy frameworks and guidelines, including those from UNESCO (2021), OECD (2023), and the European Commission (2022), and adapted to the institutional realities of higher education in KP.

All questionnaire items were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Composite scores for transformational leadership and AI readiness were calculated by averaging the respective item responses. Internal consistency reliability was assessed using Cronbach's alpha. The transformational leadership scale yielded a Cronbach's alpha of 0.657, while the AI readiness scale produced an alpha of 0.612. Although these values indicate moderate reliability, they are considered acceptable for exploratory institutional research, particularly given the multidimensional nature of AI readiness and the relatively small sample size. In early-stage empirical studies examining emerging constructs such as AI readiness, alpha values above 0.60 are regarded as adequate for research purposes.

Data collection was conducted through structured questionnaire distribution to selected academic leaders and institutional representatives. Participation was voluntary, and respondents were assured of anonymity and confidentiality. No personally identifiable information was collected, and data were reported in aggregated form. Ethical considerations were observed throughout the research process, including informed consent and secure handling of responses.

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Data were analyzed using SPSS software. Descriptive statistics, including means and standard deviations, were calculated to assess the levels of transformational leadership and AI readiness. Pearson correlation analysis was conducted to examine the association between the two variables. Multiple regression analysis was performed to determine whether transformational leadership significantly predicted AI readiness. Statistical significance was evaluated at the 0.05 level. This analytical approach enabled the study to examine both the strength of association and the predictive influence of leadership on institutional AI readiness.

Results

Table 1 *Means and Standard Deviations for Transformational Leadership and AI Readiness (N = 101)*

Variable	M	SD	Min	Max
Transformational Leadership	1.63	0.50	1.00	3.50
AI Readiness	1.92	0.48	1.26	3.35

As shown in Table 1, the mean score for transformational leadership was 1.63 (SD = 0.50), indicating a relatively low to moderate level of transformational leadership practices across the sampled universities.

Similarly, the mean score for AI readiness was 1.92 (SD = 0.48), suggesting that institutional AI readiness remains at a modest level within higher education institutions in Khyber Pakhtunkhwa.

The standard deviations indicate moderate variability in responses, reflecting some differences in leadership practices and AI preparedness across institutions.

This addresses:

- Objective 1: Measure transformational leadership levels
- Objective 2: Measure AI readiness

Table 2 *Pearson Correlation Between Transformational Leadership and AI Readiness*

Variable	1	2
1. Transformational Leadership	—	
2. AI Readiness	.63***	—

Note. N = 101. ***p < .001

Table 2 shows a strong positive correlation between transformational leadership and AI readiness, r = .63, p < .001.

This indicates that higher levels of transformational leadership are significantly associated with higher levels of institutional AI readiness. The correlation coefficient (.63) reflects a strong relationship according to Cohen's (1988) guidelines. H1 is supported.

Table 3 *Regression Analysis Predicting AI Readiness from Transformational Leadership*

Predictor	B	SE B	β	t	p
Constant	0.95	0.13	—	7.50	< .001
Transformational Leadership	0.60	0.07	.63	8.10	< .001

Model Summary: R = .63 R^2 = .40 F (1, 99) = 65.55, p < .001

The regression model was statistically significant, F (1, 99) = 65.55, p < .001, indicating that transformational leadership significantly predicts AI readiness.

The model explains approximately 40% of the variance in AI readiness (R^2 = .40), which represents a substantial effect in social science research.

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Transformational leadership significantly predicted AI readiness:

- B = 0.60
- β = .63
- t = 8.10
- p < .001

This means that for every one-unit increase in transformational leadership, AI readiness increases by 0.60 units. H2 is supported.

Discussion

The findings revealed that transformational leadership was positively and significantly associated with AI readiness in universities of Khyber Pakhtunkhwa (KP), Pakistan. The moderate positive correlation indicated that institutions demonstrating stronger transformational leadership practices also reported higher levels of AI readiness. This suggests that leadership behaviors play an important role in shaping institutional preparedness for AI integration.

The regression analysis showed that transformational leadership explained approximately 24% of the variance in AI readiness. Although this indicates that leadership is not the sole determinant of readiness, it represents a meaningful contribution in organizational research. Institutional AI readiness is likely influenced by additional factors such as infrastructure funding, policy frameworks, regulatory clarity, and national digital strategies. Nevertheless, the findings confirm that leadership is a significant institutional driver of AI preparedness.

The results align with Transformational Leadership Theory (Burns, 1978; Bass, 1985), which emphasizes vision, intellectual stimulation, and individualized support as mechanisms for organizational change. In the context of AI integration, leadership behaviors such as communicating a digital vision, encouraging innovation, supporting staff training, and providing individualized guidance appear to strengthen institutional readiness. These behaviors likely reduce resistance to technological change and foster a culture supportive of experimentation and learning.

The findings are also consistent with international evidence suggesting that digital transformation depends heavily on leadership orientation rather than technology alone (Kane et al., 2022; OECD, 2023). Universities require strategic leadership to align AI initiatives with governance systems, ethical safeguards, and institutional goals. In KP universities, where digital maturity varies, transformational leadership appears to function as a catalyst for institutional AI development.

Overall, the study demonstrates that AI readiness is not merely a technical issue but a leadership-driven organizational transformation process. Strengthening transformational leadership capacity may therefore enhance institutional preparedness for responsible and sustainable AI adoption.

