CHANGING ASPECTS OF THE MANAGEMENT OF DISTANCE EDUCATION INSTITUTIONS DURING AI ERA: A CASE STUDY

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ABSTRACT

This study aimed to investigate how the era of artificial intelligence is transforming the management of distance education institutions, based on the perspectives of faculty members with expertise in distance education and administrative roles. Conducted as a qualitative case study, the research was carried out at a public open education faculty in Turkiye and involved twelve faculty members (five full professors, six associate professors, and one assistant professor), all experts in distance education. The data were collected through semi-structured interviews and analyzed through thematic analysis. The results of the study point out that artificial intelligence is driving substantial changes in decision-making, leadership practices, technology integration, and the management of teaching and learning processes. These changes reflect both opportunities and challenges, especially concerning institutional readiness, ethical leadership, and equitable access. Building on these findings, the study highlights the critical need for human-centric strategies, organizational capacity, and ethical governance to promote the sustainable adoption of AI technologies in distance education.

Keywords: Artificial intelligence, AI in higher education, distance education, educational leadership, management of distance education, technology integration.

INTRODUCTION

As a disruptive technology, artificial intelligence has triggered a radical transformation across all segments of society, particularly in the economy. Gaining an advantage in global competition is possible by accurately understanding the disruptive nature of this technology. The qualities of human resources—considered the most valuable asset of organizations—are being redefined in line with the dynamics of AI development. Consequently, both human resource management and broader management processes are now being approached from a new perspective. Organizations that fail to understand the AI era and adapt their management and workforce may face serious disadvantages in competition (Kumar et al., 2025).

The reflections of AI age on higher education institutions are forming a perspective which is quite different from traditional understanding. AI-powered assistants having a guiding role in students' information access processes and AI algorithms providing real-time data to faculty members to meet students' academic needs effectively based on their individual differences are among the principal indicators of this transformation. Especially as AI-based platforms begin to replace traditional teaching-learning situations, the management processes of higher education institutions have started to reshape according to the necessities of AI age (Qutieshat, 2025).

Developments in internet technologies have brought alternative perspectives to provide effective solutions for individuals' increasingly diversified educational needs. Particularly during periods when geographical and economic barriers become important and the digital divide boosts, the expectations of individuals' personal development have been carried out by means of distance education opportunities. Beyond the physical classroom environment and increasing interaction between geographically distant learners and educators via digital technologies provides grounds for novel opportunities to show up in the future-based directions of educational technologies. In AI age, the holistic and strategic integration of existing digital technologies into distance education processes has critical importance for educational institutions to obtain their objectives (Nartey, 2025).

With the widespread use of AI in distance education, major changes will occur in the roles and responsibilities of these institutions. AI-supported systems will give new momentum to lifelong learning. At the same time, developing digital skills and adapting human resource training to the evolving labor market will highlight the transforming role of distance education in the AI era (Fidalgo & Thormann, 2024).

LITERATURE REVIEW

Management of Distance Learning Institutions in the AI-Based Transformation Process

The AI era marks a paradigm shift on a global scale. Throughout history, each paradigm shift has brought about fundamental transformations within its own structural context. In this era, complex and intensive decision-making processes are being optimized through AI-supported decision support systems, while natural language processing technologies and machine learning algorithms continue to evolve (Kissinger et al., 2021).

During the AI era, transformation in the management processes of organizations established to achieve specific goals has become inevitable. In this age, the survival of organizations depends on their ability to transform their organizational structures and operating methods. However, this transformation process should not be viewed only as the integration of new technologies into organizations. With artificial intelligence, new roles, new expectations, and new competencies are emerging in organizations; these elements necessitate a review of management approaches (O'Connor, 2024).

The effective and efficient use of institutional resources in the process of achieving organizational goals enables educational organizations to achieve their goals rationally. This explicitly indicates the strategic importance of the management process for educational institutions (Okonkwo, 2024). Distance education is one of the areas where the transformation brought about by artificial intelligence in educational institutions is most clearly observed today. As in all other organizations, remodeling of managerial processes in distance education institutions in line with the dynamics of the age has become a critical necessity. In this setting, artificial intelligence, regarded as a disruptive innovation, has the capacity to make meaningful contributions to the management processes of distance education institutions through the opportunities it offers and the potential threats it poses, which can be managed when properly internalized (Saidu et al., 2024).

As artificial intelligence technologies develop, one of the up-front opportunities for educational institutions is the support of distance learning processes with artificial intelligence. These applications are transforming not only learning processes but also the decision-making, planning, and administrative processes of educational institutions. This transformation necessitates a multidisciplinary approach that addresses artificial intelligence and distance education not only from a technical perspective but also from pedagogical and administrative dimensions (Kose, 2015).

Technology integration plays an important role in managing distance education during the AI-driven transformation. As AI technologies continue to develop, many educational institutions around the world are increasingly focusing on integrating AI into their systems and processes. Similar to other fields, distance education has the potential to benefit extensively from artificial intelligence. Nevertheless, the effective implementation of these benefits requires a robust and well-developed technological infrastructure (Khedrane, 2024). During the integration process of distance education institutions with up-to-date technologies, the level of institutional readiness for such technologies is the most critical component to consider. Although technical integration with advanced technologies is possible when adequate financial resources are available, the capacity of the existing infrastructure to support these technologies holds strategic importance for the sustainability and efficiency of distance education services. In this regard, achieving the targeted outcomes does not solely depend on acquiring new technologies but also on the effective utilization of existing technological components—such as management systems, software, and servers (Simonson et al., 2019).

Technological infrastructure to be established for all students to benefit from distance education services should increase the effectiveness of various distance education technologies which are able to provide suitable alternatives appropriate for different learning necessities of students. On the other hand, current institutional technology infrastructure should be configured to support such evolving technologies as cloud computing, mobile learning, and artificial intelligence to ensure scalable, sustainable and seamless access for all stakeholders (Benke & Widger, 2023).

A well-structured and rational approach to management processes is essential for the vitality of any organization. The capacity to launch strategic initiatives, pursue realistic and achievable visions, allocate human and financial resources efficiently, swiftly adapt to evolving external conditions, and embed sustainability as a core institutional value all hinge on the effectiveness of these processes (Bateman & Konopaske, 2023).

