

Analysis of Digital Literacy Learning Based on the Seven *Alur MERDEKA* Stages

Febi Dwi Widayanti¹, Eny Wahyu Suryanti², Sri Rahayuningsih³, Khoirotul Bariyah⁴

¹ Universitas Wisnuwardhana, Malang, Indonesia; febiwidayanti@wisnuwardhana.ac.id

² Universitas Wisnuwardhana, Malang, Indonesia; enywahyusuryanti@winsuwardhana.ac.id

³ Universitas Wisnuwardhana, Malang, Indonesia; srirahayuningsih@wisnuwardhana.ac.id

⁴ Universitas Wisnuwardhana, Malang, Indonesia; khoirotulbariyah@wisnuwardhana.ac.id

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ABSTRACT

This research analyzes the implementation of digital literacy learning based on the Seven *Alur MERDEKA* stages in several Madrasah (schools focusing on Islamic religious education) of Malang City. Kota Malang. Digital literacy is considered a crucial competency for preparing students to face the digital era, encompassing the ability to access, evaluate, and wisely use information through various technological platforms. Using a qualitative-descriptive approach, the research reveals that the learning model based on the Seven *Alur MERDEKA* stages—*Mulai dari Diri, Eksplorasi Konsep, Ruang Kolaborasi, Demonstrasi Kontekstual, Elaborasi Pemahaman, Koneksi Antar Materi, and Aksi Nyata*—is effective in improving student engagement, digital literacy comprehension, as well as their critical thinking and collaboration skills. The implementation results indicate that the initial stages, such as Starting from Self to Contextual Demonstration, were successfully applied with a success rate exceeding 80%. However, at the Real Action stage, only 55% of students fully carried out direct learning in their environments, highlighting the need for additional support to enhance student engagement in the practical application of digital literacy. Teachers received intensive training to implement this model, which also supported them in creating interactive and relevant learning experiences to student's needs. This research recommends adopting similar models in other schools to strengthen digital literacy and ensure students are better prepared for the challenges of the digital era. Furthermore, it emphasizes the importance of the teacher's role in integrating digital literacy into the curriculum and encouraging students' real actions as a form of sustainable learning implementation.

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Corresponding Author:

Febi Dwi Widayanti

Universitas Wisnuwardhana, Malang, Indonesia; febiwidayanti@wisnuwardhana.ac.id

1. INTRODUCTION

The students need to master digital skills to face future challenges. Digital literacy includes the ability to access, evaluate, use, and participate in various digital media effectively and safely. The development of Information and Communication Technology (TIK) has transformed educational paradigms, requiring serious attention to the development of digital literacy among students. Digital literacy is not merely about mastering technology but also encompasses the ability to understand, evaluate, and utilize information from various digital platforms critically and responsibly. This aligns with Yuniarto, et al (2021) who stated that technology is essential and rapidly advancing, having a significant impact on the education sector. Digital literacy involves the ability to search for, use, and evaluate information effectively through digital technology. It also includes an understanding of digital ethics, cybersecurity, digital creativity, collaboration, and effective communication skills in the digital world.

A literacy culture is a process of developing ways of thinking that align with the demands of the times. In facing changes in the era of globalization, it is crucial to strengthen local culture to prepare future generations to address various challenges and needs of the modern era. Various educational activities are designed to equip you generations with the skills and competitiveness they will need in the future. Literacy has become one of the strategic programs that play a vital role as a provision for the nation's generations in meeting the demands of both the present and the future (Suryanti & Ikawati, 2020).

One effort to improve students' skills is by creating a culture of literacy in schools. Literacy activities demonstrate a lifelong learning approach. To enhance students' reading and writing abilities, the implementation of a literacy culture in schools has a positive impact on the quality of education. To encourage students to read more, schools conduct literacy campaigns that involve all students in participatory activities. This is crucial because, according to several studies, students' literacy skills in Indonesia are concerning. Meanwhile, literacy skills are essential and necessary in the learning process (Prayitno et al., 2022).

