

The Role of Artificial Intelligence in Islamic Education for Inclusive Children

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DOI:

<https://doi.org/10.23917/iseedu.v8i1.8841>

Received: 19-03-2024

Accepted: 22-04-2024

Published: 15-05-2024



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Abstract:

Artificial Intelligence (AI) is seen as a breakthrough in the world of education. This has led many teachers, especially Islamic Religious Education teachers, to start collaborating their teaching materials with sophisticated technology. This study aims to determine how artificial intelligence can be a breakthrough in creating an inclusive, comfortable and easily accessible learning environment for people with disabilities in Islamic religious education learning. The study used a qualitative descriptive literature review, with data collection through literature studies. The results of the study show that artificial intelligence can help teachers achieve the goals of Islamic religious education by instilling moral and character values. Artificial Intelligence has important implications for the development of innovative and effective learning methods in Islamic religious education. The use of artificial intelligence makes learning more interactive, allows learning to be tailored to students' needs, improves understanding of Islamic religious concepts and students' motivation in practicing character values.

Keywords: Artificial Intelligence, Inclusive Learning, Islamic Religious

Education

Introduction

Inclusive education management has begun to be implemented today as a form of concern in prioritizing equal rights for children with disabilities to learn. The inclusive education program is designed to provide opportunities for children so that each child's needs are considered. Although this inclusive education program is aimed at children with special needs. However, basically this program applies to all children because they all have unique characteristics, characteristics, and diversity (Penelitian et al., 2022). The Minister of the Ministry of Education, Culture, Research and Technology (Kemendikbudristek) Nadiem Anwar Makarim through the independent learning curriculum planning where inclusive education receives special attention in the form of guidelines for implementing inclusive education for schools in Indonesia. The planning of inclusive schools is expected to be a solution in suppressing the attitude of exclusivism that has long separated children with disabilities from their surroundings.

Islamic religious education is a conscious and planned effort to prepare students to believe, understand, appreciate and practice Islamic teachings through guidance, teaching and training activities (Moudina et al., 2023). Efforts to develop Muslim personalities between normal children and children with special needs (inclusion) are certainly different. Children with disabilities have a

unique way of understanding, thinking, and responding to the content given by Islamic religious teachers. Special methods given to integrative children are intended to stimulate the child's brain so that the child is able to respond to the teacher's statements and change their behavior for the better. However, the problem with its implementation is the challenges of inclusive education, namely, inadequate management and human resources of institutions and accessibility of facilities that have not implemented the principle of inclusion. In addition, there is a lack of optimization of the strategies used for inclusive learning (Maulana Arif Muhibbin, 2016). So with this phenomenon, researchers are interested in discussing how Artificial Intelligence can be a breakthrough in creating an inclusive, comfortable and easily accessible learning environment for people with disabilities in Islamic religious education learning.

Research Method

The type of research used by the author is qualitative research. The author presents research in the form of words, not numbers. This paper includes a literature study (library research) or in other terms, literature study if seen from the data source. On this occasion, the researcher tried to examine previous secondary literature data, namely other people's research journals. The targets/objectives that will be researched are discussing the empowerment of Artificial Intelligence (AI) towards inclusive learning. Meanwhile, the research subject used is learning Islamic religious education for children with disabilities.

Result and Discussion

In the world of inclusive education, we pay great attention to the aspect of adapting its use to suit the needs of students. The media or learning tools are modified in such a way so that they can be used easily by disability children. The use of learning media must really pay attention to the type of media used, so that it suits the needs and characteristics of each crew member (Salsabila et al., 2024). This is done so that the adaptation of technology, especially the adaptation of artificial intelligence used in learning, is different from the adaptation made to other children. For them, namely students with disabilities, must pay attention to aspects of appropriate use in supporting their learning.

Artificial Intelligence is a computer system that is capable of carrying out tasks that usually require human intelligence (Sobron & Lubis, 2021). This means that artificial intelligence is concerned with how human thought processes are represented by machines. Artificial intelligence systems are designed as tools to support research and development of human capabilities. Artificial intelligence can also improve operator performance, automatically ensuring that progress and improvements during training sessions match the student's previous performance. Artificial intelligence is able to understand problems and assess intelligent student analysis and tutors build social responses in real time (Adriana, 2021).

