The Necessary Competencies for Leaders of Islamic Educational Institutions in Light of the Requirements of Artificial Intelligence

إعداد

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Abstract

The study explores the critical role of leadership competencies in Islamic educational institutions in the context of the artificial intelligence (AI) era. It emphasizes that as educational landscapes rapidly transform due to technological advancements, particularly AI, leaders must adapt by acquiring specific skills and knowledge to navigate these changes effectively.It discusses how AI technologies are reshaping educational practices, enabling more personalized learning experiences and efficient administrative processes. However, it also highlights the challenges that come with these advancements, such as ethical considerations and the need for infrastructure improvements.It identifies essential competencies for leaders in Islamic educational institutions, including visionary leadership, ethical coaching, negotiation skills, and the ability to foster innovation. These competencies are crucial for effectively integrating AI into educational frameworks while aligning with Islamic values.The study aims to understand how AI is currently utilized in education, assess its implications for leadership, and recommend strategies for developing necessary competencies among leaders in Islamic educational institutions. It notes that while AI presents significant opportunities for enhancing educational outcomes, it also poses risks related to ethical use and the potential for exacerbating existing inequalities in access to technology.It emphasizes the importance of integrating Islamic principles into the adoption of AI technologies, ensuring that educational advancements do not compromise ethical and moral standards.In conclusion, the study underscores the urgency for leaders in Islamic educational

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institutions to cultivate a robust understanding of AI›s implications and develop competencies that will enable them to guide their institutions through this transformative period effectively.

Key words: The Necessary Competencies for Leaders - Islamic Educational Institutions- Requirements of Artificial Intelligence

الكفاءات الضرورية لقيادات المؤسسات التعليمية الإسلامية في ضوء متطلبات الذكاء الاصطناعي

الملخص

تستكشف الدراسة الدور الحاسم للكفاءات القيادية في المؤسسات التعليمية الإسلامية في سياق عصر الذكاء الاصطناعي. وتؤكد الدراسة على أنه مع التحول السريع في المشهد التعليمي بسبب التطورات التكنولوجية، لا سيما الذكاء الاصطناعي، يجب على القادة التكيف من خلال اكتساب مهارات ومعارف محددة للتعامل مع هذه التغييرات بفعالية، وتناقش الدراسة كيف تعيد تقنيات الذكاء الاصطناعي تشكيل الممارسات التعليمية، مما يتيح تجارب تعليمية أكثر تخصيصًا وعمليات إدارية أكثر كفاءة. ومع ذلك، فإنه يسلط الضوء أيضًا على التحديات التي تأتي مع هذه التطورات، مثل الاعتبارات الأخلاقية والحاجة إلى تحسين البنية التحتية، ويحدد الكفاءات الأساسية للقادة في المؤسسات التعليمية الإسلامية، بما في ذلك القيادة ذات الرؤية الثاقبة والتدريب الأخلاقي ومهارات التفاوض والقدرة على تعزيز الابتكار. هذه الكفاءات ضرورية لدمج الذكاء الاصطناعي بفعالية في الأطر التعليمية مع التوافق مع القيم الإسلامية، وتهدف الدراسة إلى فهم كيفية استخدام الذكاء الاصطناعي في التعليم حاليًا، وتقييم آثاره على القيادة، والتوصية باستراتيجيات لتطوير الكفاءات اللازمة لدى القادة في المؤسسات التعليمية الإسلامية. وتشير الدراسة إلى أنه على الرغم من أن الذكاء الاصطناعي يقدم فرصًا كبيرة لتعزيز المخرجات التعليمية، إلا أنه ينطوي أيضًا على مخاطر تتعلق بالقيم الأخلاقية، تشير الدراسة إلى أنه على الرغم من أن الذكاء الاصطناعي يوفر فرصًا كبيرة لتعزيز المخرجات التعليمية، إلا أنه ينطوي أيضًا على مخاطر تتعلق بالاستخدام الأخلاقي وإمكانية تفاقم أوجه عدم المساواة القائمة في الوصول إلى التكنولوجيا، وتؤكد الدراسة على أهمية دمج المبادئ الإسلامية في تبني تقنيات الذكاء الاصطناعي، وضمان عدم مساس التطورات التعليمية بالمعايير الأخلاقية

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والمعنويــة، وفي الختــام، تؤكد الدراســة على الحاجة الملحــة للقادة في المؤسســات التعليمية الإســلامية إلى تنمية فهم قوي للآثــار المترتبة على الــذكاء الاصطناعي وتطوير الكفــاءات التي ســتمكنهم من توجيه مؤسســاتهم خلال هــذه الفترة التحويليــة بفعالية.

الكلمــات المفتاحيــة: الكفــاءات اللازمــة للقيــادات - المؤسســات التعليميــة الإســلامية - متطلبــات الــذكاء الاصطناعــي

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1. Introduction

Over the past few years, the educational landscape can be seen transforming as rapidly as the ICT developments. The emergence of the World Wide Web, the introduction of elearning, online learning, blended learning, or m-learning, produced challenges for educational institutions (Aliabadi et al., 2023). Now, the newest generation of AI (Artificial Intelligence)-based educational applications is one of the latest technological advances. ChatGPT (Chabot Generative Pre-trained Transformer), and bards, along with many other similar applications, have entered the educational arena. Unlike traditional search engines or structured, digitized, information-rich databases, these generative AI applications could rather provide text, images, or sound based on natural language processing and understanding. This substantial volume of data and information queries could be explored, presented, interpreted, analyzed, or concluded in a way similar to humans. On the other hand, as learning managers, teachers, instructional designers, and academic leaders, the understanding, exploring, and adopting ChatGPT, or similar applications within the learning context, which has appeared as a recent technical advance, do not seem easy and straightforward (Ferreira Mello et al., 2023). The global academic education needs and requirements in line with AI developments need to be well understood and adopted. And here lies a significant challenge for school leaders in educational institutions. From the Islamic perspective, in addition to being effective leaders, administrators, or "amil," Muslim leaders also need to possess Islamic holistic capital that needs to be encouraged and developed through Islamic rules. Therefore,

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this study is intended to explain the necessary holistic Islami leadership competencies in relation to the global education advancement on AI in the context of Islamic education.