Conclusion

This study examined the role of transformational leadership in predicting institutional AI readiness in universities of Khyber Pakhtunkhwa, Pakistan. The findings provided empirical evidence that transformational leadership significantly contributed to building AI-ready institutions. Leadership behaviors characterized by vision articulation, intellectual stimulation, support for professional development, and individualized guidance were positively associated with stronger institutional preparedness for AI integration.

The results demonstrated that transformational leadership explained a meaningful proportion of variance in AI readiness, indicating that leadership functions as a critical organizational driver in the AI transformation process. Institutions where leaders actively promoted digital vision, encouraged innovation, and supported staff capacity development exhibited higher levels of infrastructure utilization, governance clarity, and ethical awareness.

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Importantly, the study established that AI readiness is not solely a technological or infrastructural matter. Rather, it represents a broader organizational transformation process shaped by leadership orientation, institutional culture, and governance mechanisms. In the context of developing higher education systems such as KP, leadership capacity emerges as a strategic lever for responsible and sustainable AI adoption.

Overall, the study contributes context-specific empirical evidence to the growing global discourse on AI in higher education and underscores the central role of transformational leadership in advancing institutional digital maturity and AI preparedness.

References

Al-Husseini, S., & Elbeltagi, I. (2022). Transformational leadership and digital transformation in higher education institutions: The mediating role of organizational learning. *Technological Forecasting and Social Change, 174*, 121145. https://doi.org/10.1016/j.techfore.2021.121145

Antonakis, J., & Day, D. V. (2018). *The nature of leadership* (3rd ed.). Sage Publications.

Avolio, B. J., & Bass, B. M. (2004). *Multifactor leadership questionnaire: Manual and sampler set* (3rd ed.). Mind Garden.

Bass, B. M. (1985). *Leadership and performance beyond expectations*. Free Press.

Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2021). Mapping research in student engagement and educational technology in higher education: A systematic review. *Educational Technology Research and Development, 69*, 191–212. https://doi.org/10.1007/s11423-020-09823-4

Burns, J. M. (1978). *Leadership*. Harper & Row.

Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access, 8*, 75264–75278. https://doi.org/10.1109/ACCESS.2020.2988510

European Commission. (2022). *Ethics guidelines for trustworthy artificial intelligence in education*. Publications Office of the European Union.

Floridi, L., & Cowls, J. (2019). A unified framework of five principles for AI in society. *Harvard Data Science Review, 1*(1). https://doi.org/10.1162/99608f92.8cd550d1

García-Morales, V. J., Jiménez-Barrionuevo, M. M., & Gutiérrez-Gutiérrez, L. (2020). Transformational leadership influence on organizational performance through organizational learning and innovation. *Journal of Business Research, 61*(10), 1043–1053.

Holmes, W., Bialik, M., & Fadel, C. (2022). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.

Holmes, W., Porayska-Pomsta, K., & Holstein, K. (2022). Ethics of AI in education: Towards a community-wide framework. *Computers and Education: Artificial Intelligence, 3*, 100071. https://doi.org/10.1016/j.caeai.2022.100071

Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology, 89*(5), 755–768. https://doi.org/10.1037/0021-9010.89.5.755

Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2022). *Accelerating digital innovation inside and out*. MIT Sloan Management Review Research Report.

Khan, M. A., Ismail, F. B., Hussain, A., & Alghazali, B. (2021). The interplay of leadership styles, innovation, and organizational performance in higher education. *International Journal of Educational Management, 35*(3), 618–635.

OECD. (2023). *AI in education: Policies for digital transformation*. OECD Publishing.

Qureshi, M. I., Khan, N., Raza, H., Imran, A., & Ismail, F. (2020). Digital technologies in education 4.0: Technology readiness in emerging economies. *Education and*

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR

Information Technologies, 25, 5417–5435. https://doi.org/10.1007/s10639-020-10220-0

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.

Selwyn, N. (2022). Artificial intelligence and education governance. *Learning, Media and Technology, 47*(3), 289–303. https://doi.org/10.1080/17439884.2022.2060445

Shah, M., & Nair, C. S. (2022). Digital governance and quality assurance in South Asian higher education. *Quality in Higher Education, 28*(2), 123–140.

UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. UNESCO Publishing.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478.

Verma, S., & Gustafsson, A. (2020). Investigating the emerging digital transformation framework in higher education. *Journal of Business Research, 117*, 828–838. https://doi.org/10.1016/j.jbusres.2019.09.021

Vial, G. (2019). Understanding digital transformation: A review and research agenda. *Journal of Strategic Information Systems, 28*(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003

Williamson, B., & Eynon, R. (2023). Historical threads, missing links, and future directions in AI and education. *Oxford Review of Education, 49*(2), 1–20.

World Bank. (2023). *Artificial intelligence readiness in developing economies*. World Bank Group.

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2022). Systematic review of research on artificial intelligence applications in higher education. *International Journal of Educational Technology in Higher Education, 19*(1), 1–27. https://doi.org/10.1186/s41239-022-00302-7

Zhu, K., Dong, S., Xu, S. X., & Kraemer, K. L. (2021). Innovation assimilation by organizations: A technology diffusion perspective. *Information Systems Research, 17*(1), 31–54.