Pak. j. life soc. Sci. (2026), 24(1): 343-352 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences
www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2026-24.1.0028

RESEARCH ARTICLE

School Leaders' Perceptions on the Potential of Using Artificial Intelligence (AI) In Leadership Practices: A Study of High Schools in The Kingdom of Saudi Arabia

Asma Ali Alatawi*

Kingdom of Saudi Arabia

ARTICLE INFO

Received: Feb 12, 2026

Accepted: Apr 20, 2026

Keywords

Artificial Intelligence
Decision-Making
High School Leadership
Principals
Saudi Arabia
Vision 2030

***Corresponding Author:**

AAlatawi1@outlook.com

ABSTRACT

Artificial Intelligence (AI) is reshaping educational systems worldwide, and the Kingdom of Saudi Arabia is no exception. In line with Saudi Vision 2030 and the National Strategy for Data and Artificial Intelligence (NSDAI), Saudi schools are increasingly expected to integrate AI into teaching, learning and leadership practices. In high school education, AI offers significant opportunities and challenges that extend directly to the practices of school leaders. A central aspect of school leadership is decision-making, and high school principals and vice-principals in Saudi Arabia are responsible for a complex landscape of choices that shape school governance, staff organization and students' academic trajectories at a critical stage before higher education. To deepen the understanding of AI as a decision-making tool among Saudi high school leaders, a qualitative survey was conducted across several public secondary schools in the north region of Saudi Arabia, of whom 30 responded (15% response rate). The survey assessed school leaders' familiarity and proficiency with AI and explored their perceptions of its potential applications in educational leadership. Findings show that Saudi high school leaders perceive AI as a valuable tool for enhancing efficiency in instructional planning, administrative workflows and data-informed decision-making. However, they also report substantial concerns about academic integrity, possible misuse of AI by students during preparation for national assessments such as the General Aptitude Test (Qudurat) and the Standardised Achievement Admission Test (Tahsili), ethical issues including algorithmic bias and data privacy, and limited personal familiarity with AI tools. While leaders recognise clear opportunities for AI to improve processes and support strategic decisions, they emphasise the need for structured professional development, stronger dissemination and school-level operationalisation of the Ministry of Education's existing Artificial Intelligence Guide for general education, and systemic support to ensure responsible integration.

INTRODUCTION

Artificial Intelligence (AI) is transforming the way schools are organised and led, and its influence on educational leadership is expanding rapidly (Adams and Thompson, 2025; Fullan et al., 2024; Tyson and Sauers, 2021). AI no longer plays a peripheral role but is becoming a central element of effective school leadership, particularly in systems undergoing large-scale digital reform. Dai et al. (2025) argue that school leaders are required to make complex decisions and that AI offers substantial value in tasks such as collecting, processing and analysing school data. AI further enables leaders to identify potential issues early, take timely action and support more informed decision-making through data (Fusarelli and Fusarelli, 2024).

In the Kingdom of Saudi Arabia, the adoption of AI in education is embedded within the broader framework of Saudi Vision 2030 and its associated National Strategy for Data and Artificial Intelligence (NSDAI) led by the Saudi Data and Artificial Intelligence Authority (SDAIA, 2020). These national policies explicitly position AI as a driver of human capability development and public sector transformation, including in the education sector. The Ministry of Education has accordingly

initiated several programmes to enhance digital infrastructure, teacher preparation and school leadership capacity. Within this landscape, high school leaders occupy a particularly sensitive position: they are responsible for guiding students through the final, high-stakes stage of public education, characterised by preparation for the General Aptitude Test (Qudurat) and the Standardised Achievement Admission Test (Tahsili), both of which are central to university admission in Saudi Arabia (Saudi Vision 2030, 2016).