The management approaches of distance education institutions should be re-examined through a new lens in the age of artificial intelligence, particularly in light of emerging technologies that are reshaping how organizational goals are pursued. AI-driven technologies offer novel ways of implementing management practices in distance education settings, diverging significantly from traditional organizational models. Key applications include the planning of diverse course offerings tailored to student needs, the creation of detailed student records in databases to facilitate responsive support services, and the rational allocation of institutional resources to better meet learner demands. These developments represent some of the most fundamental dimensions of how artificial intelligence is transforming management processes within distance education institutions (Saidu et al. 2024).

In the delivery of distance education services, three core variables warrant close attention: The quality of educational services, their accessibility, and the associated costs. Institutions offering distance education must strike a careful balance among these variables. This balance is often conceptualized through the metaphor of an isosceles triangle, which symbolizes the need to reduce costs wherever possible while simultaneously enhancing both the accessibility and the quality of the education provided (Daniel, 2010). In this context, the advancement of artificial intelligence-particularly in the realms of deep learning and machine learning-offers significant potential for optimizing instructional management processes by reducing both time and operational costs in distance education settings (Khedrane, 2024).

In the age of artificial intelligence, leadership has evolved beyond its traditional roles, compelling organizations to adopt new forms of leadership that align with the demands of the digital era. At the heart of this transformation lies the deep integration of AI Technologies-grounded in big data-into institutional structures, fundamentally reshaping how these organizations function. In such a context, leadership is best perceived as the capacity to steer an organization toward its objectives in a rational, strategic, and adaptable manner, even amidst uncertainty, complexity, and constant change (Elsherif, 2024).

As in all organizations, leadership is an indispensable reality for institutions that provide distance education services. The success of online education depends greatly on strong and effective leadership. In today's context, leadership is not merely about integrating technological tools into the institution. Rather, within a strategic vision, the leader must be capable of managing the technological infrastructure and teaching-learning processes in coordination with all stakeholders, in order to ensure that online education reaches its intended goals (Picciano, 2019).

In today's world, leadership within online education organizations requires responsiveness to requirements of both the outer environment and internal stakeholders-especially students. It involves the ability to internalize change effectively, stay attuned to cutting-edge developments in educational technologies, and demonstrate the agility to respond to unforeseen challenges. In this context, leadership must be implemented as a transformative and strategic function-one that addresses institutional challenges through a holistic approach grounded in strategic planning (Casimiro et al., 2024).

The adoption of artificial intelligence technologies in distance education institutions has brought the management of instructional processes to the forefront as a matter requiring careful and deliberate attention. In the age of AI, managing teaching and learning within online education involves not only unforeseen challenges but also significant opportunities for innovation and transformation. By offering learning alternatives tailored to individual needs, AI facilitates personalized educational experiences and actively boosts student engagement-both of which contribute to the more effective orchestration of instructional processes. However, this technological shift also demands a critical appraisal of several issues, particularly ethical concerns such as data privacy and the protection of personal information, as well as potential risks stemming from inadequacies in technological infrastructure (Da Piedade Fernandes, 2025; Saidu et al., 2024).

When the logic behind the management of distance education is examined, its most strategic element appears to be the design of effective teaching and learning processes between geographically dispersed students and instructors, independent of time and space constraints. The growing integration of artificial intelligence into instructional processes has placed the learner at the center of the educational experience. Intelligent systems now analyze individual learning needs with precision, matching learners with appropriate environments and expert instructors. This offers distance education institutions a renewed, future-oriented approach to instructional management. Looking ahead, the development of adaptive learning environments and the integration of augmented and extended reality will further enhance the role of instructional management in AI-driven distance education, establishing it as a dynamic area of academic and institutional focus (Isik & Aslan, 2015; Ozarslan, 2021).

PURPOSE OF THE STUDY

The primary purpose of this study is to examine how the age of artificial intelligence is transforming the management of distance education institutions, based on the views of faculty members who have specialized in distance education and have held administrative positions. Specifically, the study focuses on comprehending how this shift has been experienced and what challenges have risen in the process, drawing on the insights and professional experiences of former academic administrators at an open education faculty within a state university in Turkiye.

In line with this purpose, the study was guided by the following four research questions:

1. According to faculty members with administrative experience, what are the reflections of the age of artificial intelligence on the management processes of distance education institutions?
2. What are the views of these faculty members on the transformation of leadership roles in distance education management in the context of artificial intelligence?
3. What are their perspectives on technology integration in distance education institutions during the age of artificial intelligence?
4. How do they perceive the management of teaching and learning processes in distance education institutions during the age of artificial intelligence?

METHOD

Research Design

A qualitative case study design (Merriam, 2009; Yin, 2009) was employed to explore how artificial intelligence (AI) is transforming the management of distance education institutions through the perspectives of faculty members with administrative experience at a public open education faculty in Turkiye. Framed within the interpretivist paradigm, the study conceptualizes the institution as a bounded case and draws on the views of faculty members with administrative experience to develop a context-sensitive understanding of how AI remolds institutional praxes in educational management.

Participants

This study used criterion sampling to select participants with relevant administrative experience in distance education (Patton, 2015). Twelve faculty members with administrative experience in distance education from a public open education faculty in Turkiye were included, all of whom had held or were currently holding leadership roles. The study group, five of whom are full professors, six of whom are associate professors and one of whom is assistant professor, are experts both in academic management and arising role of AI in education. Pseudonyms were used to ensure anonymity, and demographic information such as age, academic title, and years of experience are given in Table 1.

