JOBIG Journal of Business, Innovation and Governance
ISSN 2717-9559 dergipark.org.tr/tr/pub/jobig
İZMİR KÂTİP ÇELEBİ ÜNİVERSİTESİ

THE FUTURE OF HIGHER EDUCATION MANAGEMENT IN THE AGE OF ARTIFICIAL INTELLIGENCE: OPPORTUNITIES AND CHALLENGES

YAPAY ZEKA ÇAĞINDA YÜKSEKÖĞRETİM YÖNETİMİNİN GELECEĞİ: FIRSATLAR VE ZORLUKLAR

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Kabul Tarihi / Accepted: 6 Mart 2026

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Benzerlik Oranı/ Plagiriasim: %4

Makale Türü/Article Type: Araştırma Makalesi/ Research Article

ABSTRACT

The main purpose of the study was to determine how artificial intelligence (AI) will shape the future of higher education in terms of managerial efficiency, learning and teaching practices, decision-making, student support services, strategic planning, governance, university-community relationships, diversity and inclusion facilities. This qualitative theoretical review research also purposes to examine both opportunities and challenges AI poses for higher education institutions. Research results reveal that management practices of universities are intensively influenced by AI, and will be reshaped in the future as well. In addition, even though AI provides plenty of opportunities, it poses some challenges. A further result shows university administrator must possess new skill sets like technological literacy, agility, inclusive leadership, and ethical governance. As there is a dramatic change in higher education administration tactics from reactive to proactive, and therefore university leaders should update their administrative skills.

Key words: Artificial Intelligence (AI), Higher Education Administration, Administrative Efficiency, Ethical Governance, Leadership

JEL Codes: I23, O32, M16.

ÖZET

Çalışmanın temel amacı yapay zekanın (YZ) yönetimsel verimlilik, öğrenme ve öğretme uygulamaları, karar alma, öğrenci destek hizmetleri, stratejik planlama, yönetişim, üniversite-toplum ilişkileri, çeşitlilik ve kapsayıcılık olanakları açısından yükseköğretimin geleceğini nasıl şekillendireceğini belirlemektir. Bu nitel teorik inceleme araştırması ayrıca YZ'nin yükseköğretim kurumları için oluşturduğu fırsatları ve zorlukları incelemeyi amaçlamaktadır. Araştırma sonuçları, üniversitelerin yönetim uygulamalarının yapay zekâdan yoğun bir şekilde etkilendiğini ve gelecekte de yeniden şekilleneceğini ortaya koymaktadır. Ayrıca, yapay zekâ birçok fırsat sunsa da bazı zorluklar da beraberinde getirmektedir. Bir diğer sonuç, üniversite yöneticilerinin teknoloji okuryazarlığı, çeviklik, kapsayıcı liderlik ve etik yönetişim gibi yeni beceri setlerine sahip olması gerektiğini göstermektedir. Yükseköğretim yönetim taktiklerinde reaktif taktikten proaktif taktiklere doğru dramatik bir değişim yaşanmakta ve üniversite liderleri bu yüzden idari becerilerini güncellemelidir.

Anahtar Kelimeler: Liderlik, Etik Yönetişim, Yapay Zeka (AI), Yükseköğretim Yönetimi, Yönetsel Verimlilik

JEL Kodları: I23, O32, M16.

1. INTRODUCTION

With the beginning of the 21st century, as a new phenomenon artificial intelligence (AI) has developed very fast, and affected our lives deeply. In the age of knowledge, it is inevitable to refrain from its impacts on out personal and professional areas. It altered almost all fields as well as higher education management area as well. Even though AI provides plenty of opportunities on academic facilities, it poses huge challenges on higher education administration. In this regard, AI not only facilitates daily practices in higher education management but it also transforms organizational operations, decision-making processes, and lecturer-student experiences as well.

AI and its related technologies have transformed many functions carried out at higher education institutions from daily routines to decision-making facilities. This transformation offers both positive potentials and challenges. In this process, higher education leaders find themselves in a difficulty with establishing a balance between efficiency, equality, and academic integrity in their institutions. To this end, this article aims to analyze how AI is shaping the future of higher education management regarding administrative efficiency, personalized learning, teaching practices, decision-making, student support services, strategic planning, governance, community engagement, and diversity and inclusion initiatives. The study also aims to identify both opportunities and challenges AI presents for higher education administration.

2. THEORETICAL BACKGROUND

According to Bursalıoğlu (2005), management/administration involves making decisions, planning, organizing, coordinating, communicating, influencing (directing), and supervising in order to effectively and efficiently utilize the human and material resources available within an organization. In this traditional management definition, administrative functions require efficient use of organizational resources such as human, financial and other resources. However, in the age of knowledge and as a result of the sharp increase in the technological resources, it is important to know how these technological developments are reshaping these administrative functions. After that it is necessary to determine a new way of management.