1.1. Background and Rationale

The rapid research and development of Artificial Intelligence (AI) technology during the fourth industrial revolution era has broadly transformed education. Technology plays an essential role in education, especially during the pandemic of COVID19-. Schools have gone digital. The most prominent of these technologies is artificial intelligence and machine learning. The impact of technology on education is developing it toward a more inclusive experience, through AI tools and platforms. Realizing the essential function of education, technology at all levels must involve a more robust concept of human-centric education (Luis Martín-Núñez et al., 2023).

AI has great potential to transform education. Educational needs are different across countries and regions, particularly in developing countries. Using AI for education requires significant investment in infrastructure, devices, and broadband internet, which brings challenges to experience- and knowledge-scarce communities. Educational resources using AI should be designed to fit the need of educational gaps across countries and regions. The significant development of technology within Islam educational institutions (IEIs), including Islamic boarding schools, Madrasas, and universities, such as the use of several communication applications and the internet, should be supported by the leaders' initiative to ensure the implementation of the technology alignment with the Islamic values (Aliabadi et

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al., 2023). In this regard, leaders of educational institutions shall have at least competencies on Artificial Intelligence issues.

1.2. Research Aim and Objectives

The overall aim of the research is to identify the necessary competencies for leaders of Islamic educational institutions in light of the requirements of artificial intelligence (AI) ،and sub objectives are:

- To understand how artificial intelligence is currently being utilized in educational settings and its impact on educational leadership.
- To explore the potential benefits, challenges, and risks associated with AI for educational leadership.
- To identify the essential competencies required for leaders of Islamic educational institutions to effectively lead in the context of AI.
- To make recommendations for developing these competencies among leaders.

By addressing these objectives, the research aims to enhance the understanding of AI›s implications for educational leadership within Islamic educational institutions.

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2. Islamic Educational Institutions: Overview

Islamic educational institutions fill an irreplaceable role in shaping the future leaders of the Muslim community. Such institutions are socially rooted in Muslim communities and form structures through which Muslims often collectively realize the goals of their faith. Islamic educational institutions are tasked by and with the social consent of their constituencies with enacting a vision of the good life based on Islamic principles. Such institutions have the opportunity to meaningfully impact the societies in which they are situated due to their rootedness in Islamic tradition, but also face great challenges. Not only are their very foundations contested by contemporary life, traditional clerical authority is struggling to maintain credibility in the face of ongoing social, political, and technological change. Islamic educational institutions must grasp the opportunities and confront the challenges presented by contemporary life in the public space, seminaries, school, and so.(Mahmuda, 2017). The advent of artificial intelligence presents new challenges and opportunities that Islamic educational institutions must confront. Current artificial intelligence techniques are trained on large data sets to autonomously learn patterns and insights that are at times not easily perceivable by humans. Such patterns may be grasped outside of ethical consideration or reliance on religious traditions. The rapid emergence and growth of artificial intelligence are presently offering opportunities that may be seized for the purposes of social and economic growth, but which may also permanently alter social and moral life in ways that jeopardize humane flourishing. The question remains

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whether artificial intelligence is used to produce technological growth or mass destruction; a positive shaping of social life or its manipulation (Aliabadi et al., 2023).

2.1. History and Evolution

Islamic educational institutions, including national and local madaris, are a major part of the education system in the world, especially in the countries of the South Asia region. These institutions play a determinant role in influencing human thoughts and behaviors, thus constructing leaders of society, in its broader sense. The texts taught in such institutions construct the worldview of the students. As issues arise in the society with regard to the construction of the leaders such as extremism, sectarian wars, terrorism, political conflicts, economic instability, environmental issues, gender issues, among others, these concerns are also reported in the madaris education system. With regard to the gaze on madaris education, it is often under-discussed how madaris education is responding to safeguarding the world, thus focusing on constructive alternatives.

Islamic educational institutions take an active role in thinking critically on major global issues and construct lessons learned for their own educational context. However, the social implications of Artificial Intelligence (AI) from the Islamic perspective are less discussed discourse in the Islamic educational institutions, especially within the South Asia region. Similarly, it is also hardly researched in-depth and inadequate understanding of the role of Islamic educational institutions, nationally or locally, in exploring and deriving a stance on the broader discourse of AI ethics. This article, therefore, explores the opportunities, challenges,

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and role of Islamic educational institutions in the discourse of ethics of artificial intelligence (AI), focusing on the Pakistan context. Adopting qualitative methodology, semi-structured interviews have been conducted with the scholars and leaders of educational institutions. The world of Artificial Intelligence (AI) is rapidly evolving, and its societal implications are ushering new challenges. The religious educational institutions generally considered as an environment of conservative thought and pedagogy were also the location where the discussion on new technological developments emerged, such as pulp printing press and audiovisual communication.

2.2. Current Challenges and Opportunities

Changes in information and communication technology have affected every aspect of life, including education. Education is one of the significant social institutions forming a human community. Technological innovations are expected to change the processes of teaching and learning and how educational institutions are managed. As an integral component of the communication and information system, education should replicate changes in further sub-systems in society. Risk could arise if the educational system was not instantaneously changed and proficiently developed in light of the functions of society. Nowadays, the rapid development of artificial intelligence (AI) continuously leads to the debate among the political and educational elites on its impact on humanity, especially the development of future generations (Luan et al., 2020).

