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The Implementation of Deep Learning Based Islamic Education in SMK Batik 1 Surakarta

Nisrina Atiqoh S Jutin[1], Muhammad Wildan Shohib[2]
[1,2]Universitas Muhammadiyah Surakarta
g000220121@student.ums.ac.id[1], mws543@ums.ac.id[2]

ABSTRACT

The rapid advancement of digital technology has transformed educational practices, demanding learning approaches that are adaptive, meaningful, and relevant to 21st-century learners. This study investigates the implementation of deep learning based Islamic Education at SMK Batik 1 Surakarta, focusing on its impact, challenges, and supporting strategies. The research employed a qualitative with a phenomenological approved. Data were collected through classroom observations, in-depth interviews with teachers and students, and documentation, and were analyzed using an interactive model consisting of data reduction, data display, and conclusion drawing. The findings reveal that the implementation of deep learning emphasizes three core principles: mindful, meaningful, and joyful learning. Teachers function as facilitators by applying active learning models such as Problem Based Learning (PBL) and Project Based Learning (PjBL) to enhance critical thinking, collaboration, and student engagement. The approach strengthens students' religious character and learning motivation. However, its implementation faces several challenges, including limited digital infrastructure, restrictions on gadget use, and limited instructional time. To address these issues, teachers adopt adaptive strategies such as alternative learning media, peer tutoring, and the integration of Islamic values into routine school activities. Overall, the success of this approach depends on teacher creativity and collaborative support from the school community..

Keywords : deep learnig, Islamic Education, active learning, religious character, vocational education.

INTRODUCTION

The rapid advancement of digital technology has significantly transformed the educational landscape. This transformation requires educators to develop learning processes that are innovative, adaptive, and relevant to the needs of twenty-first-century learners. Digital technology provides broad opportunities to create more dynamic learning experiences through diverse media and easily accessible information sources (Cunha, 2025). However, the widespread availability of information also presents new challenges, particularly the rapid spread of misinformation or hoaxes. This situation highlights the importance of education that not only transfers knowledge but also develops students' critical thinking skills and their ability to evaluate information accurately (Kovač et al., 2025). In this context, education should not merely focus on intellectual achievement but also on the development of moral character and ethical responsibility. Quality education is expected to shape individuals who are not only academically competent but also morally grounded and socially responsible. Religious education plays a crucial role in this process because it promotes moral values, ethical behavior, and social

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responsibility, thereby fostering individuals who demonstrate integrity and civility in society (In'ami et al., 2025).

Islamic Education is one of the subjects that plays a strategic role in shaping students' religious character while also supporting the development of twenty-first-century competencies such as critical thinking, communication, and reflective understanding of religious values. Based on observations conducted at SMK Batik 1 Surakarta, Islamic Education learning contributes significantly to the development of students' religious character. Nevertheless, several challenges in its implementation remain. As a continuously evolving institution, SMK Batik 1 Surakarta possesses great potential for implementing deep learning; however, to ensure a smooth process, synchronizing existing digital facilities with the requirements of cutting-edge technology is a vital step to be optimized collectively, alongside school policies regarding mobile device management that currently limit student access during the learning process. To address these challenges, one relevant approach is deep learning–based instruction. This approach encourages students to develop a deeper understanding of learning materials, connect knowledge across topics, and apply what they learn to real-life contexts (Kemdikdasmen RI, 2025). In addition, deep learning supports the development of critical, reflective, and analytical thinking skills that are essential in modern education (Husni Rahiem, 2025). This approach aligns with the concept of holistic education, which emphasizes a balanced development of cognitive, affective, and psychomotor domains in the learning process (Qolbi & Hamami, 2021; Fitria & Fadriati, 2022).