According to Atasever (2021) administration has shifted as a result of AI digitalization and increasing technological integration of business and industrial processes. In this sense, AI replicates cognitive functions including decision-making, thinking, seeing, reasoning, learning, analyzing, problem-solving, creating experiences, assessing, and making all judgments. With the fast digitalization and increase in the usage of technological instruments, coordination, supervision and decision-making processes have been revolutionized and the way institutions function has changed. In this regard, as a new technological phenomenon AI has started to reshape administrative practices and service delivery systems at higher education institutions day by day. As AI provides both opportunities to higher education institutions and also poses some challenges, it should be handled with care. Then, what are these opportunities and challenges.

3. METHODOLOGY

Research Design

The main purpose of the research was to determine how AI will shape the future of higher education regarding the current situation, potential opportunities, ethical and administrative challenges. To this end, the research adopted qualitative theoretical review design**.** Qualitative theoretical review design requires current related literature systematically, analyze it, synthesize it and evaluate in a critical way. This design was used to summarize scientific improvement in the related literature, determine literary gaps in the field and propose new literary framework for the future researchers. For this reason, this research aims to present a point of view to the future transformation of higher education management field.

Data Sources

The data of the research were collected from several sources especially in the field of higher education management and AI. In this regard, peer-reviewed journals, conference proceedings, and respected national and international peer reviewed journals. The data were collected from the following databases. The sources, total number of sources and date ranges of publications are given in Table 1.

Table 1. The Sources, Total Number of Sources and Date Ranges of Publications

	Source	**Total Number**	**Date Range**
1	Web of Science (WoS)	14	2020-2025
2	Scopus	10	2020-2025
3	EBSCOHost (Academic Search Complete)	10	2020-2025
4	Google Scholar	15	2020-2025

The literature search for this study was conducted across four primary academic databases to ensure a comprehensive and multidisciplinary dataset. As detailed in Table 1, a total of 49 sources were identified and analyzed, with Google Scholar providing the largest yield (n = 15), followed closely by Web of Science (n = 14). Scopus and EBSCOHost (Academic Search Complete) contributed 10 sources each. To ensure the findings reflect the most current advancements in artificial intelligence and its rapidly evolving impact on higher education, the search was strictly limited to a five-year date range from 2020 to 2025. This contemporary focus allows for an analysis of the most recent shifts in administrative tactics and technological integration within the sector.

Search Strategy and Keyword Protocol

In order to ensure a comprehensive and targeted review of the literature, a systematic search strategy was employed using specific Boolean operators. The search focused on intersecting the core technological driver—Artificial Intelligence (AI)—with various dimensions of university leadership and institutional development as shown in Table 2.

Table 2. Basic Keywords for The Reseach Search Strings

Core Concept	Associated Search Strings
Institutional Management	"Artificial Intelligence" AND "Higher Education Management"
Governance & Ethics	"AI" AND "University Governance"; "AI" AND "Ethical Leadership"
Strategic Foresight	"AI" AND "Strategic Planning"; "Higher Education Administration" AND "Future"

The primary search strings included combinations of "Artificial Intelligence" and "Higher Education Management" to capture broad administrative shifts. To drill down into specific governance structures, terms such as "University Governance" and "Ethical Leadership" were paired with "AI" to identify literature addressing the moral and structural complexities of automation. Furthermore, the inclusion of "Strategic Planning" and "Future" as parameters ensured that the selected studies provided a forward-looking perspective on how institutional tactics are transitioning from reactive to proactive models. This multi-layered approach facilitated the identification of sources that bridge the gap between technical AI capabilities and human-centric leadership requirements.

Data Collection Process and Criteria

The selection of literature for this review followed a systematic "inclusion and exclusion" framework to ensure the data remained aligned with the study's specific focus on higher education management. This process filtered the initial search results to maintain a high level of thematic relevance and academic rigor.

Inclusion Criteria

To capture a diverse yet focused range of perspectives, sources were included based on the following three pillars:

- *Linguistic and Geographic Diversity:* Documents published in both English and Turkish were included. This bilingual approach ensures a broader understanding of how AI is being integrated into different regional higher education ecosystems.

- *Methodological Breadth:* The study included primary empirical research, theoretical reviews, and peer-reviewed conference proceedings. This allowed for a blend of "on-the-ground" data and high-level conceptual frameworks regarding AI leadership and ethical decision-making.

- *Thematic Alignment:* Only studies explicitly linking *Artificial Intelligence* to the administrative functions of a university—such as governance, strategic planning, and leadership ethics—were retained.

Exclusion Criteria

In order to prevent "thematic drift" and ensure the study did not become a general review of classroom technology, the following were excluded:

- *Pedagogical vs. Managerial Focus:* Studies that dealt exclusively with instructional design, lesson content, or classroom-level learning technologies were omitted. While these are valuable, the scope of this research is strictly limited to the *macro-level administration* of higher education.

