

## Revitalization of Islamic Religious Education and Ethics in Primary and Secondary Schools in the Era of Industrial Revolution 4.0

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### **ABSTRACT**

*The changing times and developments in the era of the Industrial Revolution 4.0 bring significant opportunities and challenges to people's lives, including education. This era is marked by rapid developments in digital technology, artificial intelligence, big data, and the Internet of Things (IoT), which are changing the mindset, learning methods, and social interactions of students. Education is no longer limited to physical classrooms, but has expanded into the digital realm, requiring teachers, curricula, and learning systems to adapt quickly and effectively. Moreover, Islamic Religious Education must be able to adapt and not be antipasti to the changes and developments of the times. By integrating digital technology into the learning process, using social media as a means of preaching, and developing a curriculum that is relevant to contemporary issues such as digital ethics and environmental sustainability, all based on Islamic values. The purpose of this study is to examine in depth how the revitalization of Islamic Religious Education and Ethics can be carried out to remain relevant and effective in facing the challenges of the 4th Industrial Revolution era. To achieve this objective, this study employs a qualitative approach using library research methods, which involves analyzing literature from various relevant scientific sources, such as journals, books, and official documents. From the results of the study that in facing the challenges of the Industrial Revolution 4.0 requires steps in dealing with it, namely; 1). increasing the competence of Islamic Religious Education teachers, 2). relevant curriculum development, 3). collaboration between religious education and technology, 4). character education in a global context. In the face of these developments, education must also be able to change the paradigm of education. That students are autonomous subjects, who are involved in learning activities. The cooperation of various elements such as family and society is also needed in an effort to revitalize Islamic religious education and character education. Because this effort requires effective collaboration and integration between religious education, technology and ethics.*

**Keywords:** Revitalization, Education and Manners, Era of Industrial Revolution 4.0.

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## INTRODUCTION

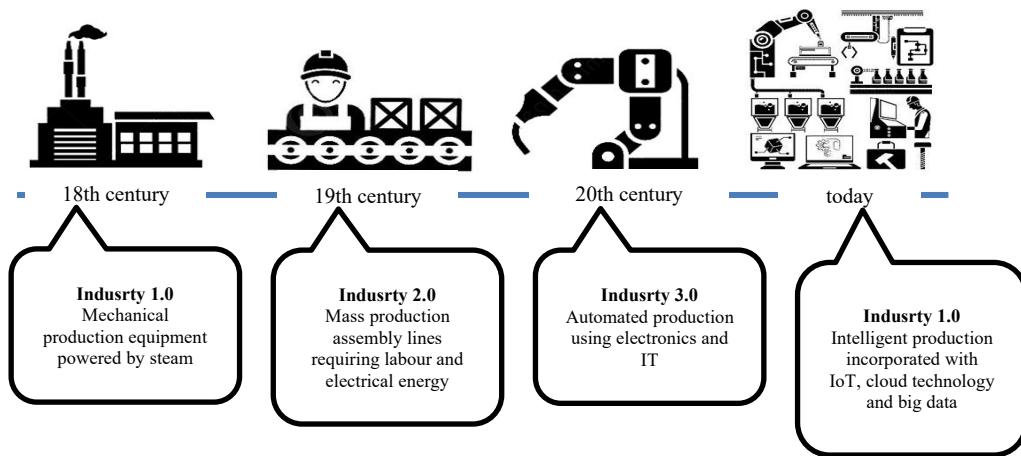
The era of the Fourth Industrial Revolution has brought about major transformations in the world of education, presenting new opportunities such as digital learning and artificial intelligence, but also challenging educators and educational institutions to adapt quickly to technological changes and the competency requirements of the 21st century. At the same time, the Industrial Revolution 4.0 era brings changes in all lines of life, including education. This period is marked by the substitution of human labor with machines and robots powered by artificial intelligence. Industry 4.0 is also referred to as the digital revolution or the age of technological disruption. It is termed the digital revolution due to the widespread use of computers and the automation of processes across various sectors. Meanwhile, it is called the era of technological disruption because automation and interconnectivity within industries have caused industrial activities and job competition to develop in a non-linear and dynamic manner.<sup>1</sup> Therefore, the era of the industrial revolution 4.0 is often also known as disruption. In addition to opening up opportunities for job competition, it also gave birth to life practices that left the conventional world, more human activities were carried out in the digital world, including education.