The implementation of deep learning also reflects a shift in educational paradigms from the mere acquisition of textual knowledge toward meaningful and transformative learning processes (Isnayanti et al., 2025). In an increasingly complex global environment, students are required not only to memorize information but also to develop strong conceptual understanding and the ability to relate knowledge to real-life situations (Kharisma et al., 2025). Therefore, deep learning–based instruction is considered capable of making learning more contextual and meaningful, enabling students to develop essential twenty-first-century skills such as critical, analytical, and creative thinking (Muvid, 2024). Furthermore, this approach promotes a student-centered learning environment in which students actively participate in the learning process through independent and collaborative activities (Mahulae & Tumanggor, 2025). Through deep learning, students are encouraged not only to understand concepts theoretically but also to connect knowledge with real-life experiences and values (Faridah et al., 2025). Consequently, the implementation of deep learning in Islamic Education learning is expected to foster students who are not only intellectually competent but also possess strong religious character and reflective thinking abilities (Ardiansyah & Nugraha, 2025; Sari & Arta, 2025).

Previous studies indicate that religious education is often perceived as less engaging because it tends to focus primarily on cognitive aspects, while the affective

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and psychomotor dimensions essential for the application of religious values in everyday life receive less attention (Yusuf et al., 2024). In fact, Islamic Education should not merely emphasize the transfer of knowledge but should also facilitate the contextual and practical internalization of religious values (Muhaimin, 2018; Latifah et al., 2026). Therefore, a more transformative learning approach is needed to enable students to reflect upon, internalize, and practice religious teachings in their social lives. Deep learning is considered an effective approach to promote comprehensive understanding, analytical thinking, and problem-solving skills among students (Arif et al., 2025; Fatmawati, 2025; Mahardika & Jaya, 2025). In educational contexts, this approach also emphasizes reflective learning and the integration of conceptual knowledge with spiritual values in real-life situations (Fullan et al., 2018). However, studies examining the implementation of deep learning in Islamic Education at the vocational secondary school level remain limited, particularly in Indonesia.

Based on this context, this study aims to analyze the implementation of deep learning in Islamic Education at SMK Batik 1 Surakarta and to identify the challenges encountered during its implementation. The findings of this study are expected to contribute to the development of more adaptive, contextual, and sustainable Islamic Education learning models that are relevant to the demands of education in the digital era (Muttaqin et al., 2025).

METHODS

This study employed a descriptive qualitative design with a phenomenological approach to explore the lived experiences of Islamic Education teachers in planning, implementing, and evaluating deep learning–based instruction at SMK Batik 1 Surakarta. The phenomenological approach was selected because it allows for an in-depth exploration of the meanings embedded in participants' experiences, thereby providing a deeper understanding of how Islamic Education teachers engage with and interpret the process of technology-supported deep learning in classroom practice.

Data were collected through in-depth interviews with three Islamic Education teachers who had implemented deep learning–based instruction at SMK Batik 1 Surakarta. The participants were selected using purposive sampling, whereby informants were chosen based on specific criteria, namely Islamic Education teachers who possessed relevant experience in applying deep learning approaches in their teaching practices. The collected data were analyzed using qualitative data analysis techniques consisting of three main stages: data reduction, data display, and conclusion drawing. The data reduction stage involved filtering and simplifying information obtained from the interviews, while the data display stage organized the reduced data systematically to facilitate interpretation. Finally, conclusions were drawn by interpreting the presented data in order to gain a comprehensive understanding of the phenomenon under investigation. To ensure the validity and credibility of the research findings, source triangulation and method

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triangulation were employed. Source triangulation involved comparing information obtained from different participants to examine the consistency of the findings, while method triangulation was conducted by using more than one data collection method, including observations and interviews with Islamic Education teachers at SMK Batik 1 Surakarta. The verification process in this study followed the interpretative model developed by Moustakas, which emphasizes the description and interpretation of participants' lived experiences to uncover the essential meaning of the phenomenon being studied.