- *Publication Status and Format:* To maintain the highest standard of peer-validated data, unpublished theses, dissertations, and unprinted manuscripts were excluded. Only finalized, published works available through the selected databases were considered for analysis.

Data Analysis and Synthesis

The study employed a four-stage inductive thematic analysis to transform the collected literature into a cohesive theoretical framework. This process followed a bottom-up approach, allowing themes to emerge organically from the data rather than forcing them into pre-existing categories.

Phase 1: Open Coding and Thematic Identification

In the initial phase, each of the 49 selected texts underwent rigorous open coding. The data were segmented based on their primary implications for the sector, eventually coalescing into two foundational "Master Themes": *Opportunities and Challenges* of AI integration within higher education management.

Phase 2: Axial Coding and Categorization

Following the identification of the master themes, a secondary layer of axial coding was applied to develop specialized sub-categories. These sub-codes were organized around functional administrative pillars, including:

- *Administrative Effectiveness and Student Support***:** Automating routine tasks and enhancing service delivery.

- *Strategic Planning and Governance:* Data-driven decision-making and institutional oversight.

- *Leadership and Ethics:* The evolution of required skill sets and the moral implications of algorithmic governance.

Phase 3: Comparative Analysis and Triangulation

To ensure the depth of the review, a comparative analysis was conducted across the various data sources. Findings from different institutional contexts (e.g., Turkish vs. International perspectives) were cross-referenced to identify convergent and divergent trends. This stage specifically highlighted emerging leadership styles and identified gaps where researchers disagreed on the long-term impact of AI on university hierarchy.

Phase 4: Synthesis, Evaluation, and Theoretical Modeling

In the final phase, the fragmented findings were critically synthesized into a unified narrative. This evaluation moved beyond mere description to explore the proactive vs. reactive shift in management tactics. The synthesis culminated in the development of future implications and strategic recommendations designed for university policy-makers and educational researchers.

4. FINDINGS

Opportunities and Challenges of AI for Higher Education Institutions

On one hand, using AI has both potential opportunities for both faculty and students. On the other hand, it has some challenges to be handled with care. In this part, both opportunities and challenges are given with its examples. When leadership in higher education is concerned, applications of AI fall into a variety of categories both opportunities and challenges.

Opportunities of AI

Administrative Efficiency

Artificial intelligence has become an essential tool in enhancing administrative efficiency across higher education institutions. By automating repetitive, high-volume tasks such as admissions processing, course scheduling, and resource allocation, AI systems allow universities to operate with greater accuracy and speed than human personnel alone (Abayomi et al., 2021; Kuleto et al., 2021). For example, there are chatbots that provide 7/24 support for students' routine questions concerning issues of university enrollment, deadlines of the facilities, and other campus services. These chatbots reduce workload of staff who will be busy

most of their times answering these inquiries. As a result of using these programs, administrative staff can find time to deal with other work, planning, and human-centered tasks. This also reduces huge operational expenses and shortens institutional procedures. In addition, with these tools, system can analyze data of applicants to determine their trends and forecast future enrollment rates. AI has also transformed the process of admissions and helped universities to create diverse and academically qualified student population. Moreover, with the work of virtual assistants which help by answering preliminary questions, admission counselors can find more time for deeper and one-on-one interactions (Döğer & Göçen, 2025).

Personalized Learning

AI has reformed customized learning field as well. In this manner, as a result of using adaptive platforms which adapts tempo, complexity, and manner of education to fit every student's performance and learning method (Tang et al., 2020). On the other side, beyond traditional classroom environments, as virtual mentors, it provides personalized and real-time feedback for students (Essel et al., 2022). By using these systems, frustration can be reduced, academic performance can be enriched and effective student-centered learning environments can be established. It is important to offer potential personalized learning platforms for each student and it is valuable to increase student achievement and engagement. As a result, student dropouts can be reduced.

Enhancing Teaching Practices

AI supports professional development of teaching staff and also supports curriculum design. This may develop teaching strategies and methods dramatically. AI also determines instructional gaps and adjust the course content. It also analyses learning outputs as well (Bosman et al., 2023). AI provides teaching staff’s performance data and pedagogical trends with the support of professional development platforms and as a result it provides personalized professional training opportunities (Chiu et al., 2022). All these developments improve the quality of education, provides lecturers gaining necessary skills, and it increases overall efficiency of the institutions regarding teaching and learning.

