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The Role of Educational Leaders in Navigating AI Integration: Implications for Creativity and Critical Thinking

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Abstract

The fast rate of growth of Artificial Intelligence (AI) in higher education has led to the disruption of all the normal practices within the academic sphere, and this leads to both challenges and opportunities among the institution's leadership. This review paper critically examines the question of the successful AI integration management by educational leaders and the preservation of crucial cognitive skills like creativity and critical thinking. Based on the existing leadership paradigms, such as the Transformational, Distributed, and the Technology-Organisation-Environment (TOE) framework, and new directions, such as Ethical Adaptive Leadership, the article integrates theoretical and empirical studies in order to consider the applied aspects of leadership, AI, and student cognition. It outlines some of the critical issues concerning the leaders, such as ethical issues, excessive automation, institutional readiness, and the threat of reduced student agency. The results reveal the necessity of implementing strategic leadership techniques supportive of responsible AI use, constant faculty enrichment, and balanced pedagogical strategies. The review ends with the conclusion that educational leaders need to take on a transformational and ethically-informed role to see that AI technologies improve rather than derail the intellectual and creative growth of students in the era of digitalization.

Key Words

Educational Leadership, Artificial Intelligence, Higher Education, Creativity, Critical Thinking, Ethics in Artificial Intelligence, Leadership Models, Digital Pedagogy

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Introduction

Artificial Intelligence is a widely used technology nowadays in educational institutions. Universities and colleges are adopting AI technology for performance assessment, forecasting student outcomes, and streamlining clerical tasks. UNESCO (2025) reports that the use of AI in higher education has grown by over 300% in the time span since 2020. This advancement has many associated benefits; however, it poses serious concerns regarding its effect on nurturing student creativity and critical thinking. AI systems, by focusing on design, emphasize efficiency and personalization, but they may unintentionally reduce student reflection, deep learning and independent logic (Luckin et al., 2016).

Holmes et al. (2022) warn that overreliance on AI can lead to cognitive inactivity in students, which affects the development of important higher-order reasoning skills. With any innovation, educational leaders such as deans, departmental chairs and policy makers play an essential role as change managers in implementing the technology.

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They not only have to decide which technologies fit in best, but also ensure that the tools enhance learning and uphold academic integrity. However, preserving quality learning while embracing innovation has proven difficult for many leaders. According to Charles and Papadaki (2025), there is a growing leadership gap in ensuring that the use of AI in education supports rather than replaces human-centred education.

Moreover, recent documents further highlighted this gap. Crompton and Burke (2023) reported that although 61% of institutions in higher education are currently using AI, more than 70% of academic leaders feel unprepared to deal with its unintended consequences. Alarmingly, 80% expect that AI can prevent academic integrity, but lack the necessary professional development to respond effectively.

This review article explores how educational leaders can successfully navigate the integration of AI. It examines the concepts that shape leadership regarding AI use in education, the primary challenges it poses, and its impact on students' creativity and critical thinking. It also suggests practical strategies to help leaders adopt AI effectively that support quality education.

Research Questions

The following questions shape this article:

1. What applicable leadership frameworks inform the incorporation of AI technologies in higher education institutions?
2. What key obstacles do educational leaders confront as they pursue AI adoption?
3. In what ways does AI influence students' creativity and critical thinking skills?
4. 4. What strategies can leaders implement to ensure that AI is used ethically and in a balanced manner?

Theoretical Models for AI Leadership

To understand how the educational leadership is directing the infusion of artificial intelligence (AI) in higher education calls for a scrutiny of the theoretical underpinnings that influence their decision-making. An analysis of recent years (2020–2025) literature reveals three pervasive leadership approaches in the literature, namely: Transformational Leadership, Distributed Leadership and TOE Framework. These models provide insight into the ways that leaders can adopt, apply and gauge AI tools in their organisation.

Transformational Leadership

Transformational leadership focuses on building a shared vision, motivating followers and leading change through motivation (Bass & Riggio, 2006). In the AI space, this structure is helping educators inspire academics and students to use technology in new ways—and drive better learning outcomes. For instance, some universities utilise AI-based analytics to predict student performance and decrease attrition. Such leaders frequently project a constructive and dynamic view regarding change and foster the act of experiment-based creativity among their employees (Yang, 2025). However, this framework has limitations. It may fail to take into account realities such as opposition from staff, woeful lack of infrastructure, and ethical concerns about AI per se (Zhang & Jiang, 2025).