RESULTS AND DISCUSSION

Understanding and Preparation for Deep Learning Implementation

Findings from interviews with three Islamic Education teachers at SMK Batik 1 Surakarta show that teachers understand deep learning as an approach that goes beyond memorization and emphasizes students' ability to relate learning materials to real-life contexts. This approach aims to foster deeper understanding while encouraging religious awareness and meaningful engagement in learning. As explained by Informant 1, "*pembelajaran mendalam dimana siswa tidak hanya menghafal saja tetapi juga mengaitkan dengan konteks kehidupan nyata siswa serta menumbuhkan kesadaran beragama*". This understanding aligns with the concept of deep learning proposed by Marton and Säljö, which emphasizes comprehension of meaning and relationships between concepts, as well as with constructivist learning theory that views knowledge as actively constructed through learners' experiences and reflections. In practice, the implementation of deep learning at the school is guided by three key principles: mindful, meaningful, and joyful learning. Mindful learning emphasizes students' awareness and active involvement during the learning process, while meaningful learning encourages students to connect new knowledge with their daily experiences through activities such as discussions, case studies, and project-based assignments. Informant 1 noted that this approach encourages active participation so that "*siswa tidak hanya memahami secara mendalam saja, namun guru juga mengajak siswa untuk mengadakan diskusi, studi kasus, dan proyek*". Meanwhile, the principle of joyful learning focuses on creating a pleasant and motivating learning environment. Teachers frequently incorporate interactive strategies such as games or ice-breaking activities to maintain students' enthusiasm. Informant 3 explained that when students begin to feel bored, teachers apply joyful learning strategies such as short ice-breaking activities to restore their motivation and focus.

The successful implementation of these principles requires careful instructional preparation. Teachers begin by developing teaching modules that include determining Learning Outcomes (Capaian Pembelajaran) and formulating specific Learning Objectives. They also design assessment instruments such as Student Worksheets (LKPD) and select appropriate learning strategies that accommodate diverse student characteristics. This preparation reflects the

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principles of differentiated instruction within the Merdeka Curriculum, which emphasizes adapting teaching methods to students' diverse learning needs and styles. Informant 1 explained that teachers also prepare engaging visual learning media such as PowerPoint presentations because relying solely on lectures may reduce students' attention. In addition, teachers prepare alternative strategies to anticipate technical disruptions such as device problems or power outages. Since deep learning is still relatively new in the school context, the institution supports teachers through professional development programs such as workshops and In-House Training (IHT) to strengthen their understanding of this approach before implementing it in classroom practice. Despite these efforts, several challenges remain in implementing deep learning. One major challenge is the diversity of student characteristics, particularly differences in critical thinking abilities, motivation, and learning independence. Informant 1 noted that some students are highly active and critical, while others tend to be less motivated. In addition, limited instructional time also affects the implementation of deep learning. Although Islamic Education lessons are allocated three instructional hours, part of the time is used for religious habituation activities such as reciting Asmaul Husna and morning dhikr. Another challenge relates to technological limitations, particularly school policies that restrict students' use of mobile phones during school hours. Informant 3 stated that this policy limits the use of digital learning tools such as Quizizz or other game-based platforms. Consequently, teachers often combine deep learning strategies with conventional teaching methods to ensure that learning objectives are still achieved. These findings indicate that while deep learning offers significant pedagogical potential, its implementation is strongly influenced by contextual factors such as student diversity, institutional policies, and the availability of technological resources.

Implementation Process of Deep Learning–Based Islamic Education Learning

The implementation of deep learning in Islamic Education at SMK Batik 1 Surakarta is carried out systematically based on teaching modules prepared by teachers. The learning process generally follows structured stages beginning with introductory activities such as prayer, attendance checking, and apperception through guiding questions to stimulate students' curiosity and connect prior knowledge with new material. As stated by Informant 1, "*For the learning steps, just follow the existing guide or in this case the teaching module*". Similarly, Informant 2 explained, "*The learning steps follow the teaching module, such as the first opening, then we invite students to remember the previous material, then continue with prayer, then check student attendance by taking attendance, then start asking questions about the material that will be presented*". These preparatory stages function as a cognitive bridge that supports deeper conceptual understanding among students. During the core learning activities, teachers strive to create an interactive and engaging learning environment to prevent boredom and encourage participation. Strategies such as