School leaders' daily practices involve a wide spectrum of decisions, including rapid unplanned ones and more strategic decisions related to budgeting, staffing and curriculum coordination (Fullan et al., 2024). As AI becomes more deeply embedded in everyday professional life, school leaders are increasingly expected to understand, evaluate and deploy these tools. Nevertheless, using data to improve school practices remains challenging. Torres-Santos and Castulo (2025) point out that a major obstacle is the lack of digital competence, which limits leaders' ability to interpret data and make informed decisions. Additional barriers identified in the literature include insufficient knowledge of AI, costs, lack of standardisation across products, underdeveloped staff training and organisational resistance to change (Marrone et al., 2025; Tyson and Sauers, 2021; Zawacki-Richter et al., 2020).

It is essential that school leaders overcome these barriers if data is to be used effectively in their schools, because leadership plays a decisive role in shaping how data and technology are embraced at the institutional level. At the same time, it is important to situate AI within the broader dynamics of educational change. As Holmes et al. (2019) note, education is slow to change, and the integration of AI into school leadership must therefore be explicitly supported through training and policy (Marrone et al., 2025; Weng and Tang, 2014).

Despite the obstacles, the literature also highlights a number of promising applications of AI that can support and enhance school leadership. AI tools such as ChatGPT can help leaders anticipate trends, formulate goals and systematically monitor progress in data-informed strategies (Adams and Thompson, 2025; Karakose and Tülübas, 2024; Schildkamp et al., 2019). AI tools can enhance external communication, for example by drafting letters, invitations and reminders to parents and guardians (Adams and Thompson, 2025; Chiu, 2024), and can quickly generate surveys or questions to collect feedback from the school community. However, Fusarelli and Fusarelli (2024) stress that serious ethical issues must be addressed for AI to be integrated responsibly into school leadership. School leaders must understand how AI works in order to apply it fairly and ethically. Aldighrir (2024), writing in a context closely related to Saudi Arabia, emphasises that ethics in AI plays a substantial role in shaping how educational leaders make decisions, and shows that leaders with positive ethical attitudes toward AI tend to make more rational, reflective decisions.

Research on school leaders' decision-making spans a broad spectrum (Dai et al., 2025; Tyson and Sauers, 2021), including how data is used to support informed decisions and how it can help allocate resources to improve teaching and learning (Martin et al., 2023). In the Saudi context, where secondary schools operate under gender-segregated arrangements and where high school performance is tightly linked to national admission examinations, the use of AI as a decision-making tool warrants particular attention. While digital technologies have been part of the Saudi educational landscape for some time, AI adds new dimensions and merits fresh empirical investigation.

The aim of this study is to explore the potential of AI as a decision-making tool for high school leaders in the Kingdom of Saudi Arabia. School leaders are defined here as principals and vice-principals (assistant principals). Two research questions are formulated: (i) How do Saudi high school leaders perceive the potential applications of AI in leadership practices? (ii) What challenges and opportunities related to AI in leadership practices do Saudi high school leaders describe? This study aims to contribute new knowledge regarding how Saudi high school leaders perceive the professional use of AI in their practice, adding a Gulf and Middle Eastern perspective to an otherwise predominantly Western literature base.

MATERIALS AND METHODS

This study adopted a qualitative approach using a survey instrument (Cohen et al., 2017) designed for school leaders. As Cohen et al. (2017) note, surveys can be used not only for measurement or generalisation but also to capture local, institutional and small-scale factors that illustrate the

uniqueness of a situation. The purpose of the survey was to explore Saudi high school leaders' perceptions of AI as a tool for decision-making and to gather insights on their experiences and attitudes toward AI technologies.

Participants and setting

The study was conducted in the north region of Saudi Arabia. The survey was distributed to 60 high school leaders (principals and vice-principals) working in public general secondary schools. Both boys' and girls' schools were included, reflecting the gender-segregated nature of Saudi public education. Of the 60 school leaders surveyed, 30 responded, corresponding to a 15% response rate.