The progress of global education is closely linked to the evolution of the industrial revolution, as shifts in the economic structure indirectly bring about transformations in a nation's educational system. The industrial revolution can be seen from several phases, starting from; The First Industrial Revolution took place in the 18th century with the invention of the steam engine, which enabled mass production of goods. The Second Industrial Revolution emerged during the 19th to early 20th centuries, marked by the use of electricity that significantly reduced production costs. The Third Industrial Revolution began around the 1970s, characterized by the rise of computerization. The Fourth Industrial Revolution, occurring around the 2010s, was driven by artificial intelligence and the Internet of Things (IoT), serving as the foundation for enhanced interaction and connectivity between humans and machines.<sup>2</sup>

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<sup>1</sup> Ghufron Ghufron, 'Revolusi Industri 4.0: Tantangan, Peluang, Dan Solusi Bagi Dunia Pendidikan', in *Seminar Nasional Dan Diskusi Panel Multidisiplin Hasil Penelitian Dan Pengabdian Kepada Masyarakat 2018*, 2018, I.

<sup>2</sup> Banu Prasetyo and Umi Trisyanti, 'Revolusi Industri 4.0 Dan Tantangan Perubahan Sosial', *IPTEK Journal of Proceedings Series*, 5, 2018, pp. 22–27.



**Figure 1. Technological of Development<sup>3</sup>**

Improving education and learning in primary and secondary education cannot but be done through improving the quality of teachers. The performance of teachers in the era of the industrial revolution 4.0 is a teacher who is literate in digital economy, artificial intelligence, big data, robotic, without overriding the importance of the noble task of growing noble character for students. Through teachers, the world of education must construct creativity, critical thinking, cooperation in mastering information and communication technology and digital literacy skills.<sup>4</sup> The development of digitalization in the era of the industrial revolution 4.0 is not the purpose of education, but as a medium and learning tool. Because basically the main purpose of education is the process of humanizing humans, in Islamic language it is called the process of forming akhlakul karimah. namely noble and praiseworthy behavior or character in accordance with Islamic teachings, which reflects a good personality in interpersonal relationships. But on the other hand, teachers must be able to adapt and even develop learning models that are able to maximize digital media and tools. So that the implementation of learning is adjusted to the times and the adaptation of students.

Research by Muhammad<sup>5</sup> states that educating the millennial generation in the Industry 4.0 era requires strong collaboration between families, schools, and communities. Islamic education in this modern era is not only tasked with transferring religious knowledge, but also plays a role in shaping the character and morals of the younger generation so that they are able to face global challenges and technological developments wisely. Therefore, synergy between these three environments is key to creating an adaptive, inclusive educational ecosystem that remains grounded in Islamic values. In their research,<sup>6</sup> In this digital age, students are faced with a flood of information, unlimited access to global content, and an instant and individualistic lifestyle.

<sup>3</sup> Prasetyo and Trisyanti, 'Revolusi Industri 4.0 Dan Tantangan Perubahan Sosial'.

<sup>4</sup> Yusnaini Yusnaini and Slamet Slamet, 'Era Revolusi Industri 4.0: Tantangan Dan Peluang Dalam Upaya Meningkatkan Literasi Pendidikan', in *Prosiding Seminar Nasional Program Pascasarjana Universitas PGRI Palembang*, 2019.

<sup>5</sup> Parhan et al., (2022)

<sup>6</sup> Inggit Pratiwi and Artika, (2023)

Without strengthening spiritual and ethical values, the younger generation is prone to identity crises, moral degradation, and a loss of direction in utilizing technological advances. Therefore, the curriculum for Islamic Religious Education and Character Development must be designed to be more contextual and interactive, utilizing digital media wisely, and equipping students with Islamic life skills relevant to the 4.0 industrial era, such as digital literacy, critical thinking, and social empathy. This approach is expected to produce a generation that is not only intellectually intelligent but also spiritually and emotionally mature.

The learning environment should focus on teaching skills and techniques to deal with situations in the unknown, instability and in unpredictable environments. Learners should be taught innovative problem-solving skills. So how the use of technology extends to various types and levels of learning. The development of this technological era can actually help improve and develop important verbal and written communication skills, problem solving, information management and access, decision making, collaboration and groups, visual production, manipulation and use of different technologies.<sup>7</sup> However, how the process is always within Islamic values, namely values that give birth to the norms of shari'ah and akhlaqul karimah. That is, behavior based on Islamic law aims to regulate human life so that every aspect of life has value in terms of worship and social interaction. This is where the role of Islamic religious education as a series of efforts to guide and direct human potential so that changes occur in their personalities as individual and social beings.<sup>8</sup>

Islamic religious education which has the task of filling the void in fostering the spirituality and spirituality of students must be able to play a role in all times. In the midst of the industrial revolution 4.0 era with the flow of change and the development of information and communication technology, Islamic religious education needs to be concretized again in terms of its role and position as part of the national education system in building the nation's civilization. Because basically Islamic religious education is moral education or character that has an important role in building a nation.<sup>9</sup> Through the discussion of the revitalization of Islamic religious education and culture in the era of the industrial revolution 4.0, it will be a study material for consideration of a thought in the world of education. Moreover, this industrial revolution era brings the development of information and communication technology, so that it can equip students from elementary to secondary schools in order to avoid the disaster of moral degradation among students.