In its development, Artificial intelligence is classified into four types based on its function, including: 1) Reactive Machines (Type I) which is based on the human ability to respond to stimuli but not remember self-awareness, (2) Limited Memory (Type II) which is based on the human ability to responds to stimuli but has limited memory; has limited memory capacity to store new data outside the program. Data can be stored so that artificial intelligence can learn new things; (3) Theory of Mind (Type III) can be used to interact better with humans. This type of program aims to capture

environmental conditions and their influence on human thoughts and emotions; (4) Self-awareness (Type IV) The pinnacle of the most advanced development of artificial intelligence, self-awareness (Fitri Sarinda et al., 2023).

Artificial intelligence acts as a tool that can be used to facilitate character learning for students with special needs. Artificial intelligence is widely used to support the education of children with special needs by using games that help them not get bored easily in learning, bridging the gap between teachers and students with disabilities and developing the full potential of children with disabilities. Inclusive education for children with disabilities by providing access to artificial intelligence-based learning allows everyone to learn in an environment where opportunities are available to all students, influenced by the innovative use of artificial intelligence, can help them express themselves and overcome barriers to expressing their views. and ideas through verbal commands (Patra & Chander, 2021).

In the application of artificial intelligence in inclusive education, it consists of 4 types, including Virtual Teaching Assistants which are designed to increase student learning motivation and specifically for the learning of children with disabilities themselves, virtual teaching assistants who bridge the gap that occurs through the role of those responsible as more qualified mentors, Multilingual Chats Bots/Voice Bots which can be used to personalize teaching and can help teachers interact with students who have limited speaking abilities (dyslexia), Adaptive Learning Management System (A-LMS) which is a system designed and adapted to the learning environment. adaptive and flexible because it is built based on an individual learning model, AI-Powered Test Generation And Evaluation which can be used to create automatic questions that are useful for carrying out comprehensive learning assessments that are tailored to the abilities of children with disabilities.

The student paradigm in Islamic education relates to the student paradigm consisting of 3 parts (Karim & Sugianto, 2023).

1. Students as recipients: act as recipients of services provided by artificial intelligence. In this case, students' behavior is based on what they receive from artificial intelligence services. So the foundation of behaviorism was formed. One of the important figures in behaviorism theory is Burrhus Frederic Skinner. According to Skinner, a person's behavior is influenced by stimuli and responses (Mulyani et al., 2021). This involves punishment, reinforcement, formation, elimination, as well as basic aspects that come from reinforcing behavior (Ganiyu Adekola & AbdulRazaq, O. Kilani, 2023). The subsequent response that students receive from artificial intelligence services will influence their behavior in the future. By using interesting concepts and teaching methods, as well as incorporating behavioristic theory, learning will be more effective and students will develop better understanding and develop positive behavior.
2. Students as collaborators: In learning, artificial intelligence acts as a learning support tool while students act as collaborators to focus on the learning process. This paradigm is based on cognitive and social constructivist learning views. At the heart of constructivism is the possibility that students must discover and transform complex data themselves when they need it as their own. (Hasyimi et al., 2023). In this paradigm, prioritizing student integrity in optimizing the use of artificial intelligence in learning models.
3. Learners as leaders : This paradigm is characterized as empowering artificial intelligence, learners as leaders, which makes learner agency the core of AIEd (Bandura, 2006b). Artificial intelligence

is also seen as an innovation that can improve human intelligence to become even better. So it can be said that students act as leaders who decide all forms of learning they want. Meanwhile artificial intelligence acts in providing support in the form of instructors who enable the encouragement of greater intelligence through a high level of transparency, accuracy and effectiveness. Human-computer cooperative systems, which integrate advanced AI techniques and human decision making, have the potential to achieve the goal of learners as AI-empowered leaders in the complexity Paradigm(Bandura, 2006a).

Learning Islamic religious education has the aim of increasing students' understanding and appreciation of the Islamic religion. Religious education has an important role in implementing character education(Ummah, 2019). Because religious education is a type of learning that aims to improve noble morals and spiritual values in children to become a Muslim who believes and is devoted to Allah SWT, then it can become *uswatun hasanah* for personal, family and social life. Schools must be able to optimize the delivery of religious education by applying the values contained in religious education to the school environment and all school components, including teachers, staff and students(Hidayat, 2012).