Of the 30 participants, 18 (60%) were principals and 12 (40%) were vice-principals. Seventeen participants (56.7%) worked in boys' high schools and 13 (43.3%) in girls' high schools. In terms of leadership experience, 9 participants (30%) reported less than 5 years in a leadership role, 14 (46.7%) reported between 5 and 10 years, and 7 (23.3%) reported more than 10 years. All participants held a bachelor's degree as their minimum qualification, with 11 (36.7%) also holding a master's degree in educational administration or a related field.

Instrument

The survey instrument was adopted from Reis-Andersson et al. (2025), who designed a 10-item survey to explore school leaders' perceptions of AI as a decision-making tool. The instrument consisted of five background items (gender; position as principal or vice-principal; school type as boys' or girls' high school; years of leadership experience; and highest academic qualification) and five open-ended items. The open-ended items reproduced the example questions reported by Reis-Andersson et al. (2025): (i) How would you define artificial intelligence (AI), and what do you consider to be the challenges and opportunities in using AI in education? (ii) Can you describe three key areas where you believe AI can serve as a tool to assist in decision-making regarding the school's organisation? (iii) Please provide examples of how AI can specifically support these decisions. Two additional items, formulated in line with the thematic scope of the original study, asked participants (iv) what ethical considerations they saw as most important when integrating AI into school leadership, and (v) how familiar they were with AI tools and in what ways they currently used them in their leadership practice. The instrument was translated into Arabic by the researcher and reviewed by two bilingual colleagues to ensure conceptual equivalence. Participants could respond in Arabic or English.

Data analysis

Data analysis followed reflexive thematic analysis (Braun and Clarke, 2006, 2021), guided by the six-phase framework of Braun and Clarke (2006). In the first phase, all 30 open-ended survey responses were read and reread and initial notes were recorded. In the second and third phases, the data were systematically organised, allowing for the generation of initial codes and the identification of potential themes. The school leaders' responses addressed a range of topics, including the benefits of AI in teaching and administration, concerns about AI and academic integrity, ethical considerations and the need for enhanced digital competence. In the fourth phase, these themes were refined and a clustering process was initiated. The fifth phase involved merging themes of similar nature, and in the sixth phase, the report was generated, including representative quotations that supported the identified themes. Responses originally provided in Arabic were translated into English by the researcher for reporting purposes; translation accuracy was verified by a second bilingual colleague.

Ethical considerations

The study adhered to general ethical guidelines for qualitative educational research (Cohen et al., 2017). Participation was voluntary, and all respondents were informed of the purpose of the study, their right to withdraw at any time without consequence and the confidentiality of their responses. No identifying information is presented in the results, and all quotations are anonymised.

RESULTS

This section outlines the results of the open-ended survey items in relation to the research questions. The responses were organised thematically into five themes: perceived benefits of AI in Saudi high

school education; concerns about AI and academic integrity; need for ethical considerations and digital competence; limited familiarity and implementation of AI; and challenges and support needed for AI integration.

Perceived benefits of AI in Saudi high school education

Many school leaders viewed AI as a tool for enhancing efficiency in both instructional and administrative tasks, such as lesson planning, budget management, timetabling and staff coordination. Twenty-two of the 30 participants (73.3%) explicitly referred to administrative efficiency as a primary benefit. For example, one principal stated:

"AI can help us collect different questions and answers and then support us in reaching a decision quickly, especially when we have short deadlines from the education office."

Another school leader noted:

"Many tasks that are currently handled manually could be automated, especially administrative decisions where we already have clear procedures."

Beyond administrative functions, AI was also perceived as a valuable pedagogical aid. Nineteen participants (63.3%) highlighted how AI can offer rapid access to information, support writing and reading practice for students preparing for Qudurat and Tahsili and serve as a flexible training tool. One vice-principal described AI as having "endless possibilities for both students and teachers," especially in relation to practice, feedback and revision. From a teaching perspective, AI was viewed as potentially time-saving, particularly in relation to lesson planning and the preparation of differentiated materials.

There was a general sense across responses that AI could enhance the efficiency of daily practices, improve accessibility to learning support and contribute to a more responsive learning environment aligned with the expectations of Vision 2030. These perspectives suggest that Saudi high school leaders recognise AI's potential not only to streamline tasks but also to expand the pedagogical toolkit available in their schools, provided appropriate safeguards are in place.