Table 1. Demographic Information of the Participants

Code	Age	Gender	Academic Title	Field of Expertise	Years of Experience	Years in Administrative Experience
Asim	52	Male	Professor	Open and Distance Learning	30	12
Esra	51	Female	Professor	International Relations	30	10
Bora	44	Male	Professor	Open and Distance Learning	23	10
Ceyhun	40	Male	Professor	Open and Distance Learning	17	6
Can	43	Male	Assistant Professor	Open and Distance Learning	14	6
Ferhat	47	Male	Associate Professor	Psychometrics	26	6
Emre	52	Male	Associate Professor	Open and Distance Learning	29	26
Ufuk	52	Male	Associate Professor	Quantitative Methods	29	13
Tezcan	42	Male	Associate Professor	Open and Distance Learning	19	9
Tankut	37	Male	Associate Professor	Open and Distance Learning	10	5
Nur	50	Female	Associate Professor	Open and Distance Learning	23	10
Ahmet	61	Male	Professor	Open and Distance Learning	39	36

Data Collection

Data were collected through semi-structured interviews, a method commonly used in qualitative research balancing structure with flexibility (Kvale & Brinkmann, 2009; Merriam & Tisdell, 2016). The perceptions of faculty members with administrative experience on the influence of artificial intelligence on the management of distance education institutions were captured through interviews. The researcher reviewed relevant literature on artificial intelligence, organizational leadership, and digital transformation in education to design the interview protocol. The inaugural draft consisted of 25 open-ended items. Five experts in educational administration and distance education reviewed this version for clarity, relevance and scope, and provided feedback. Considering the feedback, 9 items were excluded and the guide finally consisted of 16 core questions, some of which served as optional prompts for further elaboration (Maxwell, 2013; Patton, 2015).

Before data collection, ethical approval was obtained from the ethics committee of the affiliated university. The participants were informed about the purpose of keeping all this confidential, the voluntary nature of their participation, and their right to draw back at any time. All participants presented written informed consent to the researcher. Interviews lasted between 45 and 70 minutes and were conducted in person or via secure video conference, depending on the participants' preferences. Sessions were audio-recorded with participants' permission and later transcribed by the researcher. Member checking process was held by inviting the participants to review their transcripts for accuracy and this allowed them to confirm or clarify their responses (Lincoln & Guba, 1985; Merriam & Tisdell, 2016). The researcher completed the data collection process once he found out that there weren't any new themes or codes, which showed thematic saturation had been reached (Guest et al., 2006; Mason, 2010). All transcripts were anonymized and securely stored in encrypted digital archives, with systematic tagging to maintain traceability and confidentiality.

The researcher addressed credibility, transferability, dependability, and confirmability, each of which is proposed by Lincoln and Guba's criteria (1985), throughout the research process to ensure the reliability of the study. The researcher also supported credibility through expert validation of the interview guide, member checking, and long-term engagement with the research context (Maxwell, 2013; Patton, 2015). The researcher ensured transferability by providing detailed contextual descriptions of the institutional setting, the participants' roles and backgrounds, and the broader educational environment in Turkiye. To ensure dependability, the researcher documented each step of the research process, including interview procedures, analytic notes, and coding decisions. Peer debriefing also contributed to methodological consistency. The researcher also strengthened confirmability through reflexive journaling and triangulation apart from different data sources, such as participant narratives, field observations, and analytic memos. That helped the researcher to critically monitor his or her own positionality and minimize personal bias (Denzin, 1978; Nowell et al., 2017). The researcher conducted the study in a way that was both systematic and sensitive to the institutional realities and perspectives shared by participants through the efforts mentioned above.

Data Analysis

In this study, thematic analysis based on Braun & Clarke's framework was used to identify and interpret recurring patterns in the dataset (2006, 2022). Because of its flexibility and depth, these methods are well suited for sensitive insights based on experience. Accordingly, the analysis proceeded through six key phases as outlined by Braun & Clarke: Familiarization, coding, theme development, review, definition, and reporting. In order to penetrate deeply into the data, the interview recordings were reviewed several times, and the initial codes were created through both semantic and latent content analysis. The researcher extracted themes from the participants' responses and adopted an integrated inductive-deductive approach, which also aligned the study's questions with previous research on artificial intelligence in educational settings (Creswell & Poth, 2018; Fereday & Muir-Cochrane, 2006). A codebook was developed to ensure consistency and themes were clarified through collaborative and reflexive discussions. Intercoder reliability was addressed through double-coding of selected transcripts by two independent researchers, with discrepancies discussed and resolved in line with recommendations by Miles et al., (2014). Documentation of emerging patterns and researcher reflections was maintained throughout the analysis to support transparency and confirmability.

To illustrate the analytical process, a sample coding structure is presented in Table 2, demonstrating how a participant quotation was categorized into its corresponding code, sub-theme, and overarching theme.

Table 2. Sample Coding Structure

Theme	Sub-theme	Code	Quotation
Reflections of AI on Management Processes in Distance Education	Real-Time and Data-Driven Decision Making	Real-time performance tracking	We no longer wait for midterm results to understand student progress. AI systems give us real-time alerts based on student activity data, so we can reach out to struggling students almost immediately rather than waiting until the damage is done. – (Ufuk, Associate Professor)

Researcher Role

In qualitative research, the researcher's background and standpoint are not peripheral but integral to the research process. Because personal assumptions can shape interpretations, researchers are expected to remain reflexive—continually examining how their own positioning might influence the study (Creswell, 2005; Finlay, 2002). Constructing a robust theoretical framework can help guide this process and serve as an anchor for objective inquiry.

This study was conducted by a researcher who holds a PhD in Educational Administration and has extensive academic and professional experience in distance education and artificial intelligence. The researcher's involvement in teaching and leading seminars in these domains provided both deep content knowledge and the ability to distinguish theoretical insights from personal views. A reflexive stance was adopted by the researcher throughout the study and he actively participated in the data collection and analysis processes not only as an external observer but also as a reflective agent of inquiry (Berger, 2015; Finlay, 2002). Years of experience in higher education, particularly in distance learning environments, has helped to build a strong relationship and trust with participants, which is a key factor in eliciting rich, authentic narratives (Lincoln & Guba, 1985). The researcher made conscious efforts to avoid influencing participant responses, being aware of possible biases, especially when interviewing in a familiar organizational context. Open-ended questions allowed the participants to express themselves freely and reflect on their own professional experiences and perspectives. During the analysis phase the researcher was aware of his own position and constantly checked that interpretations were based on participants' narratives rather than their personal assumptions (Berger, 2015). This reflexive approach helped to ensure a holistic and balanced understanding of the data. Ethical standards such as voluntary participation, confidentiality and informed consent were carefully maintained at every stage of the study (Lincoln & Guba, 1985).