Implementing moral material in Islamic religious education (PAI) and character learning, such as understanding good and bad behavior, not being allowed to do evil or being ignorant towards other people, behaving politely and politely, helping each other and other character values are things that must be taught. teach children with special needs as early as possible. In this case, the behavior of ABK students is not all negative but some is positive. However, it cannot be denied that not all students with special needs are active students, but there are students who are passive and some of them tend to be destructive(Thoufoul, 2020) because children with special needs have developmental disorders (physical, mental, intellectual, social, emotional) which are not in accordance with their needs. development of children generally at their age.

Research conducted by Sugerman and friends entitled "Character Education Counseling for Children in Facing the Era of Society 5.0 at SDN Gayam 02 Bondowoso Regency" can be concluded that the Industrial Revolution 4.0 uses artificial intelligence, while Society 5.0 focuses on technological and human elements. It can be concluded that this activity was successful and provided additional knowledge, understanding and insight regarding character education as an important asset in facing the Society 5.0 era. By equipping students with correct moral values and a deep understanding of character education as a young generation, students will be able to develop noble morality and gain sensitivity and encouragement to become role models in the daily lives of many people.

Research conducted by Herfia Rhomadhona entitled "Expert System for Diagnosing Characteristics of Children with Special Needs Using the Forward Chaining Method" concluded that through the implementation of an expert system with the forward chaining method, you can identify solutions and learning that suit the personality of children with special needs. ABK system testing is carried out using the black box testing method and system accuracy testing. Test results show an accuracy of 80% in determining system diagnostic accuracy through functional verification testing and accuracy testing using 20 test data.

Based on two previous studies, we can find artificial intelligence as a form of service that is able to influence the social performance system of its users. This is in accordance with behaviorism theory from the foundation of the Islamic religious education paradigm, namely students as recipients of

what they receive. So if Artificial Intelligence is used it can cause changes in self-response and stimulus. The readiness of human resources in optimizing the social character of children with special needs through the use of artificial intelligence is a solution to educational challenges in the industrial era 4.0 in terms of forming the social character of society.

Conclusion

Artificial Intelligence can help teachers achieve the goals of Islamic religious education in instilling moral and character values. Artificial intelligence has important implications for the development of innovative and effective learning methods in Islamic religious education. The use of artificial intelligence makes learning more interactive and allows learning to be tailored to students' needs, increasing understanding of Islamic religious concepts and student motivation in practicing character values. Artificial intelligence can also be a tool in analyzing the handling of ABK characters. However, with the presence of technology that is present and equal to human intelligence that can hear, see, know, speak, be strong-willed, and appear intelligent, artificial intelligence remains a "creature" that is lifeless and soulless. Therefore, the use of artificial intelligence still has its own shortcomings. Artificial intelligence cannot provide examples, but humans will always be able to provide examples. So with this artificial intelligence cannot be the main teaching tool but there must be the thinking of the teacher who operates the tool behind it.