Concerns about AI and academic integrity

A common concern among the school leaders was the risk of students using AI to complete school assignments dishonestly, leading to difficulties in distinguishing between the student's own work and AI-generated content. Twenty-five of the 30 participants (83.3%) raised concerns about academic integrity, making it the most frequently mentioned issue. One principal from a boys' high school observed:

"Students need to understand how to use AI as a reference tool, not as a way to receive a finished assignment. If we do not teach them this, the purpose of learning is lost."

Participants also expressed worry about the challenges facing teachers in evaluating student work. As one vice-principal put it:

"It is becoming difficult for our teachers to see what the student has done and what AI has done, especially in written assignments in Arabic, English and the social sciences."

The risk of students relying too heavily on AI was linked to concerns about reduced learning outcomes and the possible erosion of the critical thinking and writing skills required for national examinations. One participant warned, "If misused, no real learning takes place," while another pointed directly to the risk of "cheating in homework and even in continuous assessment tasks." These concerns highlight the importance of ensuring that the Ministry of Education's existing Artificial Intelligence Guide for general education (Saudi Ministry of Education, 2024) is actively disseminated to school leaders and translated into school-level operational standards, so that academic integrity can be maintained in AI-supported learning environments.

Need for ethical considerations and digital competence

Ethical concerns were frequently mentioned, particularly regarding source criticism, potential biases in AI outputs, data privacy of students and staff and the ownership of AI-generated content. A principal explained:

"Ethical considerations here are not only about cheating; they are also about copyright: who owns the content, how it can be reused, and how students' personal data is protected when they interact with these tools."

School leaders also emphasised the importance of ensuring that both students and staff understand how to use AI responsibly. Twenty-one participants (70%) explicitly called for structured professional development. One school leader stated:

"It is necessary to provide extensive professional development so that staff in high schools can understand AI and its possibilities, not only its risks."

Another added, "Support is needed from the regional department of education, centrally, to achieve some level of equality between schools." One principal illustrated concerns about information quality by remarking:

"The advantage is that AI can retrieve information from many different sources; the disadvantage is that the reliability of those sources is not always clear, especially for our students."

The responses suggest that both students and teachers need to strengthen their digital competence and ethical awareness when using AI, particularly in relation to evaluating information and using the technology responsibly in an educational context that is also culturally and religiously situated.

Limited familiarity and implementation of AI

Several school leaders admitted having limited experience with or knowledge of AI tools. Thirteen participants (43.3%) reported that they had not yet integrated AI into their leadership practices or school processes in any systematic way. Representative comments included:

"I have not prioritised taking the time to learn about AI; the daily workload does not leave much room for it."

"I am probably sceptical of AI because it is new and the rules are not yet clear in our system."

"I have no practical experience with AI in leadership today, although I read about it."

Other school leaders recognised AI's potential in areas such as timetabling, data analysis and decision support, but had not yet explored applications in depth. One vice-principal summarised this tension by noting that the daily workload did not leave room to prioritise learning about AI, reflecting a broader sense of uncertainty surrounding the topic. This limited familiarity appeared to hinder meaningful integration of AI in school environments and highlighted the need for further support and capacity-building at both school and regional levels.

Challenges and support needed for AI integration

Several school leaders pointed out that for AI to be effectively integrated into Saudi high schools, support from central authorities, notably the Ministry of Education and the regional Departments of Education, is essential. They acknowledged that AI has the potential to significantly impact the education system, but emphasised that substantial professional training, financial resources and policy clarity are needed for school leaders and teachers to harness this potential. One principal noted:

"AI could have a significant impact on our education system, both positively and negatively. It depends on how well we are prepared as leaders."