FINDINGS

Reflections of AI on Management Processes in Distance Education

Addressing the first research question "According to faculty members with administrative experience, what are the reflections of the age of artificial intelligence on the management processes of distance education institutions?", the findings revealed that artificial intelligence has significantly transformed managerial approaches and decision-making structures in distance education. Participants highlighted a shift toward more data-driven, automated, and predictive forms of management, where AI plays a central role in institutional operations and strategic planning. Thematic analysis identified three interrelated sub-themes that illustrate the evolving landscape of educational management in the AI era: (1) Real-Time and Data-Driven Decision Making, (2) AI Integration into Administrative Services, and (3) Data-Driven Planning and Forecasting. These sub-themes developed through iterative coding, are presented in Table 3.

Table 3. Codebook for Theme "Reflections of AI on Management Process in Distance Education"

Main Theme	Sub-theme	Codes	Participants
Reflections of AI on Management Processes in Distance Education	Real-Time and Data-Driven Decision Making	Real-time data access in managerial decisions; Pattern-based AI decision support, Real-time performance tracking	Ahmet, Ufuk
	AI Integration into Administrative Services	AI-supported administrative service design; Process automation and workload reduction; Automation of operational management; Shift from task execution to strategic management	Esra, Asim, Emre, Can
	Data-Driven Planning and Forecasting	Behavioral analytics in planning; Transparency and traceability in data flow	Nur, Ferhat

Real-Time and Data-Driven Decision Making

A defining reflection of AI in distance education management is the widespread shift toward real-time, data-informed decision-making. Faculty members frequently described how AI tools enable continuous monitoring of learner behaviors, provide predictive insights, and support prompt institutional responses. This marks a departure from traditional models based on retrospective data or managerial intuition.

> *"We no longer wait for midterm results to understand student progress. AI systems give us real-time alerts based on student activity data, so we can reach out to struggling students almost immediately rather than waiting until the damage is done."* (Ufuk, Associate Professor)

Participants also emphasized that this shift has allowed institutions to move from reactive problem-solving to proactive academic support. Ceyhun noted the pedagogical value of real-time insights:

> *"When we act based on live feedback, it's not just managerial, it directly improves student retention. The system flags students who haven't logged in for five days or who fail a quiz twice, and we follow up immediately."* (Ceyhun, Professor)

Several faculty members linked this real-time approach to institutional accountability and strategic planning. Ahmet explained how AI dashboards altered how leadership thinks about academic risk:

> *"AI makes it possible for us to act immediately, not retrospectively. We intervene before students fall too far behind. It has also changed how we think about dropout rates… We now track signals weekly, not just at the end of the term."* (Ahmet, Professor)

AI Integration into Administrative Services

Participants emphasized that artificial intelligence has modified the implementation of routine administrative tasks within distance education institutions. AI systems now manage key functions such as exam scheduling, resource allocation, automated messaging, and proctor assignments, roles previously reliant on manual input. This automation was viewed not only as a means of increasing efficiency but also as a way to reduce human error and standardize service delivery.

> *"Scheduling exams, assigning proctors, and even sending reminders…these are all handled by automated systems now. What used to take days now happens in minutes."* (Emre, Associate Professor)

Faculty members also pointed out that automation created more space for strategic thinking. By shifting routine tasks to AI tools, they could focus on long-term goals, innovation, and pedagogical improvements.

> *"Routine tasks that were once performed manually are now delegated to AI tools, leading to time savings and reduced human error. More importantly, it gives us space to think beyond the immediate"* (Can, Assistant Professor)

This change was described as a deeper transformation in organizational logic rather than a simple increase in efficiency. As one faculty member stated, the reorganization of people orientation was part of a broader evolution in leadership responsibilities.

> *"When AI is on repetitive tasks, managers are on strategic decisions instead of micromanagement. It's not about replacing people, it's about upgrading what people focus on."* (Tezcan, Associate Professor)

Some participants also highlighted how automation increases transparency and minimizes subjectivity in administrative processes such as grading timetables and announcement calendars. The consistency of automated workflows was found to contribute to organizational fairness and reliability.

Data-Driven Planning and Forecasting

Beyond immediate operations, participants discussed how AI tools are becoming important in long-term corporate planning. Faculty members reported that predictive analytics are now being incorporated into decision-making processes related to enrollment forecasting, resource allocation, and academic risk monitoring. With the help of AI-generated trend reports, they can anticipate organizational needs rather than reacting to problems later.

> *"The process of planning in our institution has become much more systematic. We guide decisions using trend analysis and projections generated by AI tools. For example, last year, we predicted an increase in enrollment and staffed accordingly."* (Bora, Professor)

AI was also credited with improving responsiveness to student needs. Several faculty members mentioned that they now adjust support structures, such as academic advising, based on data about engagement levels and learning behavior.

> *"AI allows us to forecast enrollment patterns and even anticipate student dropout risks based on behavioral data. We now plan advisor loads according to these predictions."* (Nur, Associate Professor)

Some participants also pointed out that this new reliance on predictive data challenged traditional notions of expertise. Decision-making was no longer based solely on years of experience but increasingly on how well one could interpret and respond to algorithmic insights.

Transformation of Leadership Roles in the Context of AI

Addressing the second research question "What are the views of these faculty members on the transformation of leadership roles in distance education management in the context of artificial intelligence?", the findings revealed a significant redefinition of leadership in AI-integrated educational environments. Faculty members emphasized that leadership today demands not only strategic vision and adaptability but also empathetic faculty engagement and ethical responsibility. Thematic analysis identified three interrelated sub-themes: (1) Strategic and Adaptive Leadership, (2) Faculty Engagement and Mentorship, and (3) Human-Centered and Ethical Leadership (see Table 4).

