ARTIFICIAL INTELLIGENCE AND EDUCATIONAL MANAGEMENT: THREAT OR CHALLENGE FOR SCHOOL LEADERS

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Abstract

Artificial Intelligence (AI) is rapidly transforming various industries, and is increasingly applied across numerous areas of human activity, offering both significant benefits and unique challenges. Educational management is no exception. AI is being used to improve the learning experience for students and to streamline administrative processes at reduced costs. While the potential of AI in education is vast, its integration into school leadership and management raises critical ethical and practical issues. Key concerns include "What are the benefits and risks of implementing AI in schools" and "What competencies do school leaders need to use AI effectively in their roles". This paper highlights the transformative potential of AI in educational management, arguing that AI should be seen as a valuable tool that enables school leaders to delegate routine management tasks and refocus their attention on creative problem solving and complex interpersonal challenges that require human insight and emotional intelligence. A small survey was conducted among Greek primary school principals to explore their perceptions of AI, their readiness to adopt AI-driven tools, and the challenges they face in integrating AI into their daily practice. The results of the survey provide valuable insights into the practical implications of AI for school leadership and the professional development needs of educators. This study adopted a quantitative methodological design and data were collected through an electronic questionnaire created using Microsoft Forms software. Convenience sampling was used; the electronic questionnaire was administered to participants in 2024 and was anonymous. The findings show that the majority of school leaders are sceptical about the use of AI, perceiving it more as a threat, but are aware that it is a necessity of the times and that training is required. The paper also argues that while AI can augment certain leadership tasks, it cannot replace the core human elements of educational leadership - building deep, authentic connections and demonstrating compassion, empathy and ethical decision-making. As Harris and Jones (2023) argue, leadership is fundamentally about these human qualities, which are beyond the current capabilities of AI. The study concludes by advocating for targeted professional development to help school leaders acquire the necessary skills to work effectively with AI technologies. By doing so, school leaders can improve outcomes while maintaining the human-centred essence of education.

Keywords: School leadership, Artificial Intelligence, administrative tasks, competences, CPD.

1. Introduction

Artificial Intelligence (hereafter AI) is reshaping a multitude of human activity sectors, including education, introducing new tools that enhance the effectiveness of both educators, teachers and school leaders. However, its integration raises ethical and practical dilemmas, especially for school leaders who are tasked with managing its impact on school practice. The emerging question is whether AI constitutes a threat to traditional leadership roles or, conversely, a catalyst for transformation. This paper explores the implications of AI for school leadership, focusing on the benefits, risks, and required skills for principals. Research conducted with the participation of principals from Greek primary schools provides insights into their perceptions of AI and their readiness to adopt related tools.

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2. The challenge of Artificial Intelligence for school leaders

Schools operate as open and complex systems, characterized by dynamic interactions among stakeholders (administration, teachers, administrative and support staff, students, parents, local and national authorities). School functioning can be understood across two institutional levels:

- The micro-level, focusing on the core processes of teaching, learning, assessment, and socialization, and
- The meso-level, concerning the organizational and administrative dimensions of school education, such as human resource management, financial planning, infrastructure and strategy development (Chatzipanagiotou, 2010, p.49).

At the heart of these interconnected levels works the school principal, whose leadership plays a critical role in shaping organizational performance, achieving learning outcomes, and striving for the continuous improvement of the school. This role is rapidly evolving in light of international trends promoting school autonomy and accountability. These trends simultaneously offer leaders greater decision-making power but also increase their responsibilities and pressure (West et al., 2014). Thus, principals are increasingly required to manage (medium to high) risk decisions often under conditions of uncertainty. In this context, data-informed decision-making emerges as a strategic approach to enhance leadership capacity. Although the theoretical value of data usage is recognized for diagnosing problems and planning evidence-based interventions, in practice, many principals face obstacles such as lack of time, insufficient training in data analysis, and the absence of reliable and timely information systems (Marsh & Farrell, 2014). Consequently, the quality and availability of data directly influence the principals' ability to lead effectively.

Artificial intelligence technologies (AI & GenAI) offer new opportunities to support school units. Their applications range from intelligent tutoring systems and robotic tools to adaptive learning platforms, automated assessments, and learning analytics dashboards. These tools promise personalized teaching, support for differentiated approaches, streamlining of administrative procedures, and overall improved educational experiences (Chen et al., 2020). Cooper (2023) describes this shift as a "seismic transformation" of global educational ecosystems. However, their widespread application raises ethical, regulatory, and pedagogical questions. Currently, there is a significant gap in research, frameworks, and ethical guidelines specifically concerning the application of GenAI in educational settings. Educators and policymakers struggle with uncertainty as AI's rapid advancement outpaces the development of clear standards and responsible practices. A recent OECD report (2023) highlights that AI is likely to surpass humans in linguistic and numerical literacy in the near future. This technological leap could render many current skills obsolete. Therefore, education systems must actively adapt, enhancing AI-related competencies among pupils, students, educators, and school leaders, preparing them to collaborate with AI rather than be replaced by it.

This urgent call for adaptation is echoed in the US Department of Education's (2023) report examining the future of teaching and learning in the AI era. The report concludes that traditional approaches to homework, teaching, and assessment may soon become outdated. A radical redesign of educational practices and systems is needed, with AI serving as a catalyst for renewal and transformation. Central to this reconfiguration is the re-evaluation of the role of school leaders, who must now navigate uncharted waters while fostering innovation. Indeed, school leaders (principals and educators) worldwide are already rethinking their roles, responsibilities, and professional practices. As noted by Azorín and Fullan (2022), some longstanding practices are no longer sustainable or effective in the emerging educational paradigm. AI can relieve principals from significant administrative and managerial burdens—freeing time and mental energy for visionary leadership, strategic planning, and community building. While recognizing the significant potential of AI, they are also aware of its risks to teaching and learning. As Van Quaquebeke and Gerpott (2023, p. 272) point out: "The question is no longer whether AI will play a role in leadership, but whether school leaders will continue to have a role. And if so, what that role will be..."