Digital literacy was first introduced by Paul Gilster in his seminal work *Digital Literacy*, where he defined it as the ability to understand and utilize information from a variety of digital sources (Gilster, 1997). This concept extends beyond basic reading skills to encompass critical thinking processes necessary for evaluating the credibility and relevance of information accessed through digital media. Gilster (1997) identified four core competencies of digital literacy: the ability to conduct internet searches, navigate hypertext, critically assess information content, and synthesize knowledge from diverse digital resources. According to the Organisation for Economic Co-operation and Development (OECD, 2018), digital literacy is essential for meaningful engagement in today's digitally connected society. It involves a range of skills including the ability to access information, evaluate its authenticity and relevance, and communicate effectively using digital platforms. Complementing these perspectives, Eshet-Alkalai (2004) conceptualizes digital literacy as a composite of cognitive, technical, and sociological skills required to operate proficiently in digital environments. These include competencies in information processing, digital communication, and creative digital expression.

Digital literacy encompasses more than just the ability to operate digital media or software; it involves a broad range of competencies, including cognitive, motor, and emotional skills. It also incorporates visual literacy, highlighting the connection between digital literacy and the broader concepts of media and visual literacy (Nisa et al., 2023).

Research at both global and national levels has emphasized the growing importance of digital literacy. For instance, Widayanti et al. (2024) stressed that information technology should be integrated as a fundamental reference and resource within the learning process. This integration is particularly vital in open and flexible learning environments, which must be adaptable to learners' diverse needs. Their proposed model outlines various strategies to improve students' abilities to access, utilize, and critically evaluate digital information.

Similarly, Azzahra and Amanta (2021) found that while the use of technology in schools has increased significantly, the systematic integration of digital literacy into the curriculum remains limited.

This gap underscores the need for more structured approaches to embedding digital competencies in educational settings.

Furthermore, Fraillon et al. (2020) demonstrated that the implementation of digital literacy programs in schools not only enhances students' technical capabilities but also significantly strengthens their critical thinking skills when engaging with digital content. Their findings support a holistic approach to digital literacy education—one that includes critical analysis, online safety, and ethical digital engagement.

In the context of high school education, Haryanto (2019) developed a digital literacy learning model aimed at improving students' proficiency in navigating digital information. This model incorporates strategic components designed to foster students' skills in accessing, using, and evaluating digital content effectively and responsibly.

The need for digital literacy is also crucial in reducing the technological access gap among students. In some madrasah, there are still significant differences in access to devices and the internet. By integrating digital literacy into the curriculum, madrasah can ensure that every student, regardless of their socio-economic background, has equal opportunities to learn and master technology.

Madrasah in Malang City already has several digital facilities, such as e-learning, document management, and a digital library system. However, these facilities have not been fully utilized in the learning process. Digital literacy is needed to ensure that both teachers and students can make optimal use of these facilities, thereby improving the quality of learning and school administrative efficiency.

This finding highlights the need for learning that aligns with the school curriculum to optimize digital literacy at the school level. Digital literacy instruction in schools is often not fully integrated into the existing curriculum. This can lead to gaps in students' understanding and digital literacy skills. As the government provides more flexibility for schools to design curriculum according to local needs and technological developments, the implementation of digital literacy education becomes relevant to explore.

The *Merdeka* Curriculum is designed to support student-centered learning by providing flexibility to explore their potential and interests. The *Merdeka* Curriculum emphasizes flexibility, student independence, and project-based learning, allowing students to explore their interests while developing digital literacy skills. This differs from the traditional approach which is more structured and less flexible. This aligns with the seven *Alur MERDEKA* stages learning syntax (*Mulai dari diri, Eksplorasi konsep, Ruang kolaborasi, Demontrasi kontekstual, Elaborasi pemahaman, Koneksi antar materi, Aksi nyata*), which offers a progressive learning framework to develop students' skills and understanding. Each stage of the *Alur MERDEKA* is aligned with the existing digital literacy model. For example, *Mulai dari Diri* stage can be associated with personal and reflective digital literacy skills, while *Aksi Nyata* reflects the practical application of digital literacy skills in real-world contexts.

The integration of digital literacy learning through the seven stages of *Alur MERDEKA* offers a transformative approach to education by fostering students' creativity, innovation, and critical engagement with digital technology. This framework guides students in utilizing technology not only as a tool for information access but also as a medium for expressing ideas, producing original content, and collaborating meaningfully with peers. Moreover, it aligns with contemporary educational trends and technological developments, ensuring that students are equipped to navigate the rapidly evolving digital landscape.