Table 4. Codebook for Theme "Transformation of Leadership Roles in the Context of AI"

Main Theme	Sub-theme	Codes	Participants
Transformation of Leadership Roles in the Context of AI	Strategic and Adaptive Leadership	Vision-building for AI integration; Adaptive decision-making under uncertainty; Leading institutional innovation	Esra, Ahmet, Emre, Asim, Ufuk, Tankut, Tezcan
	Faculty Engagement and Mentorship	Supporting faculty in AI adoption; Shifting from supervision to mentorship; Overcoming resistance to change	Ceyhun, Emre, Can, Esra, Nur, Ahmet, Tankut
	Human-Centered and Ethical Leadership	Preserving academic ethics; Ensuring human oversight in AI decisions; Maintaining relational leadership	Nur, Ferhat, Ufuk, Asim, Esra, Ahmet

Strategic and Adaptive Leadership

Participants emphasized that in the AI age, leadership requires a forward-looking orientation, the ability to make decisions under uncertainty, and a commitment to driving innovation. Faculty members reported a shift from reactive and procedural leadership toward proactive and strategic thinking. Setting a vision for AI integration, anticipating institutional change, and rapidly adjusting strategies were frequently cited as core aspects of their evolving roles.

> *"Previously, our job was to maintain stability... Now it's about being comfortable with instability. With AI, things change rapidly. As a leader, you need to have a clear vision but also be flexible enough to adjust that vision every few months."* (Ahmet, Professor)

Participants also noted that decision-making increasingly involves navigating uncertainty with limited information.

> *"We're no longer operating with clear answers. Sometimes, you just have to decide based on probabilities and incomplete data. Leadership in the AI era means accepting that and still moving forward decisively."* (Asim, Professor)

This form of adaptive leadership was often described as a learning process, where faculty members had to navigate rapid implementation without complete institutional readiness. Rather than relying solely on past experiences, participants highlighted the need to experiment, adjust quickly, and embrace uncertainty as part of their leadership role.

> *"We were implementing systems that no one had full experience with. As a leader, I had to accept that I was learning with everyone. This weakness was difficult at first, but it built trust."* (Emre, Associate Professor)

Some participants noted that adaptive leadership in the context of AI requires ongoing flexibility because organizational plans must change frequently in response to rapidly evolving systems and predictive outcomes. They stated that traditional, fixed leadership strategies are no longer valid and that decision-making processes must be fluid, responsive, and informed by emerging data trends. This constant readjustment was defined not as a limitation but as a new leadership competency. Leaders are expected to anticipate future challenges before they arise, respond quickly to unexpected situations, and provide guidance to their teams through uncertainty with a mindset rooted in agility and innovation.

Faculty Engagement and Mentorship

A significant change in leadership dynamics is closely related to how faculty members interact with other faculty members in the digital transformation process. Instead of implementing top-down directives, participants described a shift toward mentoring and collaboration. Faculty members highlighted the need to build trust, provide both pedagogical and emotional support, and actively involve faculty in AI-related changes.

> *"We stopped talking about compliance and started talking about collaboration. Faculty need to feel like they are part of the change, not just the subject, which listening, guiding, and sometimes standing by as they try."* (Esra, Professor)

Many faculty members described how they now take on the role of coach, spending one-on-one time with faculty to introduce AI tools and encourage experimentation. Instead of pushing adoption, they modeled possibilities, building capacity through dialogue rather than pressure.

> *"Resistance to change isn't ignorance, it's fear. When we support rather than pressure, faculty is far more open. It's about removing the anxiety, not increasing the workload."* (Can, Assistant Professor)

This relational approach was seen as vital to overcoming hesitation and creating psychological safety. Faculty members emphasized the emotional labor involved in change processes, and the importance of showing vulnerability and empathy.

> *"They look to you and wonder: if you, as a leader, don't know how to use these tools, how can you ask them to try? So, I learned openly, made mistakes publicly, and told them that was okay. That shifted everything."* (Ceyhun, Professor)

Others also emphasized that leading with empathy, acknowledging faculty concerns about relevance, replacement, and workload, was essential in building a sustainable culture of innovation. Mentorship in this context was not only about skills, but about human connection.

Human-Centered and Ethical Leadership

Beyond technical competence and strategic foresight, participants underlined a profound need for ethical and relational leadership in AI-integrated environments. As institutions increasingly rely on algorithms for decision-making, faculty members expressed concern about maintaining fairness, empathy, and human judgment in leadership practices.

> *"We use predictive models now, sure. But I always remind my team: the numbers don't know the whole story. A student's struggle can't always be seen in the data. That's where we, as humans, come in."* (Ufuk, Associate Professor)

Some also shared examples where they consciously intervened against AI-generated suggestions to honor students' personal circumstances, underscoring their ethical responsibility to lead with care.

> *"There was a case where the AI flagged a student for likely dropout. But I knew she had just gone through a personal loss. I overrode the decision. That wasn't just managerial, it was ethical."* (Ferhat, Associate Professor)

Concerns were also raised about emotional distancing, both from students and from colleagues, as AI systems streamline processes. Participants emphasized that while automation brings efficiency, it cannot replace trust, presence, or accountability.

> *"It's tempting to let the system decide. But we are still accountable. Ethical leadership is saying: we'll use AI, but we won't hide behind it."* (Asim, Professor)

In summary, this theme reflects the complex demands of leadership in an AI-driven context: blending vision with vulnerability and leveraging technology while preserving the human core of educational institutions.

Technology Integration in Distance Education Institutions

Addressing the third research question, "What are their perspectives on technology integration in distance education institutions during the age of artificial intelligence?", the findings revealed that faculty members view AI integration as a multifaceted process, extending beyond technological upgrades to encompass systemic, logistical, and human-centered considerations. While most faculty members expressed optimism regarding the pedagogical potential of AI technologies, they also emphasized the infrastructural, operational, and equity-related challenges that shape its implementation. The analysis emerged three sub-themes: (1) AI-Enhanced Learning and Assessment Systems, (2) Institutional Infrastructure and Readiness, and (3) Logistical and Operational Integration Challenges (see Table 5).