Reference

- Adriana. (2021). Model pembelajaran berbasis deep learning bagi siswa inklusi di pendidikan vokasi: Systematic literature review. *Jurnal Tiarsie*, 18(4), 1–9.
- Amiruddin, M. Z. (2022). Analysis of inclusion education services for children with learning to read: Case study in grade III students. *Saintekno*, 20(1), 1–6. <https://journal.unnes.ac.id/nju/index.php/saintekno>.
- Annaafi'atsaani, I., & Ikhrom, I. (2024). Developing the extraordinary potential: Inclusive education as the key to developing the talent of children with special needs. *Nusantara: Jurnal ...*, 4(1). <http://journal.rumahindonesia.org/index.php/njpi/article/view/228>.
- Bandura, A. (2006a). Human-computer cooperative systems, which integrate advanced AI techniques and human decision making, have the potential to achieve the goal of learners as AI-empowered leaders in the complexity paradigm. *Perspectives on Psychological Science*, 1(2), 164–180. <https://doi.org/10.1111/j.1745-6916.2006.00011.x>.
- Bandura, A. (2006b). Toward a psychology of human agency. *Perspectives on Psychological Science*, 1(2), 164–180. <https://doi.org/10.1111/j.1745-6916.2006.00011.x>.
- Fitri Sarinda, M., Martina, M., Dwi Noviani, & Hilmin, H. (2023). Pendidikan agama Islam berbasis teknologi (AI) artificial intelligence. *Jurnal Kajian Penelitian Pendidikan Dan Kebudayaan*, 1(4), 103–111. <https://doi.org/10.59031/jkppk.v1i4.268>.
- Ganiyu Adekola, & AbdulRazaq, O. Kilani. (2023). Jumat khutbah as community education strategy for family stability among Muslim adults in Ibadan metropolis, Nigeria. *Al-Fadlan: Journal of Islamic Education and Teaching*, 1(2), 31–42. <https://doi.org/10.61166/fadlan.v1i2.38>.
- Hasyimi, A., Stiadhy, T., Maulana, A., Ningtiaas, A. I., Nurcahyanti, A., Tinggi, S., Islam, A., & Deli, T. (2023). Learning constructivism in learning moral creeds at. 87–92.
- Hidayat, A. (2012). Pengelolaan pendidikan: Konsep, prinsip, dan aplikasi dalam mengelola sekolah dan madrasah. Digital Library, Uin Sunan Gunung Djati. <https://etheses.uinsgd.ac.id/30324/>.

- Karim, A. R., & Sugianto, H. (2023). Measuring the future needs of Islamic education through the role of artificial intelligence. *Proceeding of International Conference on Education, Society and Humanity*, 1(1), 861–870. <https://ejournal.unuja.ac.id/index.php/icesh/article/view/6006>.
- Maulana Arif Muhibbin. (2016). Tantangan dan strategi pendidikan inklusi di perguruan tinggi di Indonesia: Literature review, 01, 1–23.
- Moudina, T., Niswanto, N., & Ismail, I. (2023). Management of inclusive education in MIN 9, Banda Aceh City, Indonesia. *Path of Science*, 9(5), 3041–3048. <https://doi.org/10.22178/pos.92-14>.
- Mulyani, M., Melisa, & Risman Bustamam. (2021). Peran pendidik dan lembaga pendidikan dalam membentuk kesalehan individu (Studi perspektif normatif). *AL-FAHIM: Jurnal Manajemen Pendidikan Islam*, 3(2), 207–225. <https://doi.org/10.54396/alfahim.v3i2.158>.
- Patra, G., & Chander, S. (2021). Education of children with disabilities: Exploring possibilities with artificial intelligence. *Pedagogy of Learning International Refereed/ Peer Reviewed Journal of Education*, 7(3), 29–35. <https://doi.org/10.46704/pol.2021.v07i03.004>.
- Penelitian, J. H., Kepustakaan, K., & Pendidikan, B. (2022). School-based inclusive education management as a quality assurance system in Indonesia: Systematic literature review. 8(2), 437–449.
- Putri, V. A., Carissa, K., Sotyawardani, A., & Rafael, R. A. (2023). Peran artificial intelligence dalam proses pembelajaran mahasiswa di Universitas Negeri Surabaya. *Prosiding Seminar Nasional*, 615–630.
- Salsabila, H., Suherman, I., & Yektyastuti, R. (2024). Exploration of the use of science learning media for. 1(2), 10–17.
- Sangadah, A. A., Kusuma, A., Agil, W., Tri, S., Siti, A., Nazira, A., Nasikhah, F., Nazilah, F., Latifah, I., Sari, M., Sangadah, L. A., Aziziyah, Z., Muniroh, A., Nafisah, U., & Putra, A. A. (n.d.). Comprehensive understanding.
- Sobron, M., & Lubis. (2021). Implementasi artificial intelligence pada system manufaktur terpadu. *Seminar Nasional Teknik (SEMNASTEK) UISU*, 4(1), 1–7. <https://jurnal.uisu.ac.id/index.php/semnastek/article/view/4134>.
- Thoufoul, E. L. (2020). Pendidikan karakter pada anak berkebutuhan khusus di lembaga insan cemerlang desa tanjung sepreh maospati magetan. 1.
- Ummah, M. S. (2019). Pendidikan agama Islam sebuah pengantar. *Sustainability (Switzerland)*, 11(1). http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_T_ERPUSAT_STRATEGI_MELESTARI