## RESEARCH METHODOLOGY

This study employs a library research approach, which involves a series of activities such as collecting, reading, recording, and analyzing data obtained from library sources. The data for this research are gathered from various references, including books, academic journals, textbooks,

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<sup>7</sup> Imas Cintamulya, 'Peranan Pendidikan Dalam Mempersiapkan Sumber Daya Manusia Di Era Informasi Dan Pengetahuan', *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 2.2 (2015).

<sup>8</sup> Samsudin Samsudin, 'Pendidikan Agama Islam Dan Budi Pekerti Dalam Membangun Kerukunan Beragama (Tinjauan Kurikulum 2013 Di SD Tegalsari, Srigading, Bantul)', *Ibtida 'iy: Jurnal Prodi PGMI*, 4.2 (2019), pp. 119–24.

<sup>9</sup> Sri Asih, 'Urgensi Pendidikan Akhlak Budi Pekerti Sebagai Pondasi Dalam Perspektif Islam', *Jurnal Pendidikan Guru*, 5.1 (2024).

magazines, newspapers, official documents, and other relevant materials. The primary focus of this study is to identify and analyze literature that aligns with the research issues being examined. Researchers collect data by reviewing appropriate references to find answers to the formulated problems. Library research serves as an analytical study of existing literature that helps provide insights and solutions relevant to the topic under investigation. Through this method, researchers can derive findings based on the information gathered from credible and diverse sources. The library data sources used in this study are references that specifically discuss various views, theories, and research results related to issues in Islamic religious education and the strengthening of moral values. In determining the relevance and quality of the literature, the researcher considered the suitability of the topic, the credibility of the author and publisher, the year of publication (recency), and the frequency of citations. The selected literature consists of academic books, scientific journal articles, proceedings, and relevant research reports to build a theoretical foundation and support the analysis of the issues under review.

Desk research involves the examination of theories that are relevant to the research problem. The evaluation of these concepts and theories is conducted using existing literature, particularly from scholarly articles published in reputable academic journals. A literature review functions to develop the conceptual or theoretical framework that underpins the research, enabling a systematic understanding of the phenomena under study by identifying relationships between variables. This process is essential for explaining and predicting occurrences within the research context. Moreover, the literature review aids in formulating hypotheses that can later be tested through data collection, serving as a substantive theory that focuses specifically on the application to the object of study.<sup>10</sup>

This study adopts a qualitative research approach, which is a systematic method used to explore and understand a phenomenon in its natural context without manipulation or hypothesis testing. Various techniques can be employed in qualitative data collection, including interviews, observations, and documentation. In this research, a qualitative approach with a library research model is applied. Accordingly, the primary data collection technique used is documentation, which involves examining and gathering information from records, manuscripts, books, journals, magazines, and other written materials. This method aims to obtain the necessary data to answer the research questions. Documentation refers to records of past events that may exist in various forms—written, visual, or artistic. Written documents include papers, books, diaries, life histories, and biographies, while artistic documents may consist of works such as sculptures, paintings, or other creative artifacts.<sup>11</sup>

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<sup>10</sup> Wiratna V Sujarweni, 'Metodologi Penelitian, Yogyakarta: PT Pustaka Baru' (Cet-1, 2014).

<sup>11</sup> Suharsimi Arikunto, 'Prosedur Penelitian: Surat Pendekatan Praktis, Jakarta: Rineka Cipta, 1991', *Assisi, Abbas. Biografi Dakwah Hasan Al-Banna*. Bandung: Harakatuna Publishing, 2006.

## RESULTS AND DISCUSSION

### Revitalization of Islamic Religious Education and Ethics

To overcome these challenges, the revitalization of Islamic religious education and ethics must be carried out with an approach that is more adaptive to the times, especially in facing the industrial era 4.0. Some steps that can be taken in this revitalization are as follows:<sup>12</sup>

#### 1. Improving PAI Teacher Competence

In order for Islamic religious education to have a maximum impact, it is necessary to improve the quality and competence of teachers. Teachers must have a deep understanding of educational technology and be able to integrate religious values in various digital media used by students. The development of digital technology in the world of education requires Islamic Education (PAI) teachers to not only master religious material textually, but also have high digital literacy. PAI teachers today face new challenges, namely how to convey Islamic values contextually and relevantly through digital platforms that are familiar to students, such as social media, educational videos, or interactive applications. The need for these competencies encompasses two main aspects:

- a. Technology-based pedagogical competencies, which involve the ability to design, implement, and evaluate learning by effectively utilizing technology.
- b. Spiritual and value competencies, which involve the ability to maintain the substance of Islamic teachings so that they are not distorted when conveyed through modern media.