Table 5. Codebook for Theme "Technology Integration in Distance Education Institutions"

Main Theme	Sub-theme	Codes	Participants
Technology Integration in Distance Education Institutions	AI-Enhanced Learning and Assessment Systems	Automated grading and adaptive testing; NLP-based evaluation of student responses; AI-driven content customization	Tankut, Can, Bora, Ferhat, Ufuk
	Institutional Infrastructure and Readiness	Platform scalability; Budget and procurement issues; Technical support availability	Tezcan, Asim, Nur, Ufuk, Emre
	Logistical and Operational Integration Challenges	System interoperability; Maintenance burdens; Uneven access to digital tools	Emre, Bora, Nur, Can

AI-Enhanced Learning and Assessment Systems

The findings indicated that faculty members perceive AI as a powerful enabler of scalable, personalized, and efficient learning and assessment practices in distance education. Automated grading systems, adaptive testing, and AI-based content recommendations were widely seen as tools that reduce instructor workload while enhancing student experience. Faculty members highlighted that these tools allow for more timely feedback and individualized learning pathways, which are otherwise difficult to achieve in large-scale open education environments. Adaptive testing was described by one respondent as a major breakthrough that increased student engagement by matching question difficulty to performance levels:

> *"Adaptive testing was a breakthrough. Students' exposing to questions tailored to their performance level help to reduce anxiety."* (Tankut, Associate Professor)

Others have pointed to the increasing feasibility of using natural language processing (NLP) to assess open-ended tasks, stating that it makes it possible to maintain depth in assessment without straining teaching capacity:

> *"We have automated systems for grading essays at present. This was unthinkable previously because of the scale of the record. NLP makes it possible without sacrificing too much depth."* (Ferhat, Associate Professor)

AI-based recommendation systems were also seen as an essential development in learner support, offering customized resources in real time:

> *"Personalized content propositions are one of the most impactful aspects of AI use. The system identifies weak points and recommends targeted resources, a process no human could do in real time for thousands of students."* (Bora, Professor)

Overall, participants viewed these technologies not merely as operational tools but as transformative mechanisms for instructional innovation in distance education).

Institutional Infrastructure and Readiness

Despite widespread enthusiasm for AI-enhanced learning tools, faculty members consistently pointed to critical infrastructure gaps that challenge their effective implementation. A major concern was the limited scalability of existing platforms, particularly when serving large student populations in open education systems. Institutions often lacked the technical capacity to process real-time data at scale, which impeded the full deployment of AI-powered analytics and automation.

> *"Scalability is a major issue. Our servers weren't built for real-time data exchange across thousands of students."* (Tezcan, Associate Professor)

In addition to technical limitations, budgetary constraints were frequently cited. Faculty members explained that even when institutional support for AI existed, rigid procurement systems and insufficient funding delayed or prevented the acquisition of necessary upgrades.

> *"Even if the will is there, the budget often isn't. We have procurement rules that delay acquiring even basic updates."* (Nur, Associate Professor)

These limitations not only slowed down progress but also caused frustration among leadership teams, who often had to deliver technological innovation under resource-constrained conditions. The disconnect between institutional expectations and the actual capacity to support AI tools created a sense of working with inadequate means.

> *"We're doing innovation with duct tape. Everyone expects results, but the foundational infrastructure is fragile."* (Emre, Associate Professor)

Collectively, these reflections underscore that the success of AI integration depends not just on adopting new technologies but on aligning them with sustainable infrastructural planning, flexible administrative systems, and sufficient resourcing.

Logistical and Operational Integration Challenges

The findings reveal that in addition to infrastructure limitations, there are persistent logistical and operational hurdles in the daily implementation of AI technologies in distance education institutions. Participants reported that AI tools are often used to increase efficiency, but their integration often creates additional layers of complexity across enterprise systems. Many of these tools did not streamline workflows but instead disrupted existing routines or required significant manual oversight.

The most challenging issue is being able to work within existing learning management systems (LMS) using artificial intelligence platforms. Participants described how technical incompatibilities between systems required manual data transfers, duplicated effort, and staff who lacked sufficient training.

> *"AI tools don't always talk to our LMS. We still have to manually transfer data or rely on staff who aren't trained for these systems."* (Emre, Associate Professor)

Beyond software-level integration, participants highlighted the hidden technical burden of maintaining AI systems. Routine system updates, bug fixes, and data alignment tasks fell heavily on institutional IT teams, many of whom were already stretched thin.

> *"We spend more time managing the integration than benefiting from it. Operationally, it's like adding another layer to every process."* (Can, Assistant Professor)

Equity concerns were also emphasized throughout participant narratives. Several faculty members stressed that effective AI use assumes a baseline level of digital access and fluency, conditions not equally available to all users. Disparities in hardware availability, internet connectivity, and digital literacy continued to affect both faculty and students, particularly in geographically diverse or under-resourced areas.

> *"We talk about digital transformation, but we forget some people don't even have the tools to participate equally. That's not just a tech issue. It's a justice issue."* (Nur, Associate Professor)

These insights show that logistical integration is not just a technical matter, but an institutional challenge that demands inclusive planning, adequate support systems, and cross-unit coordination. Without proper investment in training, technical assistance, and equitable access, AI may deepen existing gaps or introduce new operational issues.

In short, effective AI implementation in distance education depends on more than infrastructure and it requires attention to everyday realities and a commitment to making systems usable, accessible, and supportive for all users.

Management of Teaching and Learning Processes in the Age of AI

Addressing the fourth research question, "How do they perceive the management of teaching and learning processes in distance education institutions during the age of artificial intelligence?", the findings revealed that AI has led to fundamental shifts in how teaching and learning are managed. Thematic analysis revealed three interrelated sub-themes: (1) Personalized and Predictive Learning Management, (2) Assessment and Feedback Transformation, and (3) Student Engagement and Academic Support (see Table 6).

Table 6. Codebook for Theme "Management of Teaching and Learning Processes in the Age of AI"

Main Theme	Sub-theme	Codes	Participants
Management of Teaching and Learning Processes in the Age of AI	Personalized and Predictive Learning Management	AI-driven learner profiling; Recommendation systems for content; Predictive analytics for early intervention	Ufuk, Bora, Nur, Ferhat, Ceyhun, Tankut
	Assessment and Feedback Transformation	Automated feedback; Adaptive evaluation models; NLP-supported essay analysis	Can, Tankut, Ferhat, Ufuk
	Student Engagement and Academic Support	Tracking learner engagement; Alert systems for at-risk students; Scalable student support mechanisms	Emre, Tezcan, Nur, Ahmet

Personalized and Predictive Learning Management

Participants highlighted that AI has significantly enhanced the ability to personalize instruction by identifying students' learning patterns and anticipating their needs. Through learner profiling and predictive analytics, institutions can intervene before fallbacks or failures. This shift was especially valuable in large-scale, open-access settings, where individualized support is otherwise difficult to provide.

