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Adaptive School Leadership for AI-driven Education: A Posthuman Perspective

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Abstract

The complex integration of artificial intelligence (AI) into both physical and biological spheres drives transformative change, making adaptive leadership an essential skill. Leaders must act quickly, as they can no longer afford to delay preparing for the era of artificial intelligence and the emerging digital domain of quantum computing and neurotechnology. Education and lifelong learning are key drivers, enabling current and future generations to succeed in this shifting landscape while tackling societal challenges posed by AI, as well as existential threats such as climate change and population growth. Therefore, educational leaders must acquire the necessary skills and adopt forward-looking leadership behaviours to align their institutions with the realities of an AI-driven world. This study aimed to gather school leaders' perspectives on redefining leadership for the AI age. Their insights were critically analysed to determine whether they are the main influencers in shaping dynamic, high-performing schools capable of preparing students for an AI-dominated future. Using a qualitative research approach, the data were examined through the prism of posthuman theory and qualitative content analysis. Key findings suggest that school leaders need to employ non-anthropocentric adaptive leadership to manage digital fatigue among staff and students, while leveraging AI to promote future-ready learning. The study recommends that school leaders transform their practices to meet the demands of the AI era by integrating advanced AI tools and methodologies into educational strategies, and fostering environments that emphasise innovation, creativity, and critical thinking.

Keywords: quantum computing, neurotechnology, futuristic learning, digital fatigue, non-anthropocentric

1. Introduction

A decade ago, Schwab (2015, p.2) emphasised, "We are approaching a technological revolution poised to drastically change our lifestyles, work environments, and interpersonal relationships. Due to its immense scale, scope, and complexity, this transformation will be unparalleled in human history." We are no longer approaching a technological revolution but are now moving into the next digital era: the age of artificial intelligence (AI). In today's data-driven age, mastering artificial intelligence (AI) and enhancing leadership skills are

essential for managing the complexities of digital transformation. Effective leaders must understand AI's potential to boost performance and excel in strategic execution to stay competitive. This requires a blend of technological knowledge, a clear grasp of leadership dynamics, and the ability to translate strategy into action. Developing these skills ensures organisations adapt to the digital age and lead in innovation and success (IESE, 2025).

As these innovations permeate classrooms, schools, and administrative offices, it becomes essential for leaders of educational institutions to adapt to this new AI era and understand its potential and risks. In doing so, they can harness its capabilities to create more adaptive, data-driven, and ultimately student-centred environments (Luis, 2024). However, today's educational decision-makers are often trapped in traditional, linear thinking or too absorbed by the numerous crises demanding their attention to think strategically about the forces of disruption and innovation shaping our future. Traditional leadership mindsets, styles, and methods within most educational institutions are not suited to cope with this new operating environment's speed, volatility, complexity, and ambiguity (Şen, 2020). Leaders must adjust their decision-making to keep pace with AI innovation. It is not just about what has worked before; it is about remaining agile, inspiring creativity, and leveraging AI as a supportive tool rather than being the sole driver. This requires adaptive leadership with a posthuman outlook (Martins, 2024).

This adaptive leadership style, aligned with a posthuman perspective, supports futurist learning in schools by emphasising innovative classroom designs that promote collaboration and creativity among children. Future-focused classrooms provide flexible learning spaces tailored to diverse teaching methods to enhance learning. The concept of futuristic learning empowers learners to succeed both now and in the future, enabling them to generate knowledge rather than merely consume it (Kayyali, 2022; Nivetha, 2024). New possibilities are realised in the classroom through the integration of technology with education. Incorporating artificial intelligence and interactive technology simplifies knowledge transfer for instructors, enhances their ability to recognise learners' potential, and facilitates the learning process (Kayyali, 2022; Nivetha, 2024).

Despite increasing research on AI in education, a considerable gap remains in the literature regarding a systematic classification of AI applications tailored explicitly for educational leadership. This gap limits educational leaders' ability to understand and strategically implement AI solutions within their institutions fully (Sposato, 2025). As a result, this study aimed to gather school leaders' perspectives on redefining leadership for the AI era. It critically analysed their insights to determine whether they are the main drivers in shaping dynamic, high-performing schools capable of preparing students for an AI-driven future. The study also outlines the following research questions:

1. What are school leaders' views on redefining leadership for AI-driven education?
2. How are school leaders modifying their leadership styles for AI education?