Improving the competencies of Islamic Education teachers holds a vital role in shaping students' character in the digital era, a time when information spreads rapidly and external influences can easily affect their thoughts and behavior. Therefore, teacher training programs must focus on integrating technological proficiency with a deep understanding of religious values, ensuring that Islamic Education is not only informative but also transformative in shaping students' personalities.

#### 2. Relevant Curriculum Development

The curriculum for religious and moral education must be aligned with technological advancements and contemporary societal needs. The use of technology-based applications and learning platforms can help students more easily understand the teachings of religion and ethics in a more interactive and interesting way. In fact, according to Najwan,<sup>13</sup> Islamic education must have a global perspective. It must integrate moral, socio-political, and reflective aspects into Islamic education from a global perspective. The importance of contextualization, historicization, and rationalization of religious interpretation lies in the effort to keep religious teachings relevant to social realities and contemporary challenges.

In the context of the digital age and the Fourth Industrial Revolution, the development of religious and moral education curricula can no longer be conventional or solely focused on lecture-based and memorization methods. Curricula must be adaptive and responsive to the dynamics of

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<sup>12</sup> M Si Ratnawati, 'TANTANGAN DUNIA PENDIDIKAN INDONESIA DI ERA REVOLUSI INDUSTRI 4.0', *TEORI & INOVASI PENDIDIKAN MASA DEPAN*, p. 101.

<sup>13</sup> Saada, (2023)

the times, particularly in terms of integrating information technology into the learning process. This is important because today's students are digital natives—children who were born and raised in a technology-rich environment. Therefore, the use of interactive media such as animated videos, interactive e-books, game-based learning applications (gamification), and online platforms such as Learning Management Systems (LMS) are effective tools for conveying religious and moral values in a contextual manner.

Technology-based curriculum development also enables a student-centered learning approach, where students are more actively involved and responsible for their learning process. In this case, teachers act as facilitators who help students understand and internalize religious values and moral principles in their daily lives through the digital context they are familiar with. However, it is important to note that the integration of technology into the curriculum must not overlook the spiritual essence and noble values of religious teachings. Therefore, curriculum development must be conducted carefully and based on research to ensure that pedagogical innovations remain aligned with the Islamic values intended to be instilled.

### 3. Collaboration between Religious Education and Technology

Based on the results of bibliometric analysis, Soleh Hasan<sup>14</sup> research shows that the trend in literature on digital Islam has seen a significant increase in the integration of digital technology into Islamic religious practices, particularly from 2008 to 2021. This study reveals that digital Islam is a blend of conventional religious practices and modern approaches, supported by a cross-disciplinary theoretical framework, and demonstrates significant engagement by Muslim communities in the digital Islamic space. Therefore, integrating religious values in the use of digital technology can enrich students' learning experience. For example, using social media and educational apps to spread moral messages and Islamic teachings in an engaging and accessible way. The collaboration between religious education and technology is a strategic approach to addressing the challenges of learning in the digital age. This integration not only expands the reach of religious teachings but also enhances the appeal and relevance of learning for young people living in a digital environment.

By leveraging social media platforms such as Instagram, YouTube, TikTok, or educational podcasts, teachers and educational institutions can present Islamic content in more visual, narrative, and interactive formats. This helps students better understand and internalize religious values as they are conveyed through platforms they use daily. Additionally, educational apps specifically designed for religious education can offer features such as interactive quizzes, simulations of the stories of the Prophets, or online discussion forums, which encourage active participation and moral reflection among students. This collaboration bridges the gap between tradition and innovation, where the substance of Islamic teachings remains intact, but is conveyed through contextual methods that align with the times.

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<sup>14</sup> Wahid, (2024)

#### 4. Character Education in a Global Context

The results of research conducted by Musibau<sup>15</sup> explain the close relationship between ethics and globalization. Along with the rapid development of information and communication technology as a result of globalization, there is a need for globalization ethics as a response to various moral challenges arising from the increasing interconnectedness of the world. In this context, educators play a crucial role in teaching religious values and ethics that are relevant to global challenges, while remaining grounded in Islamic teachings. Character education that teaches about tolerance, empathy and honesty will be very important to face the challenges of a digital world full of intercultural interactions.