Decision-Making and Policy Formulation

With the usage of AI technologies, higher education administrators had a chance to predict the possible results of their different policy actions. In this regard, AI helps them to make predictions and analysis and naturally this may improve organizational decision-making process (Wang, 2021). As a result of this proactive management strategy, leaders become more proactive rather than being reactive managers. Universities can also decrease admission bias, disciplinary procedures, and resource allocation by putting ethical decision-support systems in place (Zhang et al., 2022). In addition, AI also contributes to more meticulous policy formation and improves fair actions in educational governance by means of warranting transparent and equitable decisions.

Enhancing Student Support Services

In the knowledge age, AI has a potential to increase and enhance student support services. AI technologies help for online learners and for students who have irregular

schedules. In this regard, students are served by chatbots and virtual assistants in order to help them with course registration, tuition payments, and utilizing institutional resources. At the same time, AI technologies are also used to detect students' educational journey. Here, these technologies may help administrators to determine risks of dropout and failure. These programs can also be used for counselling for academic purposes and may help with establishing student-friendly school environments. By using these programs, it can be possible to create motivating environments for students and they can be happy there.

AI for Leadership and Strategic Planning Purposes

AI-based technologies may establish alternative solution mechanisms for preventing risks, and setting fair resource allocation mechanisms. As Karakuş (2025) underlined there is a relationship between digital leadership and employee innovative work behavior and the perception of digital leadership strengthens employees' job crafting, which in turn enhances innovative work behavior. In the long term, leadership, planning and organizational practices can be developed in higher education institutions. By doing so, as Chiu et al., (2023) stated organizational resource allocation systems can be optimized in order to provide a quality in performance. In order to respond changing circumstances, these technologies can help higher education leaders with analyzing upcoming developments and adopt them to the institutional operations to overcome difficulties, predict enrollment changes, budget challenges and crisis moments. As Fullan et al., (2024) underlined institutions are under risk when they cannot predict these fast developments and these technologies have a potential to help higher education administrators to eliminate all these risks. In this regard, with the help of AI systems, it is possible to determine social trends and potential future program opportunities. This knowledge may help higher education institutions to be creative and competitive in the age of competition.

As indicated in Table 1; administrative effectiveness, individualized instruction, improving teaching methods, policymaking and decision-making, student support services, organizational leadership and strategic planning, governance and compliance, community engagement and communication, ethical AI leadership and governance, and diversity, equity, and inclusion initiatives are a few of them.

Table 3. AI in Educational Leadership

Field	**Main Elements**	**Daily Usage**
Managerial effectiveness	Scheduling systems	AI-powered room and class allocations
	HR management, data-based decision support, analysis of student enrollment and retention	Tools for budget forecasting Performance reviews and hiring Predicting student dropout risks
Career counseling	To improve student support services; behavioral and mental health	Individualized career advice systems Virtual student assistance Warning systems for health concerns AI chatbots for students' questions

Teaching &Learning	Online teaching systems	Virtual tutors driven by AI
	Adaptive learning platforms and content difficulty modification	Tools for monitoring student behavior and performance
Classroom Practices	AI for curriculum design	Professional development opportunities
	Professional development of teachers	Providing feedback on classroom activities
Policy Formulation and Decision-Making	Sentiment analysis for stakeholders,	Forecasting policy outcomes with AI
	Predictive analytics for policy development	Tools for large-scale feedback analysis
		Bias detection in decision-making processes
	Ethical and fair decision-making assistance	
Strategic Planning and Leadership	Allocating resources strategically	AI for budget optimization
	Predicting educational trends	Forecast model the need for future skills
	Managing risks and responding to crises	Risk assessment and backup plans
Compliance and Governance	Monitoring regulatory compliance	Inspecting educational
		Detecting conformity to AI systems
	Detecting fraud and ensuring data integrity	
Communication tools	Using for feedback to AI	Analyzing social media to communicate students/learners
Ethics in Governance and Leadership	Detecting bias	Establishing standards for keeping data
	Keeping management data privacy	Putting rules for AI in classrooms
Equity and Inclusivity	Checking diversity, access and inclusion for curriculum issues	Helping special education needs
		Forming curriculum for children with special needs
		Creating inclusive programs for all students from different backgrounds

Source: Sposato, M. (2025). Artificial intelligence in educational leadership: a comprehensive taxonomy, and future directions, *International Journal of Educational Technology in Higher Education, 22 (20), 2-18.* https://doi.org/10.1186/s41239-025-00517-1

Governance and Compliance

Furthermore, governance and compliance of higher education institutions can also be improved by using AI systems. With the help of AI-powered compliance monitoring systems, it is possible to examine institutional data in order to determine possible irregularities and ensure compliance with both internal and external regulatory norms (Kaur et al., 2022). These kinds of solution mechanisms it is probable to help higher education institutions. to restrain credibility and trust with stakeholders and regulatory agencies by providing accountability and transparency. In this way, systems can be more reliable.