2. Literature Review

2.1 Implications of AI for School Leadership

AI integration in educational settings can transform administrative processes, improve teaching and learning experiences, and reshape decision-making paradigms. From automating routine tasks to offering personalised learning experiences, AI is set to fundamentally change how educational institutions operate and fulfil their core missions (Sposato, 2025). Educational leaders must be proactive and intentional to maximise AI's educational advantages and effectively manage its challenges. They need to understand AI's core concepts and processes,

and how it can be utilised in education. Additionally, they must recognise AI's societal and ethical implications within education. Making informed and responsible decisions regarding AI systems and data, including their use, assessment, and ongoing improvement, is vital. Furthermore, fostering a culture that promotes collaboration between humans and AI, while emphasising the importance of understanding the ethical and societal impacts of education, is essential (Langeveldt, 2024).

Although the literature on the emerging impact of AI on educational leadership is limited, school leaders are working to understand how to integrate AI coherently into their schools. They recognise the potential of this technology but are also aware of the risks it might pose to teaching and learning processes. Introducing new technologies into schools requires school leaders to continually adapt and improve their technological knowledge and skills to stay ahead of the AI curve (Fullan et al., 2024). Limited understanding of AI integration among school leaders overseeing this process may hinder the effective and efficient implementation of AI technology, potentially preventing organisations from fully realising its benefits. Expert AI knowledge must include AI literacy, technological fluency, and a clear understanding of AI's capabilities, along with an awareness that AI platforms may worsen systemic biases and widen the digital divide if they are not implemented fairly and monitored properly (Slimi & Carballido, 2023; Cheng, 2023; Horton International, 2025).

School leaders must develop essential skills and competencies to address AI technologies' educational opportunities and challenges (Langeveldt, 2024; Horton International, 2025). To navigate this VUCA (volatile, uncertain, complex, ambiguous) environment, these competencies require digital, human-centric, and non-anthropocentric adaptive leadership. Digital leadership involves establishing a digitally enriched learning environment by integrating AI technologies and promoting data literacy alongside computational thinking skills. As AI manages data and operations, human skills such as emotional intelligence (EQ) become increasingly important. Leaders must build trust, motivate their teams, and attend to emotional and psychological needs that AI cannot satisfy (Langeveldt, 2024; Horton International, 2025). Applying critical thinking helps school leaders ensure AI-generated insights are used appropriately and encourages non-anthropocentric thinking. This includes evaluating data reliability, questioning AI-driven recommendations, and making balanced decisions considering potential biases or risks. Furthermore, non-anthropocentric thinking promotes re-evaluating human relationships with non-human entities and recognising their intrinsic value, independent of their utility to humans (Langeveldt, 2024; Horton International, 2025; Lee, 2025).

Suppose school leaders adopt an inclusive approach that empowers teachers to utilise AI for personalised and innovative teaching practices. In that case, teachers may be more inclined to see AI as an opportunity to enhance their autonomy in the classroom. To support this empowerment of teachers, school leaders must ensure they receive sufficient training on AI technologies, enabling them to recognise AI's potential benefits in automating administrative tasks, providing data-driven insights, and freeing up time for instructional leadership and student mentorship (Ghamrawi et al., 2023). Teachers can then experience firsthand how AI can support their decision-making processes, personalise learning experiences, and amplify their impact on student outcomes. These teachers are also exposed to successful implementations of AI in their schools, where AI is viewed as a tool that empowers teachers and fosters collaboration rather than diminishes their autonomy (Ghamrawi et al., 2023).

This rapid progress in AI technology within classrooms necessitates school leaders to be adaptable and dedicated to continuous learning. Keeping pace with AI innovations and embedding them into workflows requires an open mindset that embraces change. This can be

achieved through an inclusive leadership style where the school leader collaborates with all stakeholders, shares previously confidential resources, encourages teamwork, and fosters transparency across activities. Additionally, school leaders must adopt new strategies and techniques to address challenges in this VUCA environment, where adaptive leadership becomes vital (Horton International, 2025; Joy, 2020).