In the era of globalization and digitalization, students not only interact with their local environment, but also connect directly with various cultures, values, and perspectives from around the world. Therefore, character education can no longer be exclusive or limited to the local context alone, but must be able to equip students with universal values derived from Islamic teachings, yet also relevant in global interactions. Values such as tolerance, empathy, honesty, and social responsibility are fundamental principles in Islamic teachings that also serve as important foundations for building a peaceful and just global civilization. In the digital context, where students often interact through social media, global forums, and information sources from diverse cultural backgrounds, strengthening character becomes increasingly crucial.

Character education taught in a contextual manner—taking into account global realities—will help students form a strong moral identity while being able to be open, fair, and wise in cross-cultural interactions. Thus, Islamic religious education not only plays a role in shaping personal character but also serves as the foundation for the creation of global civility. However, the challenge that arises is how to design a curriculum and learning strategies that can balance the strengthening of Islamic values and global social skills. This is where the important role of teachers as facilitators of values comes into play—they not only convey religious teachings in a normative manner but also translate them into the context of a pluralistic and dynamic global life.

Revitalizing Islamic religious education and ethics also requires more innovative and creative learning methods such as:<sup>16</sup>

- a. Gamification; the use of game elements in learning can increase student engagement. By making religious learning more fun, students will more easily absorb religious and ethical values.
- b. Online Learning; Online learning can be an effective alternative to reach students, especially in situations that limit physical interaction. Through online platforms, religious and ethical learning materials can be delivered in a more flexible and accessible manner.
- c. Contextual and Critical Approach; Teaching religion with a contextual and critical approach helps students to understand the teachings of Islam in everyday life. This approach allows students to relate religious values to social issues that occur in the digital world.

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<sup>15</sup> Lasisi & Glory O. Adujah, (2025)

<sup>16</sup> Astri Dwi Andriani and others, *Pendidikan Agama Islam Di Era Disrupsi* (Tohar Media, 2022).

Revitalizing Islamic religious education and ethics in the era of the industrial revolution 4.0 is a very important step to create a generation that is not only intellectually intelligent, but also has good character. By integrating religious and moral values in Islamic religious learning that utilizes technology, we can form a young generation, alpha generation, generation Z that is resilient and has character in facing global challenges. Therefore, there is a need for cooperation between the government, educational institutions and the community in realizing the noble and lofty goals of Islamic education.

Advances in digital technology, automation, artificial intelligence, and global connectivity have influenced almost every aspect of human life, including education. The millennial generation, as a digital generation born and raised alongside technological advancements, possesses distinct characteristics such as critical thinking, a preference for freedom, a tendency toward instant gratification, and widespread access to information. In this context, Islamic Religious Education and Character Education faces both challenges and opportunities to fulfill its functions in a more adaptive and relevant manner.

Islamic Religious Education and Character Education are not only tasked with transmitting knowledge about Islamic teachings but also with instilling deep spiritual, moral, and social values. In this era, religious education must be able to address the practical aspects of millennials' daily lives, such as how to use social media wisely, avoid negative content, cultivate empathy, and maintain ethics in the digital world. Dogmatic and theoretical religious education alone is no longer sufficient. A contextual, dialogical, and applied approach is needed so that Islamic teachings can be internalized and manifested in real behavior.

Additionally, the use of digital technology in the learning process is also an important aspect. Islamic Religious Education teachers must be able to transform themselves into creative and innovative facilitators, utilizing digital learning media such as videos, podcasts, infographics, and interactive applications to spark students' interest in learning. On the other hand, character education must also be directed toward fostering resilient, tolerant, responsible, and critical yet courteous behavior in the dynamic online world.

### **The Role of Islamic Religious Education (PAI) and Ethics in Facing the Era of Industrial Revolution 4.0.**

Revitalization of Islamic Religious Education (PAI) and Ethics in primary and secondary schools in the era of the Industrial Revolution 4.0 is a critical response to the challenges of education in the midst of very dynamic global changes. The Industrial Revolution 4.0 is characterized by digitalization, automation, and integration of technology in almost all aspects of life, including education. In the context of this research, PAI and Budi Pekerti education must be strengthened so that it remains relevant and able to become a pillar in the formation of the character of a religious and noble young generation.