In higher education, there is a trend toward radical changes implemented in different educational institutions responding to

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current issues, challenges, expectations, and demands, together with global changes taking place at the local level. In regard to educational institutions as organizations, this means a change of functions: from entities producing educational services (centers for knowledge transfer) to learning organizations (centers of knowledge generation). This transition requires a reciprocal relationship building between educational institutions and their environment in the areas of research, development, innovation, and commercialization. Building a reciprocal and sustained partnership between academia and the education industry is strongly encouraged. It is essential to establish closer cooperation with businesses in realizing products, licensing technologies, and consulting services (Aliabadi et al., 2023).

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3. Artificial Intelligence in Education

Artificial intelligence is the technology that provides the machines the ability for reasoning, decision-making, learning, and problem-solving, so as to resemble human capabilities. AI has immense potential as an educational technology with capabilities to enrich instructional processes for both teachers and learners. AI usage and applications in education systems have great potential to improve teaching and learning of students. AI can gather huge amount of data including the students' past, present and future learning trajectory and this data can be analyzed further to give meaningful insights regarding the learning process of students (R. Kshirsagar et al., 2022). The AI technology can be used to develop intelligent and adaptive learning systems to track and evaluate the learning performance of students. This would enable the educators to understand, monitor and intervene if required, concerning the students' progression. The AI technology can be used both as a guiding and assisting mechanism for improving teaching and learning practices. AI can empower the teachers to provide more personalized and customized instruction to their students. The teachers would act more as facilitators for bridging the knowledge gap of their students. Earlier on, the role of teachers was thought to be influential but now it has been assumed as passive.

The implication of artificial intelligence integration in the teaching and learning context further necessitates the Islamic educational institutions' leaders to be at par with AI infusion. Therefore, they should develop thorough understanding of AI and related technologies, pedagogical issues of AI integration, ethical and

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privacy issues concerning AI, and vigilance concerning fatal risks of AI in education. With this background, it is important to assess the necessary competencies regarding AI technologies and its integration within the teaching and learning context which the Islamic educational institutions' leaders are required to possess (Schiff, 2021). Moreover, to ascertain these competencies and their importance concerning effective infusion of AI in education, ranking was carried out by the concerned authorities comprising Islamic educational institutions' leaders.

3.1. Definition and Scope

Competencies Competencies refer to the knowledge and understanding, attitudes and values, as well as skills, skills, or techniques needed to carry out the duties and responsibilities in a particular field or environment in positions or organizations such as educational institutions, government institutions, military, companies, and others (Johari et al., 2018). Competencies in Islamic educational institutions refer to the knowledge and understanding, attitudes and values, as well as skills or techniques needed to carry out tasks and responsibilities according to the demands of the law of God and in accordance with the moral philosophy of the Islamic educational institutions, the regulations of the Republic of Indonesia (UUD RI), or state and government rules that apply Indirectly, in accordance with the rules, ordinances, and regulations both written and unwritten that live and grow in the environment of educational institutions. Educational institutions are organizations in which there are processes of teaching, training, and teaching on the one hand and receiving knowledge on the other hand (Aliabadi et al., 2023).

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Artificial Intelligence Artificial intelligence can be defined in terms of generality, behavioral feasibility, and human modelling. In broad terms, artificial intelligence is the science and engineering of making intelligent computer programs, that is computer software that can extract or infer information from real-world conditions, such as determining whether images depict a “cat,” “dog,” and so on. In terms of implementation, scientists are developing software systems that exhibit intelligent behaviour, such as expert systems for making medical diagnoses and credit proposals, systems for winning chess games against human champions, and systems that converse in everyday language. In this context, intelligence is defined as the ability to achieve goals in a complex environment. A complex environment is characterised as requiring a wide range of basic capabilities such as working with impure, vague, or uncertain data; perceiving the environment in order to obtain incomplete and changing information; and acting in ways that intentionally change the environment.

3.2. Applications in Educational Institutions

The handling of numerous students in various disciplines and their different learning styles is an issue for higher education institutions globally. At the same time, AI adoption in education will provide virtual learning space opportunities without hindering the educational process (R. Kshirsagar et al., 2022). The online worldwide platform of MOOC learned from real-world projects and the experience of top universities suggested student behavior-based interventions to improve learning performance (continuance intention, engagement, and achievement) in AI-

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computerized tutorials. AI helps professors restrict students› educational engagement and provide constructive educational insights with respect to academic performance prediction. Further, to enhance course quality, the analysis of the contents has focused on consensus management, student engagement, targeted adjustment, dropout prevention, and learning control. Designing an appropriate course setting is essential to adhere to student participation and enable students to interact with contents dynamically. For the concerned topic of flipped and hybrid courses or blended learning (a combination of traditional classes and E-learning), educators or scholars need to analyze the discipline difficulties comprehensively such that deeper insights could be provided to promote the curriculum design (E. August & Tsaima, 2021).

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4. Leadership in Islamic Educational Institutions

The integration of artificial intelligence (AI) in education is becoming a reality, and it is critical to understand the implications for educational leaders. This paper will explore the necessary competencies for leaders of Islamic educational institutions in light of the requirements of artificial intelligence. Using a modified Delphi approach, this study engaged AI experts from the private and public sectors, religious leaders, teachers, and educational administrators to arrive at a consensus on this important issue. The study aims to enrich the literature on AI and education, provide a strategic response to current challenges, prepare future generations for a world transformed by AI, and serve as a guide for Islamic educational institutions in AI adoption.