2.2 Adaptive Leadership in the Age of AI

Adaptive leadership is a leadership style that welcomes change, questions the status quo, and promotes experimentation and innovation. It aims for organisations to be adaptable in decision-making, allowing challenges to be managed effectively even in a changing environment (WDHB, 2025). Adaptive leadership identifies two types of problems: technical and adaptive. With technical problems, a suitable, pre-existing response is already available, and one or more reputable experts are brought in to resolve the issue. Conversely, no trained experts are available for adaptive problems, and no established rules or procedures exist. Often, these problems are vaguely defined, and technical solutions are lacking. In such cases, the expertise of an adaptive leader is especially valuable. This leader helps define the problem and then mobilises colleagues to develop possible solutions (Wale, 2025).

The four fundamental principles of adaptive leadership are emotional intelligence, organisational justice, development, and character. An adaptive leader can foster trust and build meaningful relationships with others. Another key aspect of adaptive leadership is creating a culture of honesty that promotes organisational justice (Wale, 2025). Adaptive leaders encourage their teams to share their views while ensuring they feel valued and respected. Adaptive leaders seek alternative approaches that can succeed if a strategy fails to deliver the expected results. These new methods help employees and organisations grow and develop. Adaptive leadership involves possessing a strong character, being transparent, and remaining inventive. While adaptive leaders may not always be correct, they earn the respect of those they work with and practise what they preach (Wale, 2025). This approach is characterised by resilience, flexibility, and emotional intelligence, vital for navigating this complex AI landscape. Leaders must now balance the efficiency of automation with their teams' creativity and empathy (Sanwo, 2024).

Artificial intelligence rapidly transforms the workplace, offering exciting opportunities and significant challenges for today’s leaders. As digital transformation speeds up, adaptive leadership in AI becomes crucial for managing these rapid changes. Research shows adaptability helps leaders guide their teams effectively through change, building confidence and stability even in uncertain times. As digital transformation continues, adaptive leadership remains vital for thriving amid disruption (Deep Impact, 2025). Leaders must balance adopting new technologies with a human-centred approach to navigate AI-driven changes successfully. McKinsey notes that adaptive leadership, characterised by empathy, flexibility, and a growth mindset, can steer organisations through these transitions (Deep Impact, 2025).

The rapid rise of artificial intelligence requires leaders to think differently, act swiftly, and stay resilient. Adaptive leadership develops qualities that accept uncertainty, foster innovation, balance stability with flexibility, and lead with empathy and inclusivity. In today’s unpredictable world, certainty is rare. Adaptive leaders succeed by embracing the unknown and supporting experimentation. They ask relevant questions instead of rushing to solutions, recognising that ambiguity demands curiosity and openness. Adaptive leaders create environments where creativity and trial are encouraged (Menon, 2024). A key principle of adaptive leadership is knowing when to uphold core values and when to let go of outdated ways of thinking. While stability is vital for maintaining trust and continuity, adaptive leaders understand that flexibility is equally important. They acknowledge the human element in

change management, leading with empathy and fostering inclusivity. They realise that team members will respond differently to change and prioritise open communication, support, and collaboration to help everyone progress. This people-centred approach builds resilience and trust within organisations (Menon, 2024). We cannot ignore that adaptive leadership cannot thrive in this AI-VUCA landscape if it does not embrace the philosophy of posthumanism and non-anthropocentric thinking.