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ice-breaking activities and flexible learning arrangements are often integrated into the lesson. Informant 3 explained, "*We modify the learning to be as enjoyable as possible so that students don't get bored easily during learning*". Teachers also apply instructional models such as Problem-Based Learning (PBL) and Project-Based Learning (PjBL), which align with the principles of deep learning. For instance, students are assigned collaborative projects analyzing social issues and producing video content related to real-life problems, such as alcohol consumption or drug abuse. As stated by Informant 1, "*The learning model that I often use is the Project Basic Learning model... then I also direct students to make videos that are done in groups about a case that occurred in the community.*". Although the learning process emphasizes student-centered approaches, teachers still provide initial explanations and guidance to ensure that students understand the learning concepts before engaging in independent or collaborative tasks. Informant 3 emphasized, "*As teachers, we try as much as possible to accompany students because if we tell them to walk alone, they still won't be able to do it*". The learning materials are also contextualized with students' real-life environments and future professional contexts. Informant 2 stated, "*This deep learning integration is connected to life in the school and social environment*", while Informant 1 added that ethical values are often linked to workplace ethics from an Islamic perspective. To support learning, teachers use various media such as PowerPoint presentations, videos, printed materials, and online platforms like Quizizz. However, the use of digital platforms is limited due to school policies requiring students to submit their smartphones during class hours. Digital media in the horizon of Islamic education is placed as a means (wasilah) to strengthen the instillation of religious values in students, rather than simply being the final orientation of the learning process (Nuraini & Shohib, 2025).

However, even though it is useful, excessive use of technology risks disrupting students' concentration in absorbing learning material, so strict supervision and collaboration between parties is needed to maintain the stability of student understanding (Khoirunnisa & Shohib, 2025). The success of deep learning implementation is supported by collaboration among teachers, students, and school leadership, as well as continuous monitoring through formative and summative assessments. Informant 1 noted, "*All school residents are involved in the implementation of deep learning-based learning*.". Teachers also observe positive changes in students' engagement, understanding, and attitudes. Informant 1 explained, "*students' comprehension... students' faith is seen to be getting stronger, then students' work ethic is also increasing*", while Informant 3 observed that students become more enthusiastic and less bored during Islamic Education lessons. To address challenges such as low participation, teachers provide mentoring, adapt teaching strategies, and sometimes integrate game-based activities. Overall, these findings indicate that deep learning in Islamic Education learning not only strengthens students' cognitive understanding but also contributes to their character development and meaningful engagement in the learning process.

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Challenges and Solutions in the Implementation of Deep Learning

Despite the various advantages offered by deep learning, its implementation in Islamic Education at SMK Batik 1 Surakarta still encounters several challenges. One of the primary obstacles relates to students' readiness and discipline during the learning process. Teachers reported that classroom management often requires additional time because some students are not fully prepared when the lesson begins, such as eating in class after break time or not wearing uniforms properly. As explained by Informant 1, "*The challenge lies in the readiness of the students, where when the teacher enters the class there are still children eating, there are still clothes that have not been put in, in essence they are not yet orderly, so this causes time to be cut to organize the children first.*". For teachers, addressing these issues is not merely a matter of classroom order but also part of character formation. Informant 1 further emphasized that teachers should prioritize character development alongside academic instruction, noting that simple habits such as reminding students to tidy their uniforms before entering the classroom gradually shape positive behavioral patterns. This perspective is consistent with the view that character education should be implemented comprehensively in both academic and non-academic contexts (Nirwana & Mujahidin, 2023). Another challenge concerns the limited instructional time available for Islamic Education lessons, although the subject is allocated three instructional hours, part of this time is used for school habituation programs such as the recitation of *Asmaul Husna* and morning *dzikir*. Informant 1 explained that "*Another obstacle is the limited time where Islamic Religious Education learning at SMK Batik 1 Surakarta is only 3 hours but is cut short to carry out habituation in the form of morning dhikr and Asmaul Husana*.". While this practice reduces the time available for delivering academic material, it simultaneously supports the cultivation of students' religious character. In line with Warsah (2020), habituation activities function as a pedagogical strategy in which teachers provide repeated practice so that students gradually develop behaviors aligned with Islamic values. Teachers build students' religious character through habituation and modeling real behavior supported by continuous supervision at school. With this consistency, teachers do not just teach normatively, but become concreate references for students in internalizing daily moral and ethical values (Ramadhani & Shohib, 2025). To address the limitation of classroom time, teachers integrate Islamic Education values into these habituation activities so that character education continues to be reinforced without overburdening classroom instruction.