Islamic educational institutions must adapt to advances in artificial intelligence (AI) in order to prepare students and the community to excel in an AI-driven world. Leaders of these institutions are tasked with identifying challenges, opportunities, and necessary competencies for AI adoption in order to reform education systems. The success of AI adoption depends on leaders' competencies, and a lack of understanding and responsiveness to AI will hinder the competitiveness of Islamic educational institutions. Studies elsewhere highlight the need for educational leaders to have knowledge of emerging technologies to create personalized learning environments, promote technology use in classrooms, lead technology integration, engage with stakeholders and the community, and communicate AI's impact on education. There are similarities between broader educational contexts and Islamic educational institutions, but there are also

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unique challenges and opportunities within the latter.

4.1. Role and Importance of Leadership

Leadership occupies a vital position within Islamic educational institutions as it greatly affects the construction, formulation, and role of outputs. It plays a vital role in the unity and diversity of institutions. The objectives of Islamic institutions are specific and different from other institutions, both at the level of goals flowing from the Qur'an and the Sunnah, and in the policy of narrowing knowledge. The success of educational institutions depends largely on physical facilities such as infrastructure, learning resources, curricula, educational staff, and quality control. Yet, these facilities will be in vain if there is no leadership that is capable of directing the institutions towards the targets and goals that have been planned. Therefore, leadership is at the core and takes precedence over other things in Islamic educational institutions such as schools, madrasas, and boarding schools, because if it is good, it is expected that all components of these educational organizations will also be good (Afshari et al., 2008). In the era of science and technology, leadership takes on a new role to face and respond to the advancement of culture, science, and technology developments. There are new demands that leadership in Islamic educational institutions need to respond to; such as the development of artificial intelligence. The computers, robots, and sophistications brought by artificial intelligence become a double-edged knife for a nation, including their impacts on educational institutions. Visionary, wise, and futuristic leadership is needed.

Artificial Intelligence (AI) is the science and art of creating

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intelligent machines, especially intelligent computer programs. It is the branch of computer science that aims to create intelligent computers and computer programs. Artificial intelligence is the ability of a computer, robot, or other machine to perform tasks usually associated with intelligent beings. Artificial intelligence machines can respond to words as well as impact, solve math problems, and read prose, all done with speed and accuracy compared to humans. The impact of the Artificial Intelligence development is felt by many counseling professionals (NAQVI, 1) .(2017) An increasing number of Computer or Mechatronic Sociologists and Psychological tests that replace the traditional form of the test. With this impact, educational institutions need leaders with certain competencies and qualification; they should understand and have the delineation in leading Islamic educational institutions in the upcoming artificial intelligence era.

4.2. Characteristics of Effective Leaders

The leaders of Islamic educational institutions should have the following characteristics: First, be communicative. As leaders, they are required to convey the vision and mission of the organization both verbally and non-verbally (Obaid.S.Hanan&et,.2023). Therefore, a leader is obliged to have the ability to speak in public and have charisma. Such leaders would be able to influence the personal behavior of members of Islamic educational institutions to improve their performance in such a way that they can achieve the desired goals and objectives. Second, have high integrity. Integrity refers to the actions that follow honesty and moral principles. Faith is also at the heart of an Islamic educational

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institution and should be manifested in the behavior of Islamic educational leaders in leading the institution educationally and professionally. Third, have a participatory managerial style. Participatory leaders are those who prioritize the interests of other people rather than their own interests and consider other people's ideas before making a decision. Educational leaders should involve all elements of the organization to develop the institution. Fourth, encourage creativity and innovation. Creativity refers to the ability to produce something new, while innovation is the successful implementation of an idea that is new or different. Accordingly, a creative leader is able to create new ideas and transform these ideas into actions. In such circumstances, innovative organizations would be able to continuously improve their performance or productivity. Fifth, have a harmonious social relationship network. Good cooperation can make the work smooth and achieve the desired goals. Islamic educational institutions need to build harmonious relationships with parents, students, community leaders, and other Islamic organizations in order to achieve the organization's goals collaboratively (Fauzi, 2018).

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5. Intersection of Leadership and Artificial Intelligence

The emergence of artificial intelligence (AI) technologies has led to profound changes in various sectors. Advanced technologies and the availability of more and better data are fundamentally reshaping business and economic models. Following widening applications of AI in diverse fields, this manuscript examines how AI is reshaping the processes, duties, and responsibilities of leaders (NAQVI, 2017). How might the development and deployment of AI be expected to change the nature of leadership in organizations? Under what conditions AI could be expected to add the greatest value to leadership? What essential skills and competencies ought leaders to have in the artificial intelligence (AI) age? These questions were addressed by investigating the transformational effects businesses might seek from the implementation of AI technologies and how they might reshape the leadership of a corporation and the nature of decision-making in organizations. In addition, it examines the skills and competencies leaders will need to navigate and maximize the opportunities available through the effective adoption and integration of AI. Finally, it discusses the implications policies, procedures, and systems shaping the processes of task allocation. The AI age demands a clear acknowledgement of the nature of the augmentation that technology can and cannot provide, as well as how these new relationships are likely to play out (Aliabadi et al., 2023). The existence of irrational understanding and cognitive biases, which process human delimitation, will not apply to AI systems. Therefore, AI systems have the potential to improve the quality of the information that both leaders and

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organization members receive for decision-making. They can be programmed to identify systematic biases in the human decision-making process or logical errors in reasoning, thus screening unethical biases. AI systems can widen the scope of analysis by searching maximum applicable information, which might even be impossible for humans to analyze. Nonetheless, human leaders will still need to present the requested criteria to consider similarity when assessing a new opportunity or data to augment artificial intelligence. Not only leaders need to be aware that AI technologies are incapable of morality, context, sentiment, and intentionality, but they will also need to acknowledge what those limitations imply for ethical decision-making. Priorities, over the misconception of interaction based on fair game assumptions, can lead to unintentional acts impossible for AI systems to decipher. Therefore, it is imperative to carefully choose what do trust decision-making allocation to AI, especially when the meaning and impulse of fairness and intent exit different context distributions.