2.3 Posthumanism and AI

The need to rethink education becomes even more urgent as advancements in science and technology move closer to the potential identification or creation of nonhuman agency, such as nonhuman semiotics and machine intelligence. Posthumanism involves re-evaluating the relationships between humans and non-humans, including animals and machines. It does not deny humanity but offers a transformative and socially constructive perspective (Yan et al., 2020). Posthumanism is a philosophy that questions and re-examines the concept of the human, challenging traditional human-centred views and exploring the evolving relationships between humans, technology, and the environment. It provides a critical perspective for analysing this relationship, encouraging us to reconsider our position in the world and our responsibilities towards it (Yan et al., 2020). Advocates of posthumanism, such as Darbellay, Ferreras, Bidwell, and Pernecky, suggest that a posthuman pedagogy involves exploring key elements like returning to holistic ancestral and indigenous ways of knowing; reimagining relationships among scholars, teachers, and learners; considering physical, material learning environments where knowledge is co-created; and embracing the shift towards post-disciplinary ideas of curriculum and knowledge creation (Blaikie et al., 2020).

As AI increasingly influences human reflection, the concept of post-humanism becomes essential in examining the boundary between humans and technology. These evolved versions of post-humanism aim to dismantle human boundaries central to anthropocentrism. As AI gains more autonomy and decision-making power, it should be regarded as a tool and a contributor to knowledge processes. The role of AI in society will extend beyond automation, highlighting new forms of interaction between humans and non-human intelligences (Rijos, 2024). As AI further integrates into human thought, the notion of post-humanism becomes crucial in analysing the technological boundary between humanity and technology. These modified forms of post-humanism seek to break down human boundaries central to anthropocentrism. They promote a broader definition of evolution that aligns with technological progress across a broader spectrum (Al-Omari & Al-Omari, 2025). Therefore, many scholars suggest that instead of viewing AI solely as a tool, we must also consider this entity, emerging from technology, as an object capable of reinventing the ontological and epistemological foundations of knowledge and being. This evolving discourse shows that the dialogue between technology, ethics, and philosophy becomes more vital than ever in navigating the complex terrain of consciousness and identity in an AI-driven world (Al-Omari & Al-Omari, 2025).

Artificial Intelligence should be understood as a technological tool and an emerging form of subjectivity that redefines our understanding of selfhood, cognition, and agency within a posthumanist context. These new structures challenge traditional notions of experience, cognition, and selfhood, especially in the digital age. The rise of the posthuman signifies a transformative shift, revealing new dimensions of agency beyond the conventional limits of flesh and language (Rijos, 2024). By integrating posthumanist principles, we can redefine the boundaries of machine intelligence, examining its technical capabilities and broader implications for ontology, agency, and political accountability in an era increasingly influenced by non-human entities (Yan et al., 2020).

3. Methodology

The views of school leadership (principals and deputy principals) regarding adaptive leadership in AI-driven education could influence how learners and teachers approach learning and how students are prepared for the AI era. For this reason, a qualitative approach was employed in this research to critically analyse school leaders' perspectives on redefining leadership for AI-driven education and how they prepare their learners and teachers to adapt to this dynamic environment. A qualitative method examined various interconnected interpretations from school leaders, recognising that each interpretation is seen differently (Johnson et al., 2020). Semi-structured interviews were conducted with public school leaders from Gauteng, South Africa. These schools were situated in rural areas, urban centres, and townships, enabling diverse perspectives from different demographic and socioeconomic backgrounds. Twelve school leaders participated in the interviews. The questions were designed based on the principles of AI leadership, adaptive leadership, and posthumanist philosophy. For this study, the participants were labelled P1 to P12. Data was analysed through content analysis using a posthumanist perspective. This analysis generated four main categories: driving change for AI education, addressing emerging challenges, leading innovation in AI learning, and applying adaptive leadership skills for AI education. The findings are discussed under each of these main categories.

4. Findings and Discussions

4.1 Driving Change for AI Education

Responses showed that school leaders' worldviews about the AI era influenced their attitudes towards fostering change for AI-driven education. Most leaders confirmed they welcomed change in schools and recognised the importance of implementing AI technologies. They have acknowledged their role and responsibility in leading change for AI learning and are not reliant on the Department of Education. They believe they need to lead change for AI-driven education to equip learners with the skills necessary for the future world of work.

> *"Our school definitely bought into this whole AI revolution. We have digital technology, and we even started with drone lessons. So, as a public school, we do get the funding"* (P1).