The primary objective of this research is to examine the implementation of digital literacy learning based on the *Alur MERDEKA* stages, with a focus on enhancing students' practical competencies and critical awareness in using digital technology effectively and ethically. While previous studies have predominantly emphasized the technical aspects of digital literacy—such as the use of digital tools—few have addressed its critical, ethical, and integrative dimensions within the curriculum. Therefore, this research seeks to fill this gap by offering a holistic model that bridges the divide between technological advancement and classroom practice, preparing students to meet the demands of an increasingly digital society.

This study contributes to the body of knowledge by embedding digital literacy into the curriculum through a project-based and collaborative learning model, as conceptualized in the *Alur MERDEKA*

framework. Unlike traditional approaches that prioritize tool proficiency, this model encourages gradual skill development—from self-reflection to real-world application—thereby enabling students not only to understand and operate digital technologies but also to use them responsibly and creatively. Furthermore, the research offers a practical framework that can be adapted in diverse educational settings, particularly in madrasas, which often face unique challenges related to technological access and infrastructure. Through this approach, students are empowered to become thoughtful, ethical, and capable participants in the digital age.

2. METHODS

This research employs a descriptive qualitative approach to gain an in-depth understanding of the implementation of digital literacy learning based on the seven *Alur MERDEKA* stages in madrasah of Malang City. This approach aims to describe natural phenomena without manipulating variables.

The subjects of this research were randomly sampled as many as 100 people, consisting of 75 students, 20 teachers and 5 madrasa leaders. This research was carried out in several madrasas in Malang City which have implemented learning based on the seven MERDEKA strands. All subjects consented to their participation in the study and were guaranteed their identity.

The research subjects comprise 100 individuals, including 75 students, 20 teachers, and 5 madrasah principals by random sampling. The research is conducted in several madrasah in Malang City that have implemented learning based on the seven *Alur MERDEKA* stages. All subjects agreed to their participation in the research and were guaranteed confidentiality of their identities.

The data collection is carried out through multiple techniques, namely: 1) Interviews: Engaging teachers, students, and administrators to explore their perspectives on the implementation of the seven *Alur MERDEKA* stages in digital literacy learning; 2) Participatory Observation: Direct observation of classroom activities, focusing on how each stage—*Mulai dari diri, Eksplorasi konsep, Ruang kolaborasi, Demontrasi kontekstual, Elaborasi pemahaman, Koneksi antar materi, Aksi nyata*—is implemented; and 3) Documentation: Collecting materials such as syllabus, lesson plans (RPP), student work, and reports on digital literacy-based learning activities.

The data is analyzed using a descriptive qualitative approach, which involves three main stages: data reduction, data presentation, and conclusion drawing/verification. Additionally, simple quantitative data (percentages) from interviews, observations, and documentation is utilized to support descriptive analysis.

To increase data reliability, this research applies data triangulation, namely by comparing the results of various data collection techniques, such as interviews, participant observation, and documentation analysis. Method triangulation was used to ensure consistency of findings by linking interviews with teachers, students and madrasa leaders with the results of direct observations in the learning process, and supporting it with documentary evidence in the form of syllabi, lesson plans and student work results. In addition, source triangulation was carried out by comparing the perspectives of various participants in order to gain a more objective understanding regarding the implementation of learning based on the seven *Alur MERDEKA*. With this approach, the validity and reliability of the data in research can be more guaranteed.

3. FINDINGS AND DISCUSSION

3.1 Findings

In today's digital era, digital literacy has become a fundamental skill that every student must possess. The rapid development of information and communication technology has transformed the ways people learn, work, and interact. Consequently, digital literacy in madrasah is essential to prepare students for a world increasingly connected through digital platforms. As educational institutions,

madrrasah must embrace this transformation by integrating digital literacy into their curriculum, equipping students with relevant skills for the modern era.

Digital literacy extends beyond technical skills; it encompasses understanding of digital ethics, cybersecurity, and online privacy. Students need to be taught how to behave responsibly in the digital space, avoiding cyberbullying, understand the consequences of their digital footprints, and safeguard their personal data. Digital literacy education in madrasah can help students become wise and responsible internet users, capable of navigating the digital world safely and effectively.