Distributed Leadership

It is the distribution of leadership and the associated collaborative and collective decision-making among a set of people in an organization (Göksoy, 2015). For AI, that involves teachers, IT staff, and students in planning for and implementing AI tools.

Recent work suggests that when faculty participate in the design and choice of AI systems, they are better positioned to make use of them productively in the classroom (Wang, 2023). There is appreciated innovation at the grassroots level, but decisions can be delayed if the responsibilities are not clear.

Technology-Organisation-Environment (TOE) Framework

The TOE framework is usually used to examine how agencies use new strategies primarily based on three main factors: technological preparedness, organizational ability and environmental pressure (Tornatzky & Fleischer, 1990). Previous studies have shown that the adoption of AI in educational organizations can be affected by factors such as technology, organization and environment. The technology component considers aspects such as the type of AI tool and its complexity. The second element is the organization which includes factors such as institutional size, culture and available resources. Finally, the environment involves support systems like policy or community resources. Uren and Edwards (2023) proposed a revised model based on these three components to help educational leaders evaluate whether they have sufficient infrastructure, support structures and outer environmental conditions for AI tools to be effective in their institutions (Uren & Edwards, 2023).

One limitation of this framework is that it primarily focuses on technical aspects like infrastructure. Many educational leaders need more guidance on how to use AI purposefully for deeper learning objectives--for example, how to foster creativity or critical thinking in students. Technology Organization Environment (TOE) Learning Adoption Frameworks

Emerging Model: Ethical Adaptive Leadership

A new model called moral flexible leadership has appeared in recent years. This model combines freedom in decision-making with a strong moral basis. Leaders who use this method focus on balancing creativity with justice, privacy and students' welfare (Zhang & Jiang, 2025). As AI equipment grows to be concerned with observation, stratum and equality, this manual helps leaders make decisions that are both effective and morally stable.

Challenges for Educational Leaders in AI Integration

Although the use of AI in higher education holds great promise, it presents immense challenges for educational leaders. The most critical issue is the fact that the speed of resourcing AI grows faster than organizational leaders are ready (Charles & Papadaki, 2025). A significant number of leaders lack proper education in technological novelties and have doubts when determining the pedagogical implications of AI tools.

As it has been illustrated in Figure 1, the percentage of the use of AI in higher education has grown significantly between 2020 and 2025, i.e., by 25 to 70%, whereas the rate of leadership preparation has remained considerably lower, i.e., of 20 to 38% (Crompton & Burke, 2023). This disconnect means that whereas institutions are becoming ever reliant on AI to perform administrative duties, predictive analytics, and customised learning, leaders might not be ready to handle the more academic consequences of AI, notably a loss of student creativity and critical thinking.

Data ethics and algorithmic bias are another high-priority issue. Artificial intelligence systems are dependent on extensive amounts of data, and biased or incomplete data may infer biased results and practices (Luckin et al., 2016). The people in charge should learn about the moral aspects and be ready to establish protective measures.