> *"So, as a principal, I must be in front and do much research. So, you may see what is happening outside the school, and what works for you at your school. From then on, you need to let the teachers participate. What is going on outside this school environment? You cannot only use the Department; you must go beyond that and ensure you bring it back to school"* (P5).

> *"I will explain it by saying that I will be concentrating on the future. What is important for learners is to be able to go into the world and be able to do either further studies or do some work, therefore you must be able to look to the future and make some alterations to your school program as well"* (P11).

While school leaders' enthusiasm for driving change towards future-focused learning is reflected in their views on planning to adapt and mobilise change to introduce new developments in AI-driven education, their perspectives from P3 and P10 suggest a reluctance to promote such change actively. There is concern that implementing AI-driven education may threaten the school's identity. This may be seen as a fear of change and an unwillingness to adopt new developments or acquire new skills necessary for implementing change. P10's response could be interpreted as a lack of adaptive leadership and change management skills. However, these views may also stem from a lack of knowledge and professional development

regarding innovative classroom practices and the importance of redefining school leadership for a dynamic VUCA world.

> *"I do not agree that you must transform your school. You still must keep the school's identity"* (P3).

> *"Maybe it is a new approach. With the old curriculum, the approach placed much emphasis on repetition. What they want to do is look at it as an outcome-based approach. I disagree with that, especially at the primary school level. I understand what they mean by futuristic learning, but I can honestly say it does not work in my class"* (P10).

As AI continues to evolve, its integration into leadership practices transforms the workplace, decision-making processes, and leaders' roles. Effective leadership today extends beyond traditional skills like communication and strategic thinking; it now involves navigating a complex, AI-driven environment with adaptability, ethical awareness, and a forward-looking vision (Martins, 2024). However, this conflicting perspective among school leaders highlights the need for a comprehensive understanding of how AI can be effectively utilised in school leadership. Such understanding is crucial for maximising organisational performance, addressing ethical concerns, and ensuring fair access to AI-enhanced educational experiences. Educational leaders must steer through a complex landscape of technological possibilities while considering the broader implications of AI adoption on issues such as privacy, data security, and the changing nature of work in educational settings (Sposato, 2025).

Leading schools in this VUCA environment requires more than just recognising one's role and responsibilities; it demands a bias for action. School leaders must be capable of making decisions despite incomplete information, with a limited understanding of the complexity and interconnectedness of those decisions, and without relying solely on experience, as such decisions are unprecedented. Leaders need to accept that they operate in an imperfect world and choose the best course of action for their project, team, and organisation, weighing between action and inaction (Bennett, 2023). Additionally, to foster change in AI education, school leaders must recognise that as posthuman pedagogy interweaves with posthuman thinking, the non-human component becomes inevitable, often involving a redefinition of the role of technology. AI's role has blurred the lines between the material and virtual realms. AI technology is not just a tool for posthuman pedagogy but a significant non-human actor in learning. It functions as a reciprocal agent in collaborative tasks, demonstrating its agency through how it structures or constrains interactions (Yan et al., 2020).

4.2 Dealing with Emerging Challenges

Mobilising people to address tough challenges and succeed also requires the ability to manage many difficulties. The interviews revealed that school leaders must invest time, money, and effort to redefine their leadership approaches for future-focused learning. This redefinition involves developing critical thinking and problem-solving skills to tackle emerging challenges. The main issues identified were adaptability, lack of resources and training, the widespread use of AI technologies, and the need for fit-for-purpose technologies in AI education. Other emerging problems included overreliance on AI, ethical considerations and implications, limited guidance on implementing AI, and the absence of policies to support and guide leaders through this uncharted territory. It is also important to ensure that AI complements rather than replaces essential human elements of teaching, such as empathy, cultural awareness, and personal interaction.

> *"Recently, AI education has become big, and everybody talks about it. I believe you need to adapt daily. Look at, for instance, your code of conduct and adapt it according to how the children change and how the environment they live in changes. You must adapt and make it*

part of your school and daily classes. We also do not have the necessary resources or skills for AI learning. There are many challenges." (P7).