The reported challenges included difficulties for teachers in distinguishing between student work and AI-generated work; the risk of cheating in written assignments; difficulties in identifying where AI can be used appropriately in leadership; and the challenge of finding the time to prioritise learning about AI within already demanding schedules. The reported opportunities included using AI as a training tool for students, teachers and leaders; the ability to quickly obtain support by asking questions; time savings in administrative workflows; and support for lesson planning efficiency.

One school leader pointed out:

"For school leaders in our context, it is still quite limited. We need clear Saudi-specific guidance, not just general advice from abroad, to understand where AI fits in our schools."

The responses reflect a tension between the perceived benefits of AI and the current lack of preparedness at the school-leader level. Although the Ministry of Education has issued an Artificial Intelligence Guide for general education (Saudi Ministry of Education, 2024), the findings suggest that what is needed now is stronger dissemination of this guidance to school leaders, protected time for professional learning and external support to translate national strategy into successful implementation at the school level. A summary of the five themes is provided in Table 1.

Table 1. Five key themes on AI in Saudi high school leadership

Theme	Description
Perceived benefits of AI in Saudi high school education	AI is seen as a tool to enhance efficiency in instruction (lesson planning, differentiated support, Qudurat/Tahsili preparation) and administrative tasks (timetabling, budgeting, staff coordination).
Concerns about AI and academic integrity	Leaders are concerned about AI's potential to facilitate cheating in assignments and to undermine genuine learning outcomes critical for national admission tests.
Need for ethical considerations and digital competence	Issues such as bias in AI outputs, data privacy, copyright and information reliability highlight the need for ethical guidance and stronger digital competence among both staff and students.
Limited familiarity and implementation of AI	Many school leaders acknowledge limited personal experience with AI and have not yet integrated it systematically into leadership practice.
Challenges and support needed for AI integration	Leaders call for structured professional development, stronger dissemination and school-level operationalisation of the Ministry of Education's existing AI Guide, and dedicated time and resources to enable responsible integration.

In summary, the study reveals five key themes regarding AI in Saudi high school leadership. First, school leaders perceive AI as a valuable tool for enhancing efficiency in instructional and administrative tasks, although concerns about academic integrity and the risk of cheating are particularly strong in the context of national high-stakes assessments. Ethical considerations, including bias in AI outputs, data privacy and ownership of AI-generated content, reinforce the need for digital competence and professional development among staff. Many school leaders acknowledge their limited familiarity with AI and the challenges of integrating it into leadership practice. Overall, while AI is seen as offering important opportunities for improved efficiency and decision-making, systemic support, training and resources are required for effective and ethical implementation in Saudi high schools.

DISCUSSION

The aim of this study was to explore the potential of AI as a decision-making tool for high school leaders in the Kingdom of Saudi Arabia. Two research questions guided the study: how do Saudi high school leaders perceive the potential applications of AI in leadership practices; and what challenges and opportunities related to AI in leadership practices do Saudi high school leaders describe.

Perceived applications of AI in high school leadership

The first research question is primarily addressed by the first, third and fourth themes identified in the results. Saudi high school leaders in this study perceive clear potential for AI in areas such as improving efficiency in teaching, lesson planning and administrative tasks, in line with Dai et al. (2025). They also note AI's capacity to streamline operations and provide quick, efficient solutions, which illustrates how AI may act as an enabler of more effective leadership practice. At the same time, leaders recognise the importance of understanding the ethical implications of AI, as highlighted by Martin et al. (2023), and the need to strengthen digital competence in order to integrate AI responsibly.

Many leaders in this study view AI as a support for tasks such as lesson planning, budget management, staff coordination and communication with parents. AI is seen to support daily

responsibilities that demand both immediate responses and strategic planning – areas that reflect the broader leadership responsibilities described by Fullan et al. (2024). These findings support earlier research indicating that AI is no longer peripheral but is becoming an integral component of effective educational leadership (Adams and Thompson, 2025; Tyson and Sauers, 2021). The Saudi context adds a specific dimension: school leaders relate AI not only to generic leadership efficiency but also to preparation for nationally mandated assessments such as Qudurat and Tahsili, which carry very high stakes for students and schools alike.