5.1. Opportunities and Challenges

With the rapid response of artificial intelligence (AI) systems, the educational and academic landscape is bound on a path of systemic transformation. Institutions of education and academia, the important stakeholders in skilling and education, are awakening to the pervading influence of AI technology on education and academia. Alphabet, IBM, Microsoft, Meta, Amazon, and OpenAI are a few leading technology companies involved in AI research and development (Franco D'Souza et al., 2024). The launch of AI systems, such as ChatGPT, Bard,

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and Claude, exemplifies the feasibility of every discipline being framed in a whole New Babylonian manner across parameters of literacy and skilling. The AI systems are not mere tools for enhancing teaching-learning activities; they also pose a challenge to their very essence (Schiff, 2021).

Besides productivity, AI technologies promise to revolutionize education. They will personalize learning, ease administration, and assist educators; they can suggest, curate and create texts, images, videos, simulations, lessons, tests, and evaluations. Educational research and practice will also be affected as large-scale collection and artificial intelligence analysis of educational records will yield unprecedented insights into teaching, learning, and organization. Using educational AI, critics of the status quo will be mobilized into a movement against testing, rankings, militarization, social engineering, accountability, privatization, and other ills. The capacity of assessment in words and actions to structure access to educational, civic, and professional opportunities, and to inform the cognitive and non-cognitive traits of emergent individuals, is such that all threatened vested interests must take heed of this change. How global education and AI are developed beyond the particularity of this move must therefore be attended to.

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6. Competencies for Leaders in Islamic Educational Institutions

In the contemporary era of rapid technological advancements, particularly in artificial intelligence (AI), the educational environment has undergone significant transformations. With the emergence of a digital culture, the willingness of companies, institutions, and societies to embrace innovative ideas remains a crucial challenge. Within every educational environment, the leader plays a pivotal role in determining the speed and ability to adapt to and be empowered by the hasty changes in the technology utilized by agents participating in the teaching and learning processes. In addition, the leader is responsible for the ethical use and challenges that such technology may bring into educational processes. This can particularly be felt in areas of educational institutions that are linked to religious beliefs, doctrines, and provisions. Actions such as bias, discrimination, mistrustworthiness in the outcomes, and many more ethical issues that need to be brought up, exposed, and at times resisted may challenge a range of the primary notions on education and educational systems. Hence, determining and obtaining the competencies of the leaders in such institutions may be a widely beneficial asset for societies around the world (Afshari et al., 2008).

For leaders in Islamic educational institutions, the following are considered the necessary competencies in such a setting:

1. Possessing a deep understanding of the types of AI technologies and comprehending their role, opportunities, and challenges for the society at large and education and

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educational institutions in specific.

2. Merging such understanding with a deep understanding of the Islamic worldview, beliefs, doctrines, and provisions as well as the educational policies sought by such beliefs from formal educational institutions.
3. Setting up and maintaining educational programs in an Islamic educational institution to be driven while being constructed in accordance with the first two competencies. These programs should respect, merge, utilize, and empower students with both the concerned AI types and the Islamic worldview, beliefs, doctrines, and provisions developed by traditional Islamic scholars.
4. Visiting and designing policies to merge the concerns, precepts, and provisions of ethics in the Western educational landscape from an Islamic perspective.
5. Fostering, seeking support for, and transferring such policies to conduct and maintain a wide range of programs that are supportive and knowledgeable of the above competencies, sought designs, and openness to balancing innovation, ethical concerns, and moral foundations with the aim of creating a culture of linear innovation and lifelong learning in the institution.
6. Designing, conducting, visiting, and preserving a wide range of required programs for school guidance personnel as well as for educational, professional, and technological processes conducted in Islamic educational institutions (Franco D'Souza et al., 2024).

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6.1. Technical Competencies

All leaders of educational institutions, especially Islamic educational institutions, require the competencies needed to face the challenges of the times. These competencies include technical, managerial, professional, pedagogical, research, and mediating competencies. These competencies need to be possessed and improved in accordance with the spirit of the times, especially technological developments, which on the one hand bring challenges and on the other hand provide opportunities. One of the technologies that is currently booming or viral is artificial intelligence (AI). Artificial intelligence, popularly known as AI, was first introduced in the 1960s. In its development, AI offers various benefits in all human life, including the world of education (Johari et al., 2018).

On the other hand, numerous issues, challenges, and opportunities have been presented as a result of the advancement of AI in the educational domain. The emergence of the AI chatbot ChatGPT, which is capable of generating human-like text, has the potential to revolutionize education. Conversely, educators, including higher education leaders, are anxious about being replaced by robots or machines as job prospects are thought to be increasingly scarce, as expressed in various news articles. Furthermore, AI chatbots such as ChatGPT can now instantly answer a variety of questions, including discussing topics involved in academic assessments such as essays and theses.

The technical competencies for leaders of Islamic educational institutions, as one of the types of Islamic educational institutions in Indonesia, are competencies that start with technical competencies. Technical competencies include competencies

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that contain knowledge of technology, tools, techniques, and methods. These competencies are mostly knowledge-related. It is said that the technical competencies of leaders of Islamic educational institutions in Indonesia in the face of artificial intelligence require Technical Competencies in information technology systems as follows: 1) Understanding the concept of artificial intelligence; 2) Understanding the workings of AI; 3) Understanding the benefits and opportunities of AI; 4) Understanding the role of AI in education; 5) Understanding data analytics; 6) Understanding information technology systems; and 7) Digital literacy (Afshari et al., 2008).