"AI is not only about new technology devices but also includes skills to use these different types of technology in teaching and learning. Many school leaders and teachers do not have the expertise or skills to implement AI technology in the classroom. As school leaders, we are also concerned that teachers will lose their human creativity and rely too much on AI technology. I am unaware of how many other challenges we must deal with" (P9).

"There is a lack of guidelines and policies from the Department of Education. We [school leaders] do not have the know-how to implement AI technology effectively. Then, there is the question of ethical considerations when using AI. We have no proper policies in place" (P12).

Fullan et al (2024) support school leaders' views on managing emerging AI challenges in schools by confirming that AI inherently presents challenges and limitations for teaching and learning. A significant concern is that over-reliance on AI tools can lead to dependence and hinder teachers' and students' creativity, original thinking, and imagination (Fullan et al, 2024). Literature further confirms that school leaders encounter many obstacles when integrating AI technology into the learning environment. Keeping pace with the rapid development of AI may be daunting. The lack of exposure to AI technology and knowledge may discourage school leaders from adopting and implementing AI or becoming agents of change. School leaders must remain vigilant regarding the ethical use of AI to prevent data manipulation and misuse, including ensuring age-appropriate AI use and providing adequate training for teachers on the ethical aspects of AI in education (Luis, 2024; Metwali, 2025).

Investments are necessary to bridge the digital divide and ensure fair access to AI-driven technologies across educational systems. AI often requires substantial financial investment in network infrastructure, software, and hardware. School administrators must manage budget constraints and establish the appropriate technological infrastructure for AI adoption. Many teachers lack the skills and training to incorporate AI tools into teaching and learning effectively. School leaders must offer comprehensive professional development opportunities to address this, often requiring considerable time and resources (Luis, 2024; Metwali, 2025). There are no foundational policies to guide school leaders in AI integration within education. Such policies should facilitate the formation of expert AI task forces comprising teachers, students, community members, and policymakers, promote AI literacy, support professional development for teachers and leaders in AI integration, and fund research to advance AI in education (World Economic Forum, 2024).

Viewing these challenges posed by AI integration into schools through a posthuman lens requires re-evaluating the teacher's role in the classroom. In a posthumanist classroom, the teacher is neither a guide, an instructor, a facilitator, a socialiser, or protector. School leaders must advocate for "flipping" the classroom as a posthumanist approach to education, but emphasise that the teacher-learner relationships must be recalibrated. Therefore, they are neither hierarchical nor potentially oppressive, allowing pedagogy to be viewed as a co-created journey of discovery rather than merely content delivery (Blaikie et al., 2020). Posthumanism challenges human teachers to use AI in classrooms that align with pedagogical goals and ethical standards. This approach ensures that AI complements rather than replaces essential human elements of teaching, such as empathy, cultural awareness, and personal interaction (Luis, 2024).

4.3 Leading Innovation for AI Learning

Futuristic learning in schools highlights innovative classroom designs to encourage student collaboration and creativity. However, school leaders must spearhead innovation within their institutions. Most school leaders are keen to promote innovation in the classroom by engaging the community and key stakeholders in education, collaborating with neighbouring schools, and seeking funding with support from the Department of Education. Some adopt a responsive leadership style, proactively ensuring innovation through community involvement, funding strategies, strategic planning, and problem-solving. Nonetheless, there is a perception that school leaders need to take greater initiative to foster a culture of creativity and experimentation within schools. Implementing innovative practices for AI-driven education is not a systematically planned process. Strategic planning for AI-enhanced education, integrated with whole-school development, remains lacking. Strategic goals are absent but should be communicated to all stakeholders with transparency and simplicity to convert complex information into straightforward and actionable messages.

> *"Especially in rural areas, our schools are integral to society. So, you must have a working relationship with the community. We have worked very closely with even the mayor and the town council."*
>
> *"You need to get technology into a class. If there is no money for that, you need to go out and find resources to do that. Moreover, I think that is a big problem for me. It costs money, and the Department will not give it to you"* (P10).
>
> *"What we also did, for instance, when we started with this, is we went to our community library, and they put in four computers to start, and learners could access digital data from there. So, look at your community if you think wider than just your school grounds"* (P6).
>
> *"What we did when we started with coding, we started by doing it and with the sort of games that they had a block that started coding with that before we went into robotics as a unit"* (P4).