One of the main challenges in revitalizing PAI and Budi Pekerti is how education can respond to the changing learning paradigm of the digital generation. Children in this era grow up in an ecosystem that is highly dependent on technology, so conventional learning methods often lack their attention. Therefore, it is necessary to innovate in the learning approach. The use of

digital technology, such as interactive applications, learning videos, and social media, is a great opportunity to create more interesting and meaningful learning.<sup>17</sup>

However, technological innovation must still be directed to support the essence of PAI and Budi Pekerti education, which is to form religious characters and noble morals. Strengthening spiritual and moral values should not be eroded by the rapid flow of digital information. Instead, these values should be integrated into digital media so that students are not only intellectually intelligent, but also have balanced emotional and spiritual intelligence.<sup>18</sup>

The revitalization strategy also needs to adjust to the principle of “student-centered learning” which provides opportunities for students to become active subjects in learning. In the context of PAI and Budi Pekerti, this approach can be done through project-based learning or problem-based learning methods that are relevant to students' daily lives. For example, students can be given the task to identify moral challenges in social media and find solutions based on Islamic values. This not only teaches theory, but also practices religious and ethical values in real life.<sup>19</sup>

On the other hand, the role of teachers is also a key factor in the success of PAI and Budi Pekerti revitalization. Teachers must be able to adapt to technology while being moral role models for students. Teacher competencies in the digital era must include digital literacy, creativity in developing materials, and the ability to build emotional relationships with students through a humanist approach.<sup>20</sup>

The Industrial Revolution 4.0 also demands synergy between schools, families and communities. PAI and Budi Pekerti education cannot rely solely on school institutions, but also requires support from the family as the first educational environment and the community as a broader educational environment. For example, a collaboration program between schools and parents in monitoring children's digital activities can help maintain the consistency of character education at home and school.<sup>21</sup> In other words, the revitalization of PAI and Budi Pekerti in the era of the Industrial Revolution 4.0 is not only about modernizing learning methods, but also about strengthening cross-sector collaboration to ensure character education remains relevant and significant in the midst of changing times.

Revitalizing Islamic Religious Education (PAI) and Character Education in the Industrial Revolution 4.0 era is a crucial strategic effort to nurture a generation that excels not only in intellectual capacity but also possesses strong moral integrity and spiritual grounding. Technology

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<sup>17</sup> Ridwan Ridwan, ‘Integrasi Teknologi Digital Dalam Pembelajaran Pendidikan Agama Islam Di Era Industri 4.0’, *Proceedings Series on Social Sciences & Humanities*, 4 (2022), pp. 23–26, doi:10.30595/pssh.v4i.287.

<sup>18</sup> Hilda Melani Purba and others, ‘Pendidikan Karakter Di Era Digital: Tantangan Dan Strategi’, *Jurnal Pendidikan Dan Ilmu Sosial (Jupendis)*, 2.3 (2024), pp. 236–46, doi:10.54066/jupendis.v2i3.2038.

<sup>19</sup> Arya Hasan As’ari, Nur Rofiqah, and Mukh Nursikin, ‘Project Based Learning Dalam Pendidikan Agama Islam’, *Khatulistiwa: Jurnal Pendidikan Dan Sosial Humaniora*, 2.4 (2023), pp. 178–89, doi:10.55606/khatulistiwa.v2i4.963.

<sup>20</sup> Siti Khopipatu Salisah, Astuti Darmiyanti, and Yadi Fahmi Arifudin, ‘Peran Pendidikan Agama Islam Dalam Membentuk Karakter Peserta Didik Di Era Digital: Tinjauan Literatur’, *Jurnal Pendidikan Islam*, 10.1 (2024), pp. 36–42.

<sup>21</sup> Liya Lisnawati, Wahyudin Wahyudin, and Jennyta Caturiasari, ‘Analisis Implementasi Projek Penguatan Profil Pelajar Pancasila Dalam Mengembangkan Pendidikan Karakter Siswa Sekolah Dasar’, *Jurnal Sadewa: Publikasi Ilmu Pendidikan, Pembelajaran Dan Ilmu Sosial*, 1.3 (2023), pp. 48–78, doi:10.61132/sadewa.v1i3.36.

offers great opportunities to enhance learning, but also presents risks in the form of exposure to negative content that can damage religious and moral values. Therefore, the integration of digital literacy in PAI is important so that students are able to utilize technology wisely, critically, and ethically.<sup>22</sup>

In this context, the PAI and Budi Pekerti curriculum must be redesigned to be more relevant to the challenges of the times. Teaching materials should not only contain normative teachings, but also address contemporary issues such as digital ethics, environmental sustainability, and the impact of globalization. This approach makes it easier for students to understand how religious teachings can be applied in a modern context, so that learning becomes more contextual and meaningful.<sup>23</sup> In addition, value-based learning should be designed to internalize values such as honesty, tolerance and responsibility through interactive methods, such as simulations or group discussions, involving real situations.