Leaders noted that AI could help streamline repetitive or time-consuming tasks, freeing time for school improvement efforts. These perspectives align with Karakose and Tülübas (2024), who emphasise AI's potential to reduce administrative workload. The ability to rapidly generate ideas, structure plans and provide instant feedback supports more dynamic and informed leadership practices, outcomes also highlighted by Schildkamp et al. (2019). AI tools such as ChatGPT were viewed as useful for generating content, drafting communications with guardians and providing instant information, a view consistent with Chiu (2024), who highlights AI's communication-enhancing potential. Taken together, these findings indicate a growing recognition among Saudi high school leaders that AI can meaningfully contribute to both educational quality and operational efficiency.

Ethical implications are particularly salient in the Saudi context. Some participants raised concerns about AI-generated content, bias and the protection of students' personal data. These concerns are consistent with Fusarelli and Fusarelli (2024) and Aldighrir (2024), both of whom stress the importance of ethical decision-making frameworks in AI use. The work of Aldighrir (2024) on AI ethics in school administration within a closely comparable Saudi context is particularly relevant, showing that leaders with more reflective ethical attitudes toward AI tend to make more rational decisions. Saudi high school leaders must therefore be able to critically assess how AI tools are used in instruction and administration to support equitable outcomes for students from diverse regional and socioeconomic backgrounds.

Challenges and opportunities related to AI

The second research question is primarily addressed by the second, third, fourth and fifth themes. According to the Saudi high school leaders in this study, there is a significant risk of cheating and a corresponding difficulty in ensuring academic integrity, echoing concerns raised by Fullan et al. (2024). This highlights the ethical issues that school leaders perceive when considering AI in leadership decisions (Tyson and Sauers, 2021). AI may complicate decision-making, particularly around assessment, grading and the evaluation of student learning in a system where scores carry high external weight.

A major challenge for school leaders is limited familiarity and practical experience with AI tools. This reveals a gap between AI's potential and its current application in Saudi high school leadership, consistent with the international pattern described by Holmes et al. (2019), who argue that educational systems are slow to adapt to change. In this study, 43.3% of participants reported no systematic use of AI in their leadership work, and several explicitly attributed this to time pressure and to limited school-level familiarity with the AI guidance already issued for general education, rather than to its absence. Respondents highlighted the importance of professional development to build digital competence, findings that align with Torres-Santos and Castulo (2025) and Zawacki-Richter et al. (2020), who emphasise the necessity of equipping leaders with foundational digital skills for successful AI implementation.

One of the most consistent concerns in the findings was academic integrity. School leaders expressed unease about the use of AI by students to complete assignments in ways that obscure genuine learning, which complicates teachers' ability to assess student achievement accurately. This issue is especially pressing in the Saudi high school context, where continuous assessment scores, alongside the Qudurat and Tahsili examinations, directly influence university admission. Several respondents discussed how AI-generated work blurs the line between student input and machine assistance, aligning with concerns raised by Fusarelli and Fusarelli (2024) and Tyson and Sauers (2021) about the need for school leaders to establish ethical standards and ensure transparency in AI use.

The study also underscores a strong need for external and systemic support. Several school leaders noted that AI integration will only succeed with clearer operationalisation of existing national strategy, protected professional time and support from regional Departments of Education and the national Ministry. In this respect, it is important to acknowledge that the Ministry of Education has already issued an Artificial Intelligence Guide for general education (Saudi Ministry of Education, 2024), complementing the national-level work of SDAIA under Vision 2030. The findings nevertheless reinforce Weng and Tang (2014) and Marrone et al. (2025), who argue that school-level initiatives must be supported by sustained national or regional efforts, including funding, capacity-building and systematic dissemination of policy. In the Saudi context, this suggests that the priority is no longer the production of AI guidelines but the building of an explicit bridge between high-level AI strategy — including the MoE Guide — and school-level implementation in the hands of principals and vice-principals.