Although school leaders recognise the importance of ongoing innovation to remain competitive in the digital economy, they must foster experimentation and risk-taking among their teams. School leaders require a clear and compelling vision for the future of their institutions, inspiring stakeholders and guiding strategic decisions (Muncey, 2025). This vision should be articulated and translated into strategic objectives. Leaders can coordinate efforts, promote innovation, and adapt to change by presenting a visionary direction. Introducing innovative practices for future-focused learning should be a carefully planned process. Strategic planning must be carried out and integrated with whole-school development. These strategic objectives should be communicated to all stakeholders with transparency and clarity, simplifying complex information into straightforward and actionable messages (Muncey, 2025).

School leaders' responses show that to lead innovation in AI learning, school leaders must have the skills and competencies to perform their roles and functions effectively. Besides possessing technical abilities such as data literacy and computational thinking, they must also have cognitive skills like creative and critical thinking, problem-solving, and decision-making to analyse information, generate solutions, and evaluate alternatives related to AI learning (Langeveldt, 2024). Interpersonal skills such as communication, collaboration, negotiation, and conflict resolution will enable school leaders to interact with teachers, learners, and community members, build relationships with key stakeholders, and use charisma to influence outcomes. Simultaneously, intrapersonal skills such as self-awareness, self-regulation,

self-motivation, and resilience will enable school leaders to pursue AI learning with determination, even when faced with challenges (Langeveldt, 2024).

Moreover, school leaders need a posthuman pedagogy perspective to foster innovation in AI learning. This new posthuman pedagogy focuses on human-technology and human-nature relationships. The human-technology relationship involves viewing technology as a mediating tool and as something that jointly shapes learning. The human-nature relationship is also integral to posthuman pedagogy. Examining these human-nature relationships is crucial for understanding knowledge systems across different cultures (Yan et al., 2020).

4.4 Applying Adaptive Leadership Skills for AI Education

As AI continues to develop and become part of education, school leaders must understand how to adapt and optimise these new tools. Responses indicate that school leaders lack strategies and considerations for effectively managing change in AI-driven education. Participants mentioned they do not possess the skills to gain the support of all stakeholders for AI adoption. They also feel unprepared to communicate AI's benefits and to address any concerns or resistance. Building trust and understanding among stakeholders for successful AI implementation remains a challenge for school leaders. Most school leaders are unable to create a culture of innovation in their schools that encourages experimentation with AI tools, as they lack the adaptive leadership skills of empathy, transparency, and clear communication.

> *"I want to drive change in my school for AI education, but I believe that most school leaders, including myself, are not trained and just do not have the leadership skills to drive this change"* (P5).

> *"What is most difficult is to get buy-in from educators and other stakeholders. I cannot do this alone. We all have to change and adapt to doing things differently if we want to implement AI education in our schools. Leadership is important, but we as school leaders do not have this kind of leadership"* (P8).

> *"I am resistant because I am not sure AI is right for schools. I have my concerns, and I am certain teachers and community members have concerns, too"* (P3).

> *"We hear about digital leadership and other leadership that we must have, but we do not have the training. We are asked to do new things and lead differently, but we are unsure how to. There is a lack of transparency, and nobody communicates this to us"* (P12).

The above responses reveal that school leaders require a different type of leadership to mobilise and navigate AI education. Adaptive leadership represents a dynamic and responsive approach, committed to mobilising collective action, embracing uncertainty, and fostering innovation. As digital transformation accelerates, adaptive leadership becomes the cornerstone for thriving amid disruption. Adaptability empowers school leaders to guide their teachers, learners, and other stakeholders effectively through change, instilling confidence and stability even during uncertain times (Deep Impact 2025). Literature shows that school leaders must use specific adaptive leadership strategies to drive AI education. Buy-in from stakeholders is fundamental. To get buy-in, school leaders communicate the benefits of AI effectively and address any concerns or resistance. Building stakeholder trust and understanding is key to successful AI implementation (Liu, 2024). Effective use of AI tools requires specialised knowledge and skills. Invest in teacher training and development to ensure they can use AI tools to their full potential. Provide ongoing learning opportunities to keep up with rapid advancements in AI technologies. Foster a culture of innovation where experimentation with AI tools is encouraged. Create an environment that supports creative thinking and the exploration of new ideas. Recognise and reward employees who contribute innovative

solutions involving AI. Once AI tools are implemented, monitoring and evaluating their results are essential (Liu, 2024).