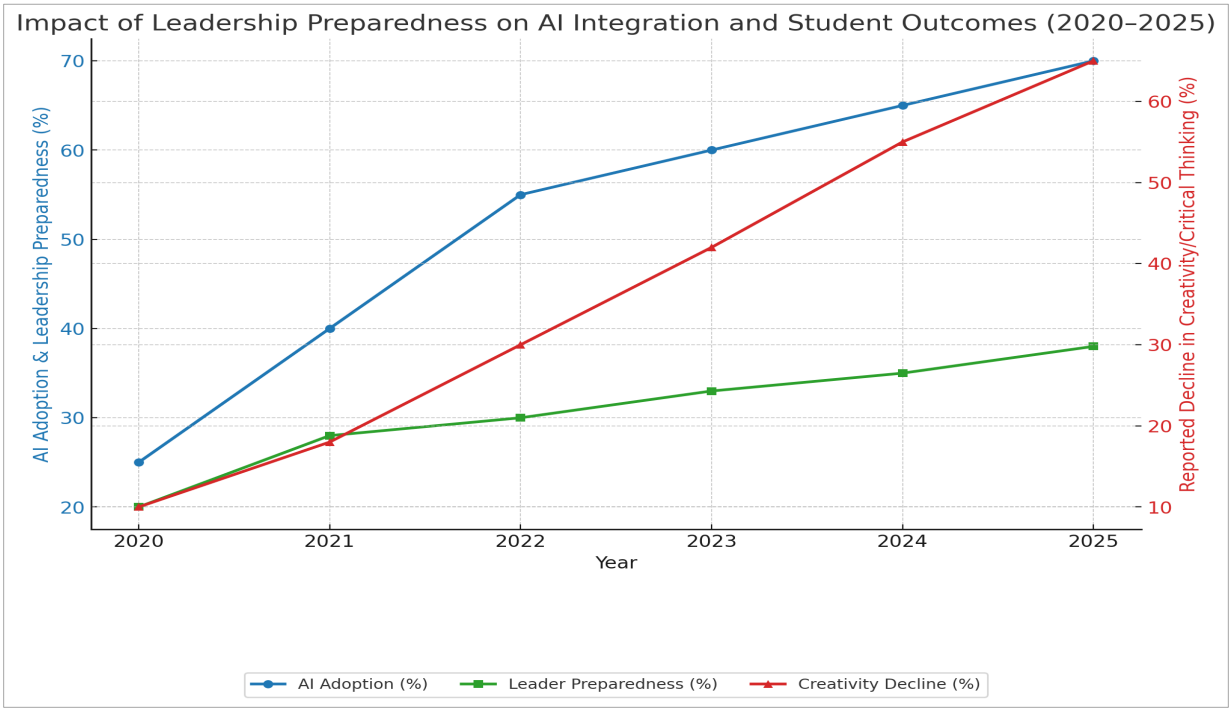
Moreover, leaders have a problem or face a dilemma while balancing innovation with humanistic learning. Zawacki-Richter et al. (2019) warn that over-reliance on automated systems could marginalise effective dialogue, open-ended inquiry and creativity, which are the most important elements of higher education. Finally, this challenge is not only technical, but it is also philosophical because the AI opposes the classical teacher-pupil relationship and the use of intuition and dreams in the process of studying.

To get through these difficulties, Fullan (2001) stresses the need for adaptive leadership: the leaders need to learn, forget, and acquire again as the technological environment changes. Nevertheless, it is essential that it has institutional support, i.e. professional development, grants to do research, and a code of ethics.

Figure 1 below illustrates how leadership unpreparedness has been in tandem with an alarming increase in the number of students reporting a reduction in creativity and critical thinking in the set periods between 2020 and 2025.

Figure 1

Impact of Leadership Preparedness on AI Integration and Student Outcomes (2020–2025)



Crompton & Burke (2023); UNESCO (2025)

Leadership Challenges and Their Effects on Student Creativity & Critical Thinking. It visually presents:

- The rise of AI adoption in higher education.
- A relatively low increase in leader preparedness.
- A corresponding increase in reported decline in student creativity and critical thinking.

Research Gaps and Prospects

4.1. Few Empirical Works on the Effects of AI on Creativity and Critical Thinking

Although numerous articles are written about the possibilities and possible risks of AI, there is an unexpected lack of empirical studies that directly quantify the outcomes of the use of AI tools in the real context of academia on the creativity and critical thinking of students (Holmes et al., 2022; Zawacki-Richter et al., 2019). The majority of existing literature is based on theoretical expectations or merely states general learning outcomes. It is obvious that longitudinal research is required to monitor these cognitive abilities prior to and after AI tools have been implemented.

Management Lapses and Misalignment of Leadership Training

The existing literature is focused on the lack of preparedness among the leaders (Crompton & Burke, 2023), yet there are limited evidence-based programs or tested models of leadership development specifically oriented on AI readiness in the realms of education. There is a lack of research on the mismatch between strategic policy and effective leadership practice on the frontline (Yang, 2025).

The Absence of Context-Specific Research

Most of the AI-in-education literature focuses on institutions of higher learning in the West, ignoring contextual issues in developing world universities or under-suitably equipped ones (UNESCO, 2025). Issues like infrastructure, cultural attitudes towards AI, and policy systems vary so incredibly much, yet they are seldom disaggregated in studies.

AI Integration Student Agency

The students are considered not only as the recipients of AI technologies but also as stakeholders who might co-create, question, or govern the AI systems employed in the learning context. The visibility of student voice, agency, and ethics through the prism of learner-centred design still remains an area with a lot of opportunities (Uren & Edwards, 2023; Wang, 2023).