6.2. Pedagogical Competencies

In general, pedagogical competence is subdivided into (1) broad knowledge about teaching and learning; (2) formal knowledge about design, process, or implementation issues of specific learning environments; and (3) professional knowledge about teaching and learning in a particular subject domain (Aliabadi et al., 2023). In the age of artificial intelligence, it is necessary for leaders of Islamic educational institutions to have the necessary knowledge and skills to adapt teaching and learning processes to the requirements of intelligent technology. The current educational level and capacity to use intelligent technology services in teaching and learning processes assist to develop improvement plans and programs with a focus on pedagogy, curriculum development, understanding the intelligent technology development and its impact on the learning/teaching processes in Islamic educational institutions (R. Kshirsagar et al., 2022). To be able to manage smart intelligent-based learning

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environments, it is essential to understand the role and impact of intelligent technology in how knowledge is represented, stored, and what is relevant knowledge in the context of a learning situation and educational goal. It includes curriculum design and understanding the properties and requirements of the learning content/packages used in active agent technology-based systems.

6.3. Ethical and Moral Competencies

With the rapid development of Artificial Intelligence technology, many new ethical issues have emerged. Improper development and use of Artificial Intelligence could potentially violate privacy, promote inequality, and spread misinformation. Faced with these issues, it falls upon leaders in Islamic educational institutions to possess/reinforce ethical and moral competencies in light of artificial intelligence technology. Within this new context, they should not only demonstrate these competencies themselves, but also strengthen and implement these within their institutions (Yu & Yu, 2023).

In the context of Artificial Intelligence, ethical and moral competencies include the ability of leaders to make ethical decisions related to the utilization of Artificial Intelligence technology and its impact on their students. With Artificial Intelligence technology on the rise, ethical issues such as academic dishonesty, misinformation and inequality, among others, are bound to emerge. In light of these issues, leaders in Islamic educational institutions must be able to construct sound moral arguments in reference to these issues using moral reasoning. In this regard, leaders must utilize Islamic references

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(i.e. Al-Quran and Hadith) to construct their moral arguments, as this is part of their role as Islamic leaders (Franco D'Souza et al., 2024). Furthermore, they must be able to uphold and promote Islamic ethical and moral values within the context of artificial intelligence technology, and this is in line with the roles and responsibilities of Islamic leaders.

7. Developing Competencies for Leaders

The Islamic educational institution is a unique institution because it provides a dual degree, namely religious (academic) and vocational (temporal). In addition, it enhances soft skills (akhlak, character, and attitude) and hard skill (knowledge and skills). This makes its graduates entitled to work in both vertical sectors: in the education or religious field and in the government or non-government sectors outside the department. These dual careers require high adaptability of the institution in responding to the complexity of the work. These complexities lead to challenges for the institution at the national, international, and global levels. The rapid advancement of artificial (IT) information technology brings both threats and opportunities for sustainable development in the digital era. Therefore, intensive strategies, policies, and programs need to be implemented and formulated to respond to these several challenges. Effort to institutionalize the strategies, policies, and programs formulated are expected to enhance the competitiveness and accountability of the Islamic educational institution's leaders in the era of regional autonomization. This refers to the speed of responses on the year 2003 Asian economic crisis emergency measures and voucher application projects in

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public schools. It placed on the competitiveness of private Islamic educational institutions to recruit students and offered better quality of education. A well-defined competencies framework of leaders is utmost essential for the betterment of institutions. The most effective method for localizing good practices in developing the leadership competencies framework is through a content analysis of the literature. Literature analysis referring to various models of leadership competencies framework may produce a set of items reflecting values, knowledge, and skills across institutions (Boonpram, 2014) (Johari et al., 2018). The result may well become a benchmark for Islamic educational institutions to formulate their own leadership competencies framework on Islamic basis.

7.1. Training and Professional Development Programs

Training and professional development programs should be implemented for the leaders of Islamic educational institutions to equip them with the necessary competencies to encounter the challenges imposed by artificial intelligence and to benefit from its opportunities. Continuous training and development programs should be implemented to keep the leaders of Islamic educational institutions aware of the contemporary technologies, equipping them with the knowledge and skills to benefit from technologies in restructuring educational practices, teaching methodologies, and learning environments associated with these. This creates a necessity for ongoing training and professional development programs, due to the dynamic and rapid development of technologies associated with artificial intelligence (Chen, 2022). Educational institutions dedicated to

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education and promoting human sciences may require taking actions and establishing initiatives for enhancing knowledge and skills regarding contemporary technologies in a constructive, positive, and creative approach. Collaboration should be established with supportive local entities and institutions, or with international organizations and associations developing artificial intelligence technologies and applications in education. Such professional development initiatives may serve the purpose and need to educate the interested staff members regarding novel technologies in enhancing educational processes. This may support the necessary knowledge and capacity to address the emerging issues and challenges imposed by the implemented technologies in educational practices. Therefore, it may be a similar necessity and significant requirement to establish preparation and training programs to inform and educate the administrative staff, counselors, and technologically interested teachers regarding the novel constructed adaptive educational environments. However, preparation needs to be scaled extensibly for school staff. Educators involved in content teaching regarding the expansion of technologies related to artificial intelligence in the illustrative performances of different teaching disciplines may be required (Aliabadi et al., 2023).