Community Engagement and Communication

In the 21 st century, university-society relationships have become more important. Sometimes higher education institutions may neglect these relationships. For this reason, there may be detachment between university and society. In order to do it, AI offers several platforms to provide community involvement in higher education institutions. By using these systems, it is possible to establish good communication between stakeholders, students, alumni and other community partners (Wang et al., 2023). AI can provide important tactics such as effective, inclusive, responsive language and interactions in order to modify in response to stakeholder inputs. All these can promote cooperation and mutual understanding by empowering institutional links with both internal and external shareholders.

Challenges Of AI

Although using AI has numerous advantages, it poses some challenges on academia as well. In this part, the challenges are given.

Academic Staff's Adaptation and Readiness

One of the challenges of using AI in higher education is the adoption of it by all academicians. According to Leoste, et al., (2021) academic staff have crucial roles in conducting academic facilities in these institutions and therefore their adaptation to AI Technologies is essential. Especially, those who are at certain age groups, they have some critical concerns such as job loss, academic integrity and pedagogical influences about accepting and adopting these Technologies (Ocaña-Fernández, et al., 2019). For example, some academic staff have a fear of losing their power over teaching process and they think that they will lose their control and AI will replace their roles. With the intensive usage of AI in teaching, they try to keep away from adopting these Technologies in order to keep their positions. At this point, institutions must ensure academic staff to keep them involved in course design by offering new opportunities of these Technologies in higher education. Institutions should establish new mechanisms to eliminate their worries and encourage them to use these Technologies effectively in their teaching practices. In this frame, Aldosari (2020) underlines that as these Technologies offer numerous opportunities in their work. Therefore, they should be encouraged to use them effectively but institutions should at the same time warn them against ethical responsibilities and integration. Hence, these Technologies include potential ethical concerns, privacy issues and biases if they are not implemented appropriately by the academic staff (Roumate, 2021).

In order to adopt and integrate academic staff to AI technologies requires a smooth and successful adaptation process in order to develop new skills (Owoc, et al., 2021). Literature reveals that it has some difficulties to adopt academic staff to these technologies. For this purpose, institutions should establish professional teams and mechanisms to manage this transition process. In this regard, professional development seminars, facilities and implementations should be established for this purpose (Bhatnagar, 2020; Indrawati & Kuncoro, 2021).

However, during this adaptation process, higher education institutions should collaborate with other higher education institutions, policy-makers and all other stakeholders in order to overcome problems to be faced. Namely, academic staff or universities should not be left alone in this process. According to Bates et al., (2020) in this adaptation process, all parties and higher education institutions should be fair, transparent, accountable and responsible in order to eliminate staff concerns that may arise.

Challenges of Diversity, Equity, and Inclusion

Diversity, equity and inclusive educational environments have become more crucial as the mobility increases all over the world. Institutions and classrooms are more diverse in this age. As a result of this new situation, higher education institutions should be mora cautious. In this regard, AI technologies provide many opportunities in order to improve inclusive environments, provide equity, and open too for diversity as well. By analyzing demographic and performance-related data they have, advanced AI-based analytics systems can determine differences in attainment, access, and resource allocation in balance (Xia et al., 2022). Apart from this, in order to reduce disparities, lower obstacles, and empower inclusive learning environments, higher education institutions must intervene in these situations. In this regard, by integrating AI into equity programs, higher education institutions can provide more equal educational systems which serve disadvantaged groups more. Research reveals that there are many concerns about equity and access regarding AI technologies in higher education field (Dennis, 2018). Especially, there may raise concern about AI biases and potential inequalities in the field of higher education (Barrett et al., 2019; Taneri, 2020). For this purpose, special attention should be drawn in order to reduce these concerns and promote inclusive educational facilities for all in this field.

Ethical and Legal Concerns

Apart from all the opportunities AI offers, there are ethical and governance concerns with the use of AI in higher education management which needs to be handled with care. The intensive use of AI may create ethical risks and opportunities for misuse; robust governance is therefore essential. In this regard, it requires strong administrative structures which prioritize accountability and transparency. At the same time, avoiding algorithmic bias, providing data privacy and equity are essential while using AI. Higher education institutions should implement such systems which include human beings more carefully and guarantee bias detection algorithms, and privacy precautions for ethical formation (Nguyen et al., 2022). As it is crucial to be more careful when using human strategy, AI should ensure privacy and lessen judgements and prejudices. By doing it, the systems can be more secure and educational goals are more possible.