Technical constraints also present challenges in implementing deep learning, particularly when unexpected situations such as power outages occur. Because many learning activities rely on digital media, such disruptions may hinder the continuity of instruction. Informant 2 explained, "*media, for example when there is a sudden power outage, so teachers have to think about the worst possible scenario, so teachers need to prepare other strategies*." To mitigate this risk, teachers prepare alternative instructional strategies such as printed teaching modules and conventional lecture

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methods. In addition, differences in students' levels of understanding pose another challenge during the learning process. Teachers address this issue by creating inclusive discussion spaces and encouraging peer-assisted learning. Informant 3 stated, "*Students' understanding varies, the solution might be if they don't understand, they are given a special space for those who don't understand the material, they are given more time to solve the problem, for example by discussing it with friends or asking the teacher directly*". These strategies allow students with different learning abilities to participate more actively in the learning process. Beyond addressing these practical challenges, teachers also emphasize that the fundamental goal of Islamic education extends beyond the transfer of knowledge to the development of students' character. Character education aims to cultivate individuals who not only possess academic competence but also demonstrate moral responsibility and ethical awareness. Al-Khoir (2025) argues that character education functions to instill transformative values that prepare students to contribute meaningfully to society. Within the context of Islamic Education learning, simple disciplinary practices are viewed as essential foundations for building positive habits among students. Moreover, teachers strive to make learning materials more relevant by connecting them with contemporary social issues and trends familiar to students. Informant 1 noted the importance of continuously developing instructional media, explaining that "*Learning media needs to be developed... for example, taking from videos related to the real world, for example marriage or divorce"*. Similarly, Informant 2 emphasized the need to adapt teaching methods to current trends so that learning becomes more engaging, stating, "*What needs to be developed is the method, then following the times or according to current trends... students usually like it when we discuss what they like*". To further strengthen the effectiveness of deep learning, teachers highlight the importance of developing more varied and visually engaging instructional media. The use of films, videos, or documentary materials is considered more effective in capturing students' attention compared to conventional lecture-based instruction. Informant 1 explained that learning activities should provide greater opportunities for student participation, noting that "*Learning needs to be designed to be more varied, so that it can provide space for active participation for children so that children can be more creative*". Research by Sukana (2024) also indicates that appropriate instructional media can enhance learning motivation, strengthen memory retention, and deepen students' conceptual understanding. In addition, teachers emphasize the need to balance theoretical knowledge with practical religious skills, particularly in basic acts of worship such as *wudhu* and *shalat*. Informant 3 observed that many students still require greater practical guidance, stating, "*We need to practice more, because I often meet students nowadays who sometimes don't even do ablution properly, and don't do their prayer movements correctly*." Overall, these findings suggest that the successful implementation of deep learning depends on the availability of adequate facilities, the creativity of teachers in designing participatory learning activities, and the provision of learning

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environments that accommodate diverse student characteristics through differentiated instruction.

CONCLUSIONS

The implementation of deep learning–based Islamic Education at SMK Batik 1 Surakarta represents an educational transformation that shifts the learning paradigm from the mere acquisition of textual knowledge toward the development of deeper and more applicable understanding. This approach integrates three core principles mindful, meaningful, and joyful learning which aim to cultivate students' self-awareness, connect learning materials with real-life experiences, and create an enjoyable learning atmosphere that reduces student boredom. In practice, teachers act as facilitators who employ active learning models such as Problem-Based Learning (PBL) and Project-Based Learning (PjBL) to develop twenty-first-century competencies, including critical thinking and collaboration.

Despite its positive impact on strengthening students' religious character and learning enthusiasm, the implementation of this approach faces several practical challenges. These challenges include limited digital infrastructure, school policies restricting the use of mobile devices in classrooms, and reduced instructional time due to the allocation of time for religious habituation activities. To address these constraints, teachers adopt adaptive strategies by preparing alternative non-digital learning media, providing proportional guidance through peer tutoring, and integrating Islamic values directly into routine habituation activities conducted at school.

The success of this implementation largely depends on teachers' creativity in designing participatory learning activities as well as the collaborative support of the entire school community. The monitoring process is conducted comprehensively through both formative and summative assessments, which not only measure students' cognitive achievement but also function as instruments for identifying students' potential and strengthening their self-confidence. Therefore, the implementation of deep learning in Islamic Education at SMK Batik 1 Surakarta is expected to produce graduates who are not only intellectually and technically competent but also possess strong mental resilience and solid religious character to face the challenges of a rapidly changing era.

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