Despite these challenges, Saudi high school leaders acknowledged a number of opportunities, including enhanced efficiency, improved communication with families and support for data-informed decision-making. These opportunities are consistent with Adams and Thompson (2025) and Martin et al. (2023), who discuss AI's capacity to improve leadership outcomes when used strategically and ethically. Overall, to realise AI's potential as a decision-making tool, it is essential to understand what support Saudi high school leaders need to adopt it effectively. A lack of support and resources may constrain the use of AI's potential in leadership decision-making, and leaders' unfamiliarity with AI remains a major obstacle, underscoring the need for structured professional training and resources, aligned with national digital transformation priorities, to overcome this challenge.

Limitations and future research

Several limitations should be acknowledged. First, the sample is relatively small (N = 30) and geographically limited to one region in the Kingdom, which constrains generalisability. Second, the 15% response rate, although comparable to similar studies in the field (e.g., Reis-Andersson et al., 2025), may introduce self-selection bias, as respondents are likely those with greater interest in AI. Third, the study relies on self-reported perceptions rather than on observation of actual AI use in leadership practice. Nevertheless, the analysis of open-ended responses has provided a rich picture of how Saudi high school leaders perceive the potential of using AI in leadership and learning practices. Future research could include semi-structured interviews with school leaders to deepen understanding of the potential and constraints of AI in leadership practice, as well as focus group interviews to explore how leaders view AI's role in supporting teacher and student learning. Larger, multi-region quantitative studies could also investigate the relationships between leaders' digital competence, ethical attitudes and AI adoption, and how these relate to school performance indicators in the Saudi context.

CONCLUSIONS

This study aimed to explore the potential of AI as a decision-making tool for high school leaders in the Kingdom of Saudi Arabia. The findings indicate that Saudi high school leaders perceive AI as a valuable tool for enhancing efficiency in instruction and administration and for streamlining decision-making processes. In response to the first research question, school leaders acknowledged AI's potential to improve both administrative and pedagogical efficiency; AI tools were seen as useful in optimising routine tasks and providing real-time insights for more informed decision-making, particularly in a system where timely data-driven responses are increasingly expected by regional and national authorities. In response to the second research question, the study brought to light the challenges school leaders face, especially regarding academic integrity, limited familiarity with AI tools and the need for further professional training to effectively integrate AI into leadership practices. These challenges are amplified in the Saudi high school context by the high-stakes nature of national examinations and by the relatively rapid pace of policy change surrounding digital transformation.

The study also underscored the importance of ethical considerations, including fairness, transparency, accountability and data privacy, in AI's application within Saudi educational settings. School leaders identified a critical need for digital competence, not only among teachers but also for themselves as leaders, to responsibly navigate the growing presence of AI in schools. The theoretical

significance of this research lies in extending the emerging literature on AI and school leadership into the Saudi high school context, complementing prior work in Swedish, Australian and other settings. By exploring Saudi leaders' perceptions of AI's applications, together with the associated challenges and opportunities, this study provides insights into how AI can transform educational leadership in a Gulf context undergoing large-scale reform. The educational significance is reflected in the findings' emphasis on data-informed decision-making and on the ethical dimensions of academic integrity, bias and data privacy. Addressing these challenges will be essential for ensuring that AI can be used effectively and responsibly in the Saudi K–12 systems, in line with the aspirations of Vision 2030 and the NSDAI.

Authors' Contribution

The author conceived and designed the study, developed and administered the survey instrument, analyzed the data, and wrote and approved the final manuscript.

Acknowledgements

The author thanks the school leaders who generously participated in this study, and the colleagues who reviewed the translation of the survey instrument. Generative AI tools were used during the writing process to support language editing and to improve clarity; all content, analysis and conclusions remain the sole responsibility of the author.

REFERENCES

Adams D and P Thompson, 2025. Transforming school leadership with artificial intelligence: applications, implications, and future directions. Leadership and Policy in Schools, 24(1): 77–89.