Recommendations for Educational Leaders

In order to achieve the successful and responsible adoption of Artificial Intelligence (AI) in higher education, educational leaders should consider a proactive, informed, and student-centred perspective on this matter. The recommendations below address how the gap between fast AI adoption and pedagogical integrity can be closed.

Professional Development AI Literacy

Increasing educational leaders' AI literacy is one of the most eminent necessities. This is because most administrators have not been trained on AI technologies, and they are not in a position to think critically about the consequences of AI on pedagogy (Charles & Papadaki, 2025). One of the things that universities should invest in is continuous professional development workshops that look into AI ethics, data privacy, algorithmic bias, and educational design principles. Other parameters that should be taught to the leaders are to ensure that they make practical use of the AI analytics tools without overly automating.

AI Ethics Framework Development

Institutions should have a definite AI governance and ethics policy. Data privacy, protection, and algorithmic transparency should be used to discuss such issues in these policies (Holmes et al., 2022). The best practice is to develop ethical standards through collaboration of the leadership teams with the representatives of IT, faculty, and students to uphold institutional values and the principles of international standards (UNESCO, 2025).

Promoting the Development of an Innovation and Humanistic Learning Balance

The leaders must balance being innovative with AI and the humanistic spirit of education. Over-automation, as Zawacki-Richter et al. (2019) state, can also repress some key cognitive abilities including creativity and judgment. The pedagogical designs that blend AI-based tools with project-based activities, open discussions, and reflection tasks ought to be encouraged by leaders in order to keep the thinking process moving.

Shared Decision-Making

Transformational leadership and distributed leadership, which are inclusive leadership styles, are capable of improving the integration of AI. These models facilitate interdepartment teamwork and student and faculty participation in decision making processes (Fullan, 2001). Inclusion of a variety of voices guarantees that the implementation of AI is relevant, and equitable and pedagogically promising.

Mechanisms of Evaluation and Feedback

Monitoring and evaluation processes must be continuous with a view of measuring the impact of AI on the learning outcome of the student. Leaders must put in place feedback loops that include teachers and students to gauge the

levels of creativity, engagement, and critical thinking that have changed. Such evidence-based leadership makes sure that AI tools are developed depending on classroom realities rather than simply on administrative convenience (Selwyn, 2019).

Conclusion

The review article was aimed at investigating four imperative questions of AI incorporation into higher education leadership. By considering the leadership structures, institutional hurdles, mental influences as well as the ethical undertakings, the research has been able to come up with the opportunities that the educational leaders have to tackle in addition to the pitfalls that they ought to avert. These results indicate that the current leadership models still provide a partial solution, and more holistic and ethically centered leadership is in order to make sure that AI assists and, not hinders, the creativity and critical thinking of the student.

Over the recent years, the use of artificial intelligence (AI) in higher education has been at an all-time high rate of development. Though this development brings about novel opportunities in the capability of the administrators to raise their efficiency levels and individualizes learning, it is of grave concern to the long-term implications of the consequences on student creativity and critical reasoning. This review emphasizes that educational leaders are critical in ensuring the adoption and use of AI tool to fit well into pedagogical values.

This article has explored the main leadership models transformational, distributed, TOE framework, and emerging ethical adaptive leadership and has determined that although each of these models forms a worthwhile perspective, insufficient action can be achieved by the use of any one of them to access the ethical, cognitive and structural challenges that arise due to the AI integration. The disintersection between high rates of technological use and the readiness of the leaders is still one of the most burning issues of the modern world of higher education.

The only ways in which educational leaders can ensure successful navigation of the era of AI are proactive strategies informed by ethical consideration, a professional growth mindset, and situation-specific planning. Finally, leadership should also not only lead innovation but also protect the humanistic mission of education development, which prepares people to think deeply, think creatively and makes an entire learner.

Future Research Direction

Although there is an increased literature on the use of artificial intelligence in education, a number of gaps exist. To begin with, in future research, it would be necessary to go beyond theoretical estimations and explore the issue in its application to the sphere of creativity and critical thinking of students. The longitudinal or mixed-methods study might help capture the shift in cognitive outcome comparisons both pre and post-implementation of AI tools.

Second, there should be additional academic interest in leadership development programs. No evidence-based models of preparation of academic leaders on the path to ethical, pedagogical, and strategic integration of AI can be found. Studies ought to be carried out on the influence of such training on decision-making and culture of institutions.

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