The utilization of technology in PAI learning should be more than just an information delivery tool. With online or hybrid learning, students can access materials at any time, but the success of this approach depends on the teacher's ability to facilitate meaningful interactions. Technology should be used to create collaborative and reflective learning experiences, so that students not only understand religious concepts but are also able to apply them in real-life contexts. In addition, the integration of technology makes the learning process more adaptive and personalized, adjusting to students' individual needs. Therefore, technology literacy training for teachers is needed to ensure that the use of technology supports character building and does not simply replace conventional methods.<sup>24</sup>

To build students' emotional and spiritual engagement, technology-based learning content also needs to be filled with interesting narrative elements, such as inspirational stories from religious figures. This strategy not only builds students' connection with religious values, but also strengthens their Islamic identity amid the increasingly strong influence of global culture.<sup>25</sup> Meanwhile, strengthening school culture based on religious values, such as the implementation of routine religious activities, habituation of positive values, and role models from teachers, is an effective step in shaping student character in a sustainable manner.

This revitalization requires integrated policy support. The government should pay attention to developing teacher competencies, providing digital infrastructure in schools, especially in remote areas, and improving the learning evaluation system. Evaluation should not only measure students' cognitive understanding of teaching materials, but also how religious and

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<sup>22</sup> Nurul L Mauliddiyah, 2021, p. 6.

<sup>23</sup> Sucipto Sucipto and Dian Hidayati, 'Manajemen Kurikulum Berbasis Karakter Diera Digital Pada Muhammadiyah Boarding School (MBS) Weleri Kendal', *Jurnal Ilmiah Mandala Education*, 9.3 (2023), pp. 1955–60, doi:10.58258/jime.v9i3.5765.

<sup>24</sup> M I Sholeh, 'Strategi Manajemen Organisasi Pendidikan Islam Dalam Menghadapi Tantangan Global', *Edu Journal Innovation in Learning and Education*, 2023 <<http://ejournal.insud.ac.id/index.php/edu/article/view/456>>.

<sup>25</sup> Aqsha Apriza Hermawan, Maulida Rizkia Irfan Hadi, and Muhammad Ikhsan Sauqi, 'Manajemen Agama Islam Di Era Digital: Tantangan Dan Peluang Bagi Generasi Milenial', *Journal Islamic Education*, 1.3 (2023), pp. 403–13.

moral values are applied in daily life through project-based or portfolio-based assessment models.<sup>26</sup>

PAI value-based inclusive education also has an important role in building social harmony amid the diversity of cultures and religions in Indonesia. By making PAI a medium for instilling tolerance, empathy, and respect for differences, students can grow into religious individuals while playing an active role in maintaining the integrity of a pluralistic nation.<sup>27</sup> Therefore, PAI must be more than just the delivery of religious doctrine, but rather as a medium of character building that is relevant to social needs.

The synergy between the government, schools, teachers, families, and communities is the key to the success of the revitalization of PAI and Budi Pekerti. A joint commitment is needed to ensure that religious education is not only a means of transferring knowledge, but also a medium for character transformation. With a relevant and contextual approach, PAI can produce a generation that is religious, adaptive, and ready to face the challenges of the digital era without losing its Islamic values.

Islamic Religious Education (PAI) and Ethics have a very urgent and decisive role in shaping the character and personality of the younger generation. In this increasingly complex and rapidly developing era, namely the era of the industrial revolution 4.0, the challenges to religious and ethical learning are increasingly complex. Increasingly advanced technology has a significant impact on the lifestyle of elementary (SD) and secondary (SMP / SMA) school children. Although technology provides various conveniences, it is necessary to revitalize religious and ethical education in order to keep pace with these developments without losing the moral values that exist in society. Therefore, this revitalization becomes very important to integrate religious and moral values in facing various challenges of the times, such as technological advances, shifting cultural values, and increasingly large social challenges. Thus it is important for educators, especially in the context of Islamic education, to adjust teaching methods that are more relevant to the times.

## Challenges of Islamic Religious Education and Ethics in the Era of Industrial Revolution 4.0

The era of the Industrial Revolution 4.0, which is characterized by digital technology, internet of thinks (IoT) artificial intelligence (AI) and big data, has a major impact on children's learning patterns. This change in lifestyle often risks reducing children's attention to moral and religious values. Some of the challenges faced in religious and ethical education are:<sup>28</sup>

1. Influence of Technology and Sosial Media; Technology and social media offer easy access to information, but also bring negative influences such as uneducative and morally damaging

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<sup>26</sup> Bahrum Subagiya, 'Pengembangan Kurikulum Dan Teori-Teori Belajar Di Program Studi Pendidikan Agama Islam Universitas Ibn Khaldun Bogor', *Idarah Tarbawiyah: Journal of Management in Islamic Education*, 3.2 (2022), p. 69, doi:10.32832/itjmie.v3i2.7639.