There are many challenges of adopting AI Technologies to higher education institutions. One basic challenge is ethical concerns and biases issues. There are a lot of data collected on a platform and they may have biases and it is difficult to provide biases (Bates et al., 2020). While providing student feedback on their progress, allocate their resources it may be difficult to be fair, transparent and accountable with the data that can be reached by many people (Roumate, 2023). For this purpose, the process should be kept strictly, privacy should be strengthened in order not to lead biases and misuse of the data provided in higher education institutions. Hence, as Vacarelu (2023) and Chatterjee and Sreenivasulu (2019) underlined privacy, security and bias-related ethical and legal issues may lead to many important challenges in the context of AI-based transformations in higher education field. In this regard, many studies also noted that it is essential to provide transparency, fairness, and accountability in AI-based transformations in order to provide responsible and ethical use of AI in educational environments (Kerr, 2020; Zeide, 2019).

As Kerr (2020) reported defining ethical dimensions of AI in higher education can be complicated. In this sense, many challenges may rise in terms of having all AI-based Technologies in higher education field and caution must be shown. In order to be transparent, it is essential to develop clear policies and guidelines when using these technologies to eliminate ethical concerns. By doing so, it may be possible to overcome many challenges and may be possible to facilitate using AI responsibly in the field of higher education (Roumate, 2021).

Cost and Implementation Challenges

Adopting AI Technologies into higher education institutions have also some difficulties regarding its high costs and implementation expenditures. Many studies reveal that it requires a huge invest in order to combine these Technologies to existing system and currently with the budgetary constraints it seems difficult to provide all Technologies and services to higher education institutions (Abioye et al., 2021; Akinwalere et al., 2022; Crompton & Song, 2020). In this regard, governments should provide more resources to these institutions. Otherwise, the process may fail.

Privacy Concerns of AI

According to Zawacki-Richter, et al., (2019) privacy issues are important ones when using AI-based Technologies in the field of higher education. As AI systems save and process huge amounts of data, including private information such as students' academic records, behavioral patterns, and personal references, it important to provide privacy and security of the systems (Kelly, 2021). In this process, it is necessary to protect students' privacy rights and comply with relevant data protection regulations. According to Kelly (2021), it is essential to protect data privacy and security of the students and their rights and comply with relevant data protection regulations. Ensuring privacy in terms of accessing these data, special mechanisms should be strengthened in higher education.

New Skillsets for University Leaders at The Age of AI

21st century is considered as the age of knowledge and knowledge is power. When Sir Francis Bacon wrote in his Meditations Sacra that "knowledge itself is power," he likely

intended to convey the idea that possessing and sharing knowledge is the cornerstone of prestige and influence, and therefore power; it is from this that all achievements stem. Today, scientific knowledge is shared through publications that not only inform but also have the capacity to influence decision-making.

At the age of knowledge administrators should have equipped with knowledge. When higher education institutions are concerned, it becomes more critical. In this frame, at the age of AI higher education leaders cannot manage their institutions with traditional way of management theories. They should equip themselves with new approaches which enables them to manage their institutions better. For this reason, higher education leadership competencies must be redefined in light of AI.

Higher education institutions should develop their administrative capacity to protect AI-driven data successfully. In order to do it, they should provide agility, creativity, critical thinking, and entrepreneurial skills besides their traditional administrative skills (Karaköse & Tulubas, 2025). Since higher education administrators should understand AI systems better, should have technological literacy, knowledge of data-mining and aware of their ethical considerations. For these reasons, these leaders should implement effective change management practices, collaborate with other disciplines, and have inclusive leadership skills. In addition to this, these leaders should integrate AI to their systems better and make academic staff, administrative staff and students involve in all processes. With implementing these new skill sets, higher education administrators may administer their institutions better for the age of digital transformation.

5. CONCLUSION

In the age of digital transformation and at the age of AI, higher education administration becomes more critical these days. As can be understood, AI poses both opportunities and challenges on higher education administration field. On one hand, while AI offers several advantages such as efficacy, personalization, and data-driven decision-making, it also poses many challenges on the field such as ethics, equity, and keeping human-centered principles in higher education environment. In this manner, while adopting AI technologies into the higher education field, higher education administrators should be careful because the academic culture, academic values and form of governance require a special care.

Regarding the opportunities, AI seems to have a potential power to reshape the future of higher education administration. In this regard, AI provides a lot of chances to transform these institutions into efficient ones with correct usage of organizational strategic planning, AI-based decision-making, student support, and an effective administrative structure. With the correct transformation, the field of higher education administration can provide a more dynamic, equal, and resilient environment by embracing AI. Higher education institutions are people-centered organizations, and therefore caution must be exercised in this process. Ignoring human resources and their potential contributions, this integration may carry universities to a lower place instead of increasing its effects.

The usage of AI in the field of higher education institutions is not a sole development, it leads to a fundamental shift in how higher education institutions organize, administer, and perform their basic functions more effectively. AI Technologies carry these institutions

beyond their limits and carry them to a higher league. Seeing these Technologies only encompassing teaching, learning, policy-making, community engagement, and strategic planning can be a limited point of view. Rather, these Technologies have a potential to promote efficiency and innovation if practiced and implemented in a good way.