7.2. Mentorship and Coaching

Mentorship and coaching are two highly effective methods for developing leadership capacity and capability in organizations. They are also among the most advocated initiatives for driving change in organizations (Grine, 2014). Mentoring is a developmental partnership between a more experienced or

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knowledgeable person (the mentor) and a less experienced or knowledgeable person (the mentee). Mentors may focus on developing others by providing timely advice, guidance on decision-making, sharing their own experiences, networking opportunities, assistance navigating the organization, emotional support, and/or sponsorship (Köbis & Mehner, 2021). Coaching, meanwhile, is an interactive process whereby one individual (the coach) supports another (the coachee) in developing their capacity to take charge of their work and lives, navigate challenges, and enhance their performance. Coaching is distinct from mentoring in that it is focused on development or improvement rather than on a more holistic relationship, and approaches, techniques, and frameworks can be applied independent of formal mentoring. In contrast to trends in the corporate world, mentoring and coaching have not gained significant traction in publicly funded educational institutions and organizations, especially in developing countries. This is unfortunate, as recent studies indicate strong integration and inclusion of mentoring and coaching in schools and universities worldwide. In the information age, and particularly in an age of knowledge dissemination and transfer (with the advent of artificial intelligence, or AI), focusing on faculty collegiate relationships is imperative. Leaders of Islamic educational institutions need to be aware of, build capacity in, foster, and develop these opportunities for staff. There has never been a greater need for building collaborative networks, partnerships, and team approaches in the area of leadership in education. However, these cannot be achieved without first developing a broad understanding of mentoring and coaching and equipping leaders with new competencies.

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8. Case Studies and Best Practices

A model describing AI perception as a general, universal concept encompassing a set of interrelated attributes is introduced and corroborated. In this setting, AI perception is understood to have six dimensions: productivity, statistical reliability, creativity, dangerousness, trustworthiness, and involvement in strategic processes. In this multidimensional approach, AI perception is expected to shape the establishment of teaching and learning processes. Case studies conducted in educational settings reveal how AI is perceived and how this perception mediates the initiation of task-solving strategies. The results provide a general framework for tackling the challenge of introducing AI technologies into educational environments, enabling the understanding of teaching and learning strategies. The findings further deepen the knowledge of emotions in teaching and learning and contribute to the design of AI technologies as partners in educational activities. (R. Kshirsagar et al., 2022) (Johnson et al., 2022).

8.1. Successful Implementation of AI in Islamic Educational Institutions

Artificial intelligence (AI) is a transformative technology that impacts all aspects of life, especially in educational institutions. The necessity of AI in education is undeniable as it provides extra tools for communication purposes and creative thinking in various forms. AI can present data, models, and examples both in text and visualization form, designed for the targeted audience (Franco D'Souza et al., 2024). It is crucial for Islamic

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educational institutions in Malaysia to consider the necessity of AI in education, leading to the necessity of AI education, which must be established according to Islamic principles by Islamic Educational Institutions. Educational institutions in countries with Muslim majorities must lead AI education in the Islamic way, and implementing AI educational content requires a model to be practical. Hence, the proposed model of leadership in developing this educational content is made up of five elements: knowledge and competency of AI, knowledge of Islamic education content, strategy of implementation in education institutions, sensitivity to local contexts, and readiness to develop content (Aliabadi et al., 2023).

Islamic educational institutions in Malaysia must successfully implement AI in online learning by making all necessary preparations, including training, resources, rules, and courses. However, such efforts are impeded by a lack of knowledge and competency in AI. Knowledge and competency in AI on the part of leaders and educators must be developed through training to successfully implement it in online learning, resulting in changes in the education processes of postgraduate programs in Islamic studies (USM).

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9. Conclusion and Future Directions

The Islamic educational institution leadership competencies in the age of artificial intelligence (AI) have implications for academic, research, and practice purposes. First, to the researcher, although there have been various studies that discussed the leadership competencies regardless of the organization type, and other studies that discussed the Islamic educational institution leadership, there is very limited research on the necessary competencies for leaders of Islamic educational institutions, especially concerning the challenges of current technological advancement, artificial intelligence. This study fills this research void by exploring and producing a comprehensive list of twenty-five competencies necessary for leaders of Islamic educational institutions in light of the artificial intelligence advancement. Fourteen of these competencies are new to the Islamic educational institution leadership discourse. Therefore, this study lays the theoretical framework for conducting subsequent research, particularly on improving and developing the leadership competencies in Islamic educational institutions. Especially the need for leadership competency improvement related to AI technology discussion. A thorough understanding of leadership competencies is necessary for Islamic educational institution context leadership competency training models and curriculum development for both academician, managerial, and board of trustees› levels, including in-service training programs, workshops, seminars, as well as leadership school establishment. The growing discussions on the other emerging technologies such as big data, blockchain, biotechnology, and internet of

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things in congruence with AI implementation in the Islamic educational institution context are also a fruitful opportunity for future research (Nguyen et al., 2023).

Research on the AI educational leadership readiness in terms of organizational readiness, strategic policy, and infrastructure is another necessary study. Conversely, as an experimental research, this study is on its testing phase, therefore, longitudinal monitoring of the competencies development effort effect on the improvisation of the Islamic educational institutions is necessary in the future. Another crucial empirical research is to investigate the core competencies of Islamic educational institutions leaders in different geographic contexts such as Arabic, African, or Western countries in light of the AI advancement.

9.1. Key Findings and Recommendations

This research aimed to identify the necessary competencies for leaders of Islamic educational institutions in light of the requirements of artificial intelligence. It focused on examining the required competencies in light of the present challenges of artificial intelligence. The list of necessary competencies was submitted to a jury committee for validation. According to the findings of the research, the necessary competencies for leaders of Islamic institutions of education in light of the requirements of artificial intelligence were as follows: 1) knowledge, 2) context, 3) ethical, 4) skill, and 5) behavioral. Moreover, there are other challenges that Islamic educational institutions are currently facing, including: a) the challenge of reducing the educational distance and isolation, b) educational quality enhancement challenge, c) the challenge of fighting extremism and terrorism, d)

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enhancing the social and cultural environment and the challenge of knowledge transformation aberration, and e) technology dependency challenge.