<sup>27</sup> Fajri Sodik, 'Pendidikan Toleransi Dan Relevansinya Dengan Dinamika Sosial Masyarakat Indonesia', *Tsamratul Fikri | Jurnal Studi Islam*, 14.1 (2020), p. 1, doi:10.36667/tf.v14i1.372.

<sup>28</sup> Ahmad Akbar and others, 'Penerapan Evaluasi Portofolio Dalam Pembelajaran Pendidikan Agama Islam Dan Budi Pekerti Di SMP Negeri 6 Sukadana', *Journal of Education Research*, 5.4 (2024), pp. 5567–75.

- content. This can reduce the depth of religious understanding and ethics that should be taught from an early age.
2. Cultural Value Challenge; The era of globalization, which involves intercultural interaction, brings great challenges to the formation of children's character. Traditional values, including ethics in accordance with Islamic teachings, are often eroded by foreign cultures that are not always in line with the values of the Nation's morality.
  3. Teacher Engagement and Learning Facilities; Many teachers have not fully utilized technology in the learning process of PAI and ethics, which results in the lack of attractiveness of religious learning in schools. More innovative and interactive learning facilities and methods are needed to attract students' interest and attention.

One of the major challenges faced by education in the era of the Industrial Revolution 4.0 is the integration of value-based education. The purpose of value education is to prevent the rise of social problems such as crime, moral decline, and drug abuse among the younger generation. Through learning that emphasizes moral and ethical values, students are expected to develop the ability to distinguish between right and wrong, allowing them to choose positive values that enhance their quality of life within society. However, the rapid advancement of technology has led many students to become increasingly complacent, irresponsible, and morally degraded, which has contributed to the growing number of criminal cases involving youth. The widespread use of social media platforms has also made access to information and communication easier, but at the same time has opened opportunities for cybercrime. These conditions highlight the urgent need for educators to strengthen students' moral character and reinforce value education, ensuring they remain grounded and not easily influenced by the fast-paced technological developments of the Industrial Revolution 4.0.<sup>29</sup>

Ikhwanus Shafa's thinking is a solution to educational problems in the modern era because a student must have a good religious foundation in order to have good morals so that the teaching and learning process can be carried out properly because there is mutual respect between teachers and students. If students already have good morals, they will apply and practice the knowledge they get at school in their daily lives. So that a millennial generation with good morals will be created. If a student has good morals, he will be educated so that he is able to protect himself from unhealthy relationships. And whatever the latest facilities he gets from his parents will be used according to his needs and not misused for things that are forbidden by Allah, for example if the child is given a gadget, the child only uses it for positive things and does not use it for negative things such as watching indecent videos or plagiarizing from the internet when doing assignments.<sup>30</sup>

## CONCLUSION

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<sup>29</sup> Sofia Gussevi and Nur Aeni Muhfi, 'Tantangan Mendidik Generasi Milenial Muslim Di Era Revolusi Industri 4.0', *Paedagogie: Jurnal Pendidikan Dan Studi Islam*, 2.01 (2021), pp. 46–57.

<sup>30</sup> Parhan and others, 'Tantangan Mendidik Generasi Muslim Milenial Di Era Revolusi Industri 4.0 Untuk Menciptakan Lingkungan Pendidikan Islam Modern'.

Islamic religious education (PAI) in the era of the Industrial Revolution 4.0 is directed at improving teachers' competencies in digital literacy and technology-based pedagogy. The curriculum needs to be developed in an adaptive and contextual manner by integrating relevant and engaging digital media. In addition, it is important to collaborate between technology and Islamic values through the use of social media and educational applications to convey moral messages. For example, teachers can use social media and educational apps to share Islamic values and moral messages in a fun and effective way. Character education must also be strengthened by instilling values of tolerance, empathy, and honesty that are relevant to global challenges. This revitalization requires synergistic support from schools, families, communities, and the government, particularly in providing digital infrastructure and ongoing teacher training. Therefore, in facing changes in the Industrial Revolution 4.0 era, strengthening of spirituality and sociality is needed which is realized in the form of Islamic Religious Education and Character Education. Because education cannot avoid change and the flow of technological development, progress in the Industrial Revolution Era can be a tool as well as a medium in transforming the values of religion and culture of the nation.

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