AI-based Technologies can also be used in other fields by higher education institutions in order to fasten administrative processes, personalize learning platforms, improve educational methods, and make more data-driven policy decisions for future developments. With these contributions, higher education institutions can meet international demands regarding being more inclusive, student-centered, and accountable institutions.

On the other hand, the implementation of algorithmic systems may also cause important challenges such as equity, transparency, and ethical responsibility. If they are not used and controlled properly, AI can increase existing injustices, lead to biases, or create doubts among stakeholders and other institutions. As Doğan, Demir and Yaşar (2025) underlined challenges such as academic integrity, data protection, algorithmic bias, and institutional readiness remain critical risks that limit the sustainable and equitable implementation of these technologies. Akşab, and Seggie (2024) also noted that the limitations of AI in higher education are data privacy, data quality and integrity, algorithmic bias, pedagogical autonomy and human-centered approach/empathy. In order to overcome these problems, it is essential to put a new leadership approach into practice, which balances human needs and technological requirements. It is also essential to develop quantitative accountability metrics, such as decision audit trails for AI systems and investigate models of shared accountability between educators and AI systems to prevent miscommunication (Behera, Trivedi, Patra & Makeni, 2025).

Regarding the leadership of higher education institutions, the new age requires a new type of leadership. In this leadership type, it is necessary for leaders to go beyond traditional leadership skills and equip new management competencies such as technical literacy, critical thinking, interdisciplinary teamwork, and ethical sensitivity. In this regard, higher education administrators and leaders, should be more adaptive strategists that are able to navigate uncertainty at the age of digital environments. They should also welcome diversity, academic integrity, and social responsibility more responsibly. If these capacities are not developed, higher education institutions are under risk in the future in terms of becoming technologically advanced but ethically fragile.

In addition, the integration AI Technologies to higher education institutions requires a lot of things such as effective administrative skills, transparency, accountability, and equity. For this reason, in order to provide an inclusive communication with all stakeholders, it is essential to establish a “human loop” mindset. In this mindset, it is possible to keep human in the center of all these changes in educational processes, and incorporate transparency into algorithmic decision-making. Higher education institutions, should not only use AI just for practical reasons, but they should also recognize broader educational goals such as social justice, social development, and critical thinking. They should be in the center at the age of transformation.

Ryzheva et al., (2024) conclude in their study that AI is a neutral yet essential "edutainment" toolkit in higher education, whose value is determined not by the technology

itself, but by the ethical application and continuous lifelong learning of the highly qualified specialists who wield it. As Saaida (2023) underlined it is essential for higher education administrators to be more responsible and ethical in the process of implementation of AI technologies in their institution. It is essential to balance human-driven and AI-driven potentials for the benefit of students, academic staff, and society as well.

In conclusion, the role of AI in higher education administration is neither definitive nor morally neutral. These institutions may either allow technology to strengthen inequality and weaken human agency, or they can be implemented to make education more inclusive, responsive, and future-oriented. For this reason, at the age of AI, higher education administrators should not only to embrace AI, but also to manage its implementation process in a more collaborative, strategic, and ethical manner in order to serve for public mission of these institutions.

All in all, it can be summarized that AI is a transformative yet morally neutral tool whose impact on higher education is entirely dependent on human agency and ethical leadership. While it offers unprecedented opportunities for administrative efficiency, data-driven decision-making, and personalized support, it also introduces significant risks regarding algorithmic bias, data privacy, and the potential erosion of academic values. In order to complete this transition, the study advocates for a "human-in-the-loop" mindset and a new era of leadership characterized by technological literacy, ethical sensitivity, and adaptive strategy. Ultimately, the success of AI integration in higher education management depends on balancing technological power with a commitment to social justice and the continuous development of highly qualified specialists.

6. RECOMMENDATIONS AND FUTURE IMPLICATIONS

Based on the study results the following implications and recommendations can be made for p**olicy-makers and practitioners:**

- Future studies should be conducted on technical performance of AI systems, their long-term social, cultural, and organizational impacts.
- Long-term future researches can be conducted on the influence the benefits and risks of AI on higher education institutions.
- Empirical researches can be conducted in order to evaluate academic staff's attitudes on AI.

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EXTENDED ABSTRACT

The current study purposes to examine how AI is used in administrative practices, implementations and decision-making processes in higher education institutions. The article also studies how traditional structure of higher education is already under pressure because of changing student demographics, financial limitations and the necessity of digitalization. In this regard, AI can be a good and powerful solution to these challenges by means of providing rich tools of efficiency, personalization, and better decision-making.

Main Areas of AI Implementations

The study underlines some basic areas where AI may create a significant influence on higher education administration. These areas are:

1. Student Experience and Management (Student Lifecycle Management)

AI implementations can make students' entire journey easier ranging from the beginning to the graduation periods. The following areas are conducted easier in this manner.