Joy (2020) contends that effectively responding to this VUCA-AI landscape also requires the 4A's of adaptive leadership: anticipation, articulation, adaptation, and accountability. Anticipation enables school leaders to foresee AI's future needs, trends, and possibilities. Articulation pertains to how school leaders communicate these future needs to foster understanding and gain stakeholder support. Adaptation highlights continuous learning and redefinition, encouraging leaders to access role players' mental, emotional, and spiritual dimensions (Joy, 2020). School leaders must also adapt to the shift from anthropocentrism to non-anthropocentrism, which signifies a fundamental change in how we consider ethics and the natural world. While anthropocentrism prioritises human needs and interests, non-anthropocentrism considers the value and interests of non-human entities. Although adaptive leadership supports experimentation with AI tools, it can also foster a culture of non-anthropocentrism that offers alternatives to student-centred pedagogy based on individualism. Instead, it promotes focusing on the interconnectedness of various entities within learning (Lee, 2025; Yan et al, 2020).

4.5 Implications of the Findings

School leaders must transition from traditional administrative roles to strategic change agents who can bridge the gap between pedagogy and technology. This shift might necessitate restructuring leadership development programmes to include AI literacy and digital transformation skills.

The focus on continuous learning highlights a systematic need for ongoing teacher training. Institutions may need to allocate additional resources, time, funding, and support for upskilling educators in AI integration, digital tools, and ethical considerations. Prioritising inclusivity and equitable access to AI-enhanced education suggests that schools must tackle digital divides. This could result in policy changes at district or national levels to ensure all students have access to devices, connectivity, and AI-powered learning tools.

Fostering a culture of innovation and adaptability involves shifting school culture from risk-averse to experimentation-friendly. This may influence hiring practices, performance evaluation, and measuring success in educational settings. Promoting ethical AI use underscores the need for clear guidelines and governance frameworks. Schools might need to develop or adopt structures to ensure transparency, data privacy, and fairness in AI applications. Integrating AI to address diverse student needs suggests a move towards more personalised, data-driven instruction. This could transform curriculum design, assessment methods, and student support services. The call for actionable, context-specific plans indicates that strategic foresight and scenario planning will become essential leadership functions. Leaders may need to adopt agile planning models to stay responsive to rapid technological change.

5. Recommendations and Conclusion

Adaptive leadership in the AI era involves understanding AI's capabilities and limitations, evaluating organisational needs, and fostering a culture of innovation and ongoing learning. School leaders can successfully manage change by effectively handling the human aspect of AI, investing in training and development, and promoting ethical AI use. Embrace these strategies to guide your organisation through the transformative process of AI adoption and create a future where humans and AI systems work together harmoniously, promoting sustainable growth and positive impact (Liu, 2024).

To effectively navigate and succeed in this rapidly changing landscape, school leaders must redefine and adapt their leadership practices to meet the needs of future-focused learning. This involves integrating advanced technological tools and approaches into their educational strategies, fostering an environment that encourages innovation, creativity, and critical thinking. Leaders should nurture a culture of continuous learning and professional development among educators to ensure they possess the skills and knowledge necessary to teach in this new era (Kayyali, 2022; Nivetha, 2024).

Furthermore, school leaders must develop a clear and practical plan that addresses their schools' specific needs and challenges. This plan should emphasise the importance of equity and access to quality education for all students, regardless of their socioeconomic background. School leaders can create more personalised and engaging learning experiences that cater to their students' diverse needs by prioritising inclusivity and leveraging technology's potential.

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