> *"The system distinguishes students' patterns, how they learn, where they struggle, and then adapts accordingly. That kind of tailored backup simply wasn't possible before."* (Ufuk, Associate Professor)

Several faculty members also emphasized that AI-powered recommendation systems enable targeted content delivery, aligning resources with each student's performance and preferences.

> *"We now use predictive analytics to identify which students are likely to drop out or fail. This allows us to intervene proactively, rather than reactively."* (Nur, Associate Professor)

> *"AI allows us to create a dynamic learning path. If a student performs well, they get more advanced content; if not, they're redirected to foundational resources. It's like adaptive tutoring at scale."* (Bora, Professor)

Overall, AI-driven personalization was viewed not only as a technological innovation, but as a pedagogical necessity that enhances both learning equity and instructional efficiency.

Assessment and Feedback Transformation

Another major transformation involved the integration of AI into assessment and feedback mechanisms. Faculty members discussed how automated evaluation tools and NLP-based systems streamline grading, increase consistency, and offer timely feedback, particularly beneficial in high-enrollment environments.

> *"With thousands of essays submitted, manual feedback was never realistic. Now, NLP tools provide preliminary feedback, and instructors step in where nuance is required."* (Ferhat, Associate Professor)

Participants also appreciated how adaptive assessments adjust question difficulty in real time, giving a more accurate measure of student performance.

> *"The adaptive nature of the assessment tools allows us to vary the difficulty level in real time. It gives a more accurate picture of the learner's progress."* (Tankut, Associate Professor)

In addition, faster feedback loops were seen as contributing to student motivation and engagement, supporting a more formative and self-regulated learning experience.

> *"Feedback is no longer delayed. Students now get immediate insights into their performance, which motivates them to act… that loop used to take weeks."* (Can, Assistant Professor)

Despite these benefits, participants stressed the need for maintaining human oversight to ensure feedback remains pedagogically meaningful and ethically sound.

Student Engagement and Academic Support

Participants also described how AI tools have transformed their ability to monitor and support student engagement. Real-time tracking and alert systems were credited with enabling early intervention for at-risk students and improving retention outcomes.

> *"We no longer wait for final exam failures to know something is wrong. The system alerts us after just a few missed logins or low activity. That's a game-changer."* (Emre, Associate Professor)

However, they cautioned that these systems must be embedded within supportive institutional frameworks to be effective. Automated alerts, they emphasized, need to be followed by meaningful human response.

> *"When the dashboard shows red flags, we follow up, not with punishment, but with support. That's what academic care looks like now."* (Tezcan, Associate Professor)

> *"The beauty of AI is not just identifying problems but identifying them quickly enough to intervene while there's still time to help."* (Ahmet, Professor)

Across responses, there was strong consensus that AI-enabled engagement systems have shifted management practices from reactive to preventive, and from generic to individualized, fostering a more responsive and student-centered learning environment.

DISCUSSIONS AND CONCLUSION

During and after the COVID-19 pandemic, digital technologies became common all over the world and began to be used much more in all institutions of society. As education, one of the fundamental organisations guiding society, cannot maintain its existence independently of digital technologies, gradually developing digital technologies have also begun to be used more in educational institutions after the pandemic. When the issue is addressed specifically related to higher education institutions, this process has also required structural and managerial changes (Petti et al., 2025).

The integration of AI into higher education institutions includes new dynamism to the roles of these institutions in society. Making teaching and learning processes more effective and providing students with multiple innovation by adopting technology culture are among the fundamental samples of these new roles. In addition, AI necessiates approaching the management processes of higher education institutions with a different and innovative viewpoint (Ocen et al., 2025).

Competitiveness in the global knowledge economy requires universities to ongoing renew and develop their distance education services. In AI age, not only physical resources but also their knowledge management processes in universities is becoming increasingly significant. By the help of AI making knowledge management more efficient, distance education institutions can both satisfy the quality education expectations of students and provide new opportunities to improve the quality of education they have. These developments make the management of distance education and e-learning processes in AI age an even more critical issue (Atanasova, 2024).

Through the digital transformation process, higher education institutions are experiencing a transformation from traditional organizational structures toward network-based digital university types which is an uneasy transition and gradually process along with the development of new technologies. This situation requires developing more innovative and modern viewpoint for higher education management. Thanks to digital transformation, access to information has expanded, and through the integration of AI technologies into management processes, universities have acquired important advantages in meeting social expectations (Sułkowski, 2023).

This study was conducted to explore how artificial intelligence (AI) is reshaping the management of distance education institutions through the perspectives of faculty members with administrative experience. Guided by four research questions, the findings were organized into the following themes: (1) Reflections of AI on Management Processes in Distance Education, (2) Transformation of Leadership Roles in the Context of AI, (3) Technology Integration in Distance Education Institutions, and (4) Management of Teaching and Learning Processes in the Age of AI.

The first theme revealed that AI is altering how decisions are made in distance education settings. Faculty members described a clear move toward real-time, data-informed, and predictive decision-making processes. These observations are in line with previous studies highlighting the potential of AI to improve operational efficiency and predictive capabilities (Feng & Li, 2024; Firat, 2023). However, this study offers a more literal viewpoint by remarking challenges regarding execution that are encountered at the institutional level, such as inadequate infrastructure and strategic mismatch. While previous studies such as Kamalov et al. (2023) and Khedrane (2024) generally acknowledge structural barriers, the current findings offer context-specific insights from faculty members who experience these issues firsthand.

The second theme concentrated on leadership roles being reformed in the AI era. The need for more strategic, adaptable, and ethically sensitive leadership approaches was emphasized by faculty members. It has been observed that there is a switch from top-down management to roles that underline vision setting, mentoring and people-centered decision-making processes. These findings are in line with the arguments of Karakose & Tulubas (2024) and Langeveldt (2024) emphasizing the importance of agility and ethical sensitivity in educational leadership. More importantly, this study makes a novel contribution to the literature; it transcends conceptual dialogues by exposing how leaders personally negotiate uncertainty and emotional labor, especially in large-scale distance education settings.