Aldighrir WM, 2024. Impact of AI ethics on school administrators' decision-making: the role of sustainable leadership behaviors and diversity management skills. Current Psychology, 43: 32451–32469.

Braun V and V Clarke, 2006. Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2): 77–101.

Braun V and V Clarke, 2021. Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. Counselling and Psychotherapy Research, 21(1): 37–47.

Chiu TKF, 2024. The impact of Generative AI (GenAI) on practices, policies and research direction in education: a case of ChatGPT and Midjourney. Interactive Learning Environments, 32(10): 6187–6203.

Cohen L, L Manion and K Morrison, 2017. Research methods in education. 8th edition. Routledge, London, United Kingdom.

Dai R, MKE Thomas and S Rawolle, 2025. The roles of AI and educational leaders in AI-assisted administrative decision-making: a proposed framework for symbiotic collaboration. The Australian Educational Researcher, 52: 1471–1487.

Fullan M, C Azorín, A Harris and M Jones, 2024. Artificial intelligence and school leadership: challenges, opportunities and implications. School Leadership and Management, 44(4): 339–346.

Fusarelli BC and LD Fusarelli, 2024. Leadership for the future: enhancing principal preparation through standards and innovation. Education Sciences, 14(12): 1403.

Holmes W, M Bialik and C Fadel, 2019. Artificial intelligence in education: promises and implications for teaching and learning. Center for Curriculum Redesign, Boston, USA.

Karakose T and T Tülübas, 2024. School leadership and management in the age of Artificial Intelligence (AI): recent developments and future prospects. Educational Process: International Journal, 13(1): 7–14.

Marrone R, S Fowler, A Barthakur, S Dawson, G Siemens and C Singh, 2025. Perceptions and perspectives of Australian school leaders on the integration of artificial intelligence in schools. School Leadership and Management, 45(1): 30–52.

Martin F, M Zhuang and D Schaefer, 2023. Systematic review of research on artificial intelligence in K-12 education (2017–2022). Computers and Education: Artificial Intelligence, 6: 100195.

Reis-Andersson J, M Håkansson Lindqvist and J Jaldemark, 2025. School leaders' perceptions on the potential of using Artificial Intelligence (AI) in leadership practices. In: Proceedings of the

24th European Conference on e-Learning (ECEL 2025), Academic Conferences International, pp. 338–344.

Saudi Data and Artificial Intelligence Authority (SDAIA), 2020. National Strategy for Data and Artificial Intelligence (NSDAI): realizing our best tomorrow. SDAIA, Riyadh, Kingdom of Saudi Arabia.

Saudi Ministry of Education, 2024. Artificial Intelligence Guide for general education [Dalīl al-Dhakāʾ al-Iṣṭināʿī]. Ministry of Education, Riyadh, Kingdom of Saudi Arabia. Available at: https://moe.gov.sa/ar/mediacenter/MOEnews/DocLib/Artificial_Intelligence_Guide.pdf

Saudi Vision 2030, 2016. Vision 2030: Kingdom of Saudi Arabia. Government of Saudi Arabia, Riyadh, Kingdom of Saudi Arabia.

Schildkamp K, CL Poortman, J Ebbeler and JM Pieters, 2019. How school leaders can build effective data teams: five building blocks for a new wave of data-informed decision making. Journal of Educational Change, 20(3): 283–325.

Torres-Santos MC and NJ Castulo, 2025. Lessons for K-9 administrators from high school administrators: a case study on data-driven decision-making in New Mexico's multi-layered system of supports. Education 3-13, online first: 1–15.

Tyson MM and NJ Sauers, 2021. School leaders' adoption and implementation of artificial intelligence. Journal of Educational Administration, 59(3): 271–285.

Weng CH and Y Tang, 2014. The relationship between technology leadership strategies and effectiveness of school administration: an empirical study. Computers and Education, 76: 91–107.

Zawacki-Richter O, M Kerres, S Bedenlier, M Bond and K Buntins, 2020. Systematic reviews in educational research: methodology, perspectives and application. Springer VS, Wiesbaden, Germany.