- *Admissions and Enrollment:* AI-based algorithms can analyze all data when students enter their personal data in the system. With these data, enrollment and admission processed can be more practical and faster. By using these data, the processes can be fair and selection can be more effective. The system can also predict their potential success possibilities.

- *Academic Support Mechanisms*: Based on the data students provided, it is possible to identify risks and counselling can be implemented proactively. As a result, drop-out rates can be minimized.

- *Alumni and Career Services*: By analyzing the data of the alumni, it can be predicted how the student's careers can be directed according to the real needs of the job-market.

2. Operational Efficiency and Cost Management

Higher education institutions can predict costs and can make a slot of savings by automated administrative processes by means of AI.

- *Resource Planning:* AI can be used to analyze facility plans, needs of classrooms, human resources more effectively. By doing this, costs of different resources can be reduced.

- *IT Management:* AI implementations can also be used in the tests of cybersecurity monitoring, help desk automation, and infrastructure management. It all reduces operational costs of higher education institutions.

- *Finance and Budgeting:* AI algorithms can be used for revenue movements, loans, students' scholarships, and spending issues. It may provide budgetary stability of the institutions.

3. Instruction and Curriculum Development

AI implementations can also help with both administrative operations and academic process management in higher education institutions.

- *Curriculum Optimization:* AI implementations may be used to analyze curriculum current and relevant tools. It can also be used to analyze job-market trends and feedback of students.

- *Integration of Educational Technologies:* AI-based operations lead to establishing more effective Learning Management Systems (LMS) and Adaptive Learning Platforms. They may provide higher education administrators with detailed data on pedagogical and academic effectiveness.

4. Research and Development Management

- *Project Matching:* AI implementations may accelerate academic and administrative collaborations by means of matching researchers with potential partners of the job-market, research funders, and relevant studies as well.

- *Ethics and Misconduct Detection:* AI implementations may detect ethical violations more quickly. By means of these tools, plagiarism and data manipulation in academic publications can be prevented.

Implementation Challenges and Ethical Dimensions

In addition to the opportunities that AI offers, the current article underlines crucial challenges that higher education institutions may encounter in the process of this transition:

1. Data Quality and Infrastructure

Data quality depends on the success of AI algorithms. It is difficult for higher education institutions to standardize and consolidate their disparate and aging data systems. It requires high investments costs to establish legal systems.

2. Workforce and Cultural Resistance

As known most change initiatives can be resisted by the staff in any organization. It is also possible at higher education institutions for many reasons. Among the reasons, staff may have a fear of losing jobs, changing routines and falling behind new technologies. In this regard, higher education administrators should adapt these changes to the system step by step and inform each step to the staff well. By doing this, staff can adapt the changes better. In addition, support mechanisms should be established in order to help them overcome the challenges they face.

3. Ethical and Transparency Risks

There are some critical issues that should be taken into consideration while these changes are adapted to higher education institutions. These are algorithmic bias, privacy and transparency.

As AI models are used in order to organize admissions, or grading at higher education institutions, algorithmic bias can be overcome by being more careful with existing historical biases regarding race, gender, or socioeconomic status exist in the training data sets. This may consist threats towards the principles of equity and justice in education.

Regarding privacy, it can be stated that some misuse or violations may lead to big legal and serious ethical problems. For example, with AI, higher education instantons gather great amount of sensitive data regarding student behaviors and academic performance. Usage of these data with unethical ways, it can cause major legal and ethical problems. For this reason, privacy should be one of the main priorities of institutions.

In terms of transparency, in higher education institutions some critical decisions are made by using AI Technologies. While using these Technologies especially in admission processes and grading systems, it is essential to set transparent policies. In this case, students and other parties can be consented.

Future Implications

The AI Technologies changes in all areas rapidly and higher education institutions needs to adapt these changes to the management approaches in order to transform their structures successfully. For this reason, the following steps should be taken:

- Higher education institutions should develop a strategic vision of AI. In this step, these institutions should set a vision of supporting the institutional mission, rather than using AI as an operational tool.
- Higher education institutions should establish administrative bodies to manage this transition. In this step, they establish clear ethical guidelines, transparency standards, and oversight mechanisms for AI usage.
- These institutions should establish support mechanisms in order to help staff to overcome all difficulties they may encounter. In this regard, their skills should be developed and Professional development needs should be analyzed. It is also necessary, to encourage creativity, and critical thinking in areas where AI saves time.

In conclusion, in the age of knowledge and technology, AI is an inevitable force in higher education management. While higher education institutions adopt this technology into their bodies, they should ensure integration not only focuses on efficiency but also safeguards the values of ethics, equity, and human-centered education. Institutions that destroy this balance may be the ones to endure in the future global competitive landscape.