Until today literature on the emerging impact of AI on school leadership remains limited (Hejres, 2022). However, available research indicates that AI can support school leaders by taking over repetitive and routine administrative tasks, freeing time and cognitive space for more strategic, human-centered activities that require creativity, empathy, and social intelligence. At its core, leadership is about building meaningful human relationships and demonstrating compassion (Harris & Jones, 2023)—deeply human dimensions that are difficult, if not impossible, to replicate with artificial systems. Nevertheless, the introduction of AI in schools is expected to transform both the nature and practice of leadership. Principals will need to continually update their technological skills to keep pace with AI's rapid evolution. The COVID-19 pandemic experience marked the emergence of new leadership forms (Harris & Jones, 2022). Therefore, it can be argued that school principals are now better equipped than ever to face the uncertainties

and demands brought by AI, having already managed a form of global disruption (Harris, 2020), an experience that might aid them in approaching the next one.

According to the American Federation of School Administrators (2023), AI is expected to reshape school leadership roles through data analysis, automation of administrative processes, support of student interventions, and facilitation of communication with staff, pupils, and the broader school community. However, the choices school leaders face concerning AI are complex and often overwhelming. Therefore, it is vital for principals to develop a long-term, values-based vision for the ethical and purposeful integration of AI into education. Despite the excitement surrounding this new AI world, principals must keep the learning needs of children and youth at the centre of every decision. This technology could ultimately prove either a valuable educational tool or a threat to professional roles. What is certain is that school leaders are at the forefront of responding to both the opportunities and the challenges brought by AI. To understand technological changes and manage increasing complexity, they will need strong professional networks, collaborative relationships, and mutual support more than ever. The key question is not merely how AI can be integrated into existing educational systems, but how these systems can be redesigned and improved in response to challenges such as:

- Ethical dilemmas: The lack of transparency in AI decision-making may undermine leadership accountability and ethical responsibility.
- Loss of meaningful role: Automation could reduce principals' roles to merely administrative tasks, diminishing their pedagogical and strategic contribution.
- Inequities in access: Unequal availability of AI tools may exacerbate educational disparities among schools and students.

3. Methodology

A quantitative research design was adopted, and data collection was conducted via an electronic questionnaire created using Microsoft Forms. The questionnaire was deemed the most suitable tool as it ensures anonymity, fast distribution (Cohen, Manion & Morrison, 2007), low cost, and easy data collection. Convenience sampling was used, with the sample consisting of 48 members of the Panhellenic Scientific Association of Primary School Principals in December 2024. Of the 48 participants, 30 were women (62.5%) and 18 were men (37.5%). While the study offers important findings, it is recognized that the results reflect the views of a specific sample and cannot be generalized to all Greek school principals. The anonymous questionnaire included demographic questions and closed-ended and Likert-scale questions focusing on three main thematic areas: (a) benefits and risks of using AI in schools, (b) readiness to adopt AI tools, and (c) professional development needs regarding AI. A pilot test of the online questionnaire was conducted with two primary school principals, who provided feedback on completion time, structure, and clarity, ensuring the questionnaire's reliability and validity (Cohen et al., 2008). Coding and descriptive data analysis were performed using Microsoft Excel.

4. Presentation of key findings

The main findings are presented below, based on descriptive data analysis. 65% of participants expressed concern that AI might pose a threat, mainly regarding job security and emerging ethical issues. However, the majority (78%) recognized AI's significant contribution to enhancing the efficiency of administrative processes.

Table 1. Perceptions of AI in Schools.

Question / Theme	Agreement (%)	Comment
AI enhances administrative efficiency	78%	Positive stance on functional uses
AI poses a threat to role security	65%	Strong concern about professional safety
Need for professional development	72%	Urgent need for training investment

Most participants (72%) stated there is an urgent need for training, particularly in digital literacy, ethical AI usage, and change/innovation management.

Table 2. Professional Development Needs.

Training Area	Mention Rate
Digital Competence	High (>70%)
Ethical Use of AI	High
Change & Innovation Management	Medium - High

5. Discussion and recommendations

The findings of this study provide insights into the current attitudes, concerns, and professional needs of Greek primary school principals regarding the integration of Artificial Intelligence (AI) into education. The data sketch a realistic profile of leaders who recognize both the potential and the risks accompanying this technological innovation. A significant proportion of participants view AI as a potential threat, primarily due to concerns about job security. This finding reflects the broader dialogue in the field of educational leadership, where AI is often seen as a double-edged sword—capable of improving efficiency but also of threatening the human-centred nature of leadership.

Despite these concerns, an even larger proportion recognizes AI as an inevitable reality, highlighting its clear advantages in streamlining administrative procedures and reducing everyday burdens. This indicates that principals are not rejecting technology but are seeking its strategic integration into school operations. Moreover, three-quarters of participants expressed a strong need for professional development, particularly in areas such as digital competence, ethical use of AI, and change management. This is a crucial finding, as it shows that school leaders are willing to innovate but do not yet feel sufficiently prepared to lead this transition.

Overall, the results reveal that principals approach AI with a blend of caution and optimism. They maintain a strong ethical responsibility to safeguard the educational interests of children while preserving the human character of school leadership. The pandemic appears to have prepared them to a large extent for the new technological challenge, as they have already experienced the need to adapt their leadership styles. Thus, the main challenge will be to strike a balance between innovation and ethics, technology and pedagogy. Building professional networks and designing targeted professional development programs are essential to ensure that AI becomes a tool for empowerment rather than marginalization.

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