The third theme examined how AI technologies are incorporated into enterprise systems. While participants acknowledged the benefits of automated grading, adaptive assessments, and personalized content delivery (Baidoo-Anu & Ansah, 2023; Firat, 2023), they also noted rigid barriers such as budget restrictions, outdated infrastructure, and integration issues. These concerns are consistent with the criticisms expressed by Bozkurt & Sharma (2023) and Kamalov et al. (2023), but this study adds more depth by categorizing these issues into infrastructure and operational-level themes. It is emphasized that the success of AI integration depends not only on technical readiness, but also on sustained institutional support and equitable implementation capacity. In parallel, it is emphasized by Gocmez (2023) that institutional readiness plays a critical role in the institutional adoption of artificial intelligence in open and distance education. Her findings suggest that financial constraints, a shortage of trained personnel, and difficulties in developing a corporate culture open to AI are among the most significant obstacles. Further complicating the adoption process are the influence of organizational size, leadership vision, and internal stakeholder attitudes, particularly resistance stemming from fear, digital illiteracy, or unfamiliarity. These views accentuate the need for holistic strategies that address infrastructure and technology as well as corporate culture, stakeholder readiness and strategic leadership alignment.

Although participants discussed various AI applications—such as automated grading tools, NLP-based evaluation systems, and adaptive testing—they tended to do so from a practical and experiential perspective. The data revealed limited insight into the technical architecture, algorithmic logic, or backend integration of these tools, likely due to the participants' professional roles as faculty administrators rather than system developers or IT specialists. Thus, while the findings offer valuable reflections on perceived functionality and institutional implementation, they do not provide in-depth technical descriptions. Acknowledging this boundary highlights the study's focus on lived institutional realities over technical or engineering analysis.

The final theme dealt with AI's impact on teaching and learning management. It's reported by faculty members that AI has enabled more personalized and proactive learning environments, consistent with studies highlighting the benefits of tailored instruction and real-time feedback (Chen, 2023; Sibarani, 2025; Tuczynski, 2024). However, concerns about the ethical implications of predictive analytics and the need for scalable support systems were also noted by them. In contrast to many student-centered studies, this study focuses on the institutional coordination needed to execute AI-driven pedagogy and provides a more comprehensive perspective on what sustainable innovation means in practical terms.

In sum, according to the findings, AI integration into distance education is a complex and context-sensitive process. Its benefits are not uniform or repetitive; rather, its impact is shaped by institutional infrastructure,

leadership responses, and the ability to balance technological innovation with human values. This study maintains a cautiously optimistic view of AI's potential in education, while also acknowledging the practical perspectives of those leading the transformation. By highlighting faculty perspectives and focusing on institutional dynamics, the study offers a broader understanding of AI's impact on educational management systems—particularly those operating at the intersection of systemic structure and human behavior. Furthermore, it reinforces the need for ethical, inclusive, and context-aware approaches to AI integration in education. (Bozkurt & Sharma, 2023; Elsherif, 2024; Milton & Al- Busaidi, 2023).

Implications, Limitations, and Directions for Further Research

This research provides both practical and theoretical perspectives on the influence of AI on the management of distance education institutions. The study findings point out a growing need for educators to acquire advanced skills—such as data-driven decision-making, responsible stewardship, and digital strategy development—AI deepens its grounds in educational frameworks. The fundamental strength of these strategies is proclaimed not just on the spending on advanced systems but also on the development of human capital to assure that there is concordance between innovation and the institutional culture and educational objectives.

However, as the findings indicate, institutions face ongoing infrastructural and operational challenges in integrating AI, including limited technological capacity, fragmented digital systems, and insufficient staff readiness. Addressing these challenges requires a more strategic and coordinated approach. To enhance institutional capacity for AI integration, practical solutions should include the development of modular and scalable systems compatible with existing platforms, as well as the formation of cross-functional AI coordination units to ensure alignment between infrastructure and pedagogical objectives. Pilot implementations in sandbox environments can allow for gradual adaptation without disrupting daily operations. Furthermore, flexible procurement models and strategic funding partnerships, particularly for resource-constrained institutions, can help overcome budgetary and logistical bottlenecks. These steps can increase not only the technical efficiency of AI systems but also their usability and relevance across different levels of educational practice.

Institutions should align their technological investments with pedagogical priorities by fostering collaboration between administrative, technical, and academic units. Providing structured and continuous professional development opportunities, particularly on the ethical and instructional dimensions of AI, is also essential. Securing sustainable funding mechanisms and piloting new tools in controlled environments can further support a smoother and context-sensitive integration process.

This study has its drawbacks. It has investigated only one public open education faculty in Turkiye, which restricts the generalizability of the results to other institutional contexts or sociocultural settings. The necessary data saturation has been achieved through interviews with twelve faculty members; however, the inclusion of more participants from different disciplines, roles, and geographic areas would have enhanced the findings. Moreover, some arguments might fall behind current developments, in AI technologies, due to the rapid evolution of these tools and practices.

Further study could build upon these findings by investigating the impact of differing sociocultural frameworks and policies on the use of AI in education at the deeply rooted institutional levels. Comparative studies across different institutions or countries would help identify common challenges, shared patterns, and context-specific challenges. The development of AI technologies within changing educational infrastructures, leadership styles, and pedagogics shifts could be further deepened through longitudinal approaches. Including other educational stakeholders, such as the teaching staff, the learners, the policymakers, and the technical staff, would aid in broadening the perspectives about the institution dynamics influencing AI adoption in education.

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APPENDIX

Interview Questions

1. What do you think about the change that AI era imposed on the administrative procedures of distance education organisations?
2. What do you think about the leadership roles which managing directors of distance education organisations have in the AI era must be reflected during the administrative praxes? Could you briefly explain?
3. Could you please detail your opinions on the integration of novel technologies developed in the age of artificial intelligence into distance learning organisations?
4. What do you think about the role artificial intelligence technologies play during the supervision of education and training procedures? What contributions do they provide to these operations? Please describe in short.