Based on the findings, the researcher recommends developing plans and strategies for enhancing the necessary competencies to leadership in Islamic educational institutions. Furthermore, there should be a plan to build artificial intelligence-based infrastructure for Islamic education departments within five years. In addition, spreading awareness about the importance and benefits of artificial intelligence for leaders of Islamic educational institutions could help in overcoming the above-mentioned challenges .

9.2. Areas for Further Research

Within the context of the study, many aspects of Islamic educational institutions such as their organizational structure, internal leadership styles, education development plans, teacher characteristics, student expectations, various transcendent obligations including parent, community, and governmental responsibilities, accreditations, coexistence capabilities, adaptability to global conflicts and revolutions as well as the ability to employ fresh emerging technologies in education, science, Islamic preaching, and da'wah as channels toward development, advancement, and professionalism in light of the requirements of artificial intelligence are open for further study. Another area for further research is on determining and measuring the general competencies, attitudes, and behaviors for heads of Islamic educational institutions including intention. Expectation, affect, cognition, behavior, belief, knowledge, obligation, and

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loyalty that should occur in real life from their own perspective and broader stakeholders in response to the implementation of artificial intelligence and technological advancements (Pinski & Benlian, 2023).

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References:

- Afshari, M., Abu Bakar, K., Luan Wong, S., Abu Samah, B., & Fooi Foo, S. (2008). School leadership and Information Communication Technology..
- Aliabadi, R., Singh, A., & Wilson, E. (2023). Transdisciplinary AI Education: The Confluence of Curricular and Community Needs in the Instruction of Artificial Intelligence.
- Boonpram, V. (2014). A Development of ICT Competency Leadership Model for Teachers in Saint Gabriel's Foundation Schools of Thailand. [PDF]
- Chen, Z. (2022). Artificial Intelligence-Virtual Trainer: Innovative Didactics Aimed at Personalized Training Needs. ncbi.nlm.nih.gov
- E. August, S. & Tsaima, A. (2021). Artificial Intelligence and Machine Learning: An Instructor's Exoskeleton in the Future of Education. ncbi.nlm.nih.gov
- Fauzi, A. (2018). Kepemimpinan Kepala Madrasah Dalam Mengembangkan Lembaga Pendidikan Islam.
- Ferreira Mello, R., Freitas, E., Dwan Pereira, F., Cabral, L., Tedesco, P., & Ramalho, G. (2023). Education in the age of Generative AI: Context and Recent Developments. [PDF]
- Franco D'Souza, R., Mathew, M., Mishra, V., & Mohan Surapaneni, K. (2024). Twelve tips for addressing ethical concerns in the implementation of artificial intelligence in medical education. ncbi.nlm.nih.gov
- Grine, F. (2014). Empowering Muslim Women Though Executive Coaching & Mentoring.
- Johari, J., Mohd Shamsudin, F., Kirana Yahya, K., Yean Tan, F., &

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+ 967 730053135 http://ium.usa.online

Farah Hanis Zainun, N. (2018). Integrating the element of Al-Qalb in the institutional leadership competencies framework: a content validity analysis.

- Johnson, D., Alsharid, M., El-Bouri, R., Mehdi, N., Shamout, F., Szenicer, A., Toman, D., & Binghalib, S. (2022). An Experience Report of Executive-Level Artificial Intelligence Education in the United Arab Emirates.
- Köbis, L. & Mehner, C. (2021). Ethical Questions Raised by AI-Supported Mentoring in Higher Education. ncbi.nlm.nih.gov
- Luan, H., Geczy, P., Lai, H., Gobert, J., J. H. Yang, S., Ogata, H., Baltes, J., Guerra, R., Li, P., & Tsai, C. C. (2020). Challenges and Future Directions of Big Data and Artificial In telligence in Education. ncbi.nlm.nih.gov
- Luis Martín-Núñez, J., Yasin Ar, A., Pérez Fernández, R., Abbas, A., & Radovanović, D. (2023). Does intrinsic motivation mediate perceived artificial intelligence (AI) learning and computational thinking of students during the COVID19- pandemic?. ncbi.nlm.nih.gov
- Mahmuda, M. (2017). The Islamic Education in Responding to the Barrenness of Information Technology. NAQVI, A. (2017). Responding to the will of the machine: Leadership in the age of artificial intelligence.
- Nguyen, A., Ngan Ngo, H., Hong, Y., Dang, B., & Thi Nguyen, B. P. (2023). Ethical principles for artificial intelligence in education. ncbi.nlm.nih.gov
- Obaid.S.Hanan, almusawi A mohammed Abdelwahab Nasser. (2023). The reality of the responsibility of the digital media marketing and its role in enhancing societal security for students of Jordanian public universities and development

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methods, INTERNATIONAL MINNESOTA JOURNAL OF ACADEMIC STUDIES, (VOL,1),(ISSUE,2), PP:40-15.

- Pinski, M. & Benlian, A. (2023). AI Literacy - Towards Measuring Human Competency in Artificial Intelligence.
- R. Kshirsagar, P., B. V. Jagannadham, D., Alqahtani, H., Noorulhasan Naveed, Q., Islam, S., Thangamani, M., & Dejene, M. (2022). Human Intelligence Analysis through Perception of AI in Teaching and Learning. ncbi.nlm.nih.gov
- Schiff, D. (2021). Out of the laboratory and into the classroom: the future of artificial intelligence in education. ncbi.nlm.nih.gov
- World English Journal, A. & Mohammed Ahmed Mudawy, A. (2024). Investigating EFL Faculty Members' Perceptions of Integrating Artificial Intelligence Applications to Improve the Research Writing Process: A Case Study at Majmaah University. osf.io
- Yu, L. & Yu, Z. (2023). Qualitative and quantitative analyses of artificial intelligence ethics in education using VOSviewer and CitNetExplorer. ncbi.nlm.nih.gov

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