3.1.1 Results of Interview Analysis

The interviews aimed to gather information on the implementation of the seven *Alur MERDEKA* stages in digital literacy learning. The process involved 75 students, 20 teachers, and 5 principals from madrasah in Malang City. The findings from the interviews are summarized and presented in the following Table 1:

Table 1. Results of Interview Analysis

Subject/Component	Total (%)
Student	
Feel that learning using the seven-step framework helps them understand digital literacy	80
Consider the <i>Ruang Kolaborasi</i> stage to be the most engaging part	75
Face challenges during the <i>Eksplorasi Konsep</i> stage due to limited access to digital learning resources	35
Teacher	
Understand the concept of the seven <i>Alur MERDEKA</i> stages well	75
Consistently implement the seven <i>Alur MERDEKA</i> stages in teaching	75
Find the seven <i>Alur MERDEKA</i> approach helpful in improving students' digital literacy	80
Encounter challenges during the <i>Aksi Nyata</i> stage due to time constraints and limited facilities	40
Madrasah Principal	
Support the implementation of the seven <i>Alur MERDEKA</i> stages in teaching	100
Observe an improvement in students' digital literacy through this approach	80
Highlight the need for continuous teacher training	75

3.1.2 Results of Observation Analysis

Observations were made by directly observing the process of digital literacy learning in the classroom, focusing on how each stage was applied, such as *Mulai dari diri*, *Eksplorasi konsep*, *Ruang kolaborasi*, *Demonstrasi kontekstual*, *Elaborasi pemahaman*, *Koneksi antar materi*, *Aksi nyata*. The results of the observation are presented in Table 2 below.

Table 2. Results of Observation Analysis

No	Stage (<i>Alur</i>)	Learning Activity	Component	Total(%)
1	M - <i>Mulai dari Diri</i>	Performing reflection through question prompts: Starting with self-reflection on their experiences related to the material to be learned by utilizing digital technology, such as conducting online research and using learning applications	The teacher successfully connects the material with students' experiences.	85
			Students actively share their initial experiences related to the material.	75

2	E - <i>Eksplorasi Konsep</i>	<u>Exploration of material/information related to the learning topic:</u>	The teacher facilitates material exploration with digital sources	70
		Exploring material/information from various digital learning sources, such as articles, videos, podcasts, or educational apps	Some students struggle to independently search for information	35
3	R - <i>Ruang Kolaborasi</i>	<u>Group or pair practice:</u>	Group discussions went well	75
		Reflecting on the learning experience, including challenges faced while searching for and validating digital information through group or pair discussions	Students actively shared ideas and experiences in the group	75
4	D - <i>Demonstrasi Kontekstual</i>	<u>Showcase understanding in front of peers:</u>	Students successfully presented their work	70
		Demonstrating their skills through project presentations, such as creating digital content (videos, info graphics) relevant to the learning topic.	Teachers provided constructive feedback	80
5	E - <i>Elaborasi Pemahaman</i>	<u>Giving opinions or asking questions:</u>	Teachers effectively encouraged deeper understanding through Q&A	80
		Deepening understanding through class discussions, where students can revise, improve, and elaborate on their projects based on the feedback received.	Students were able to re-explain the material	75
6	K - <i>Koneksi Antar Materi</i>	<u>Connecting the topic to other materials or real-life situations:</u>	Students successfully linked the material to other lessons	70
		Identifying the connections between the material being studied and other topics in the same or different subjects to gain a holistic understanding related to teaching.	Teachers assisted students in identifying connections between concepts	75
7	A - <i>Aksi Nyata</i>	<u>Reflecting on the learning process and creating practical actions for application in learning:</u>	Students implemented real actions	55
		Reflecting or taking real actions at the end of the learning process for each topic studied by applying digital literacy in their daily lives.	Teachers faced difficulties in monitoring the results of implementation outside the classroom	40

3.1.3 Results of Document Analysis

The analysis results of the syllabus, lesson plans (RPP), students' work, and reports on digital literacy learning activities based on the seven *Alur MERDEKA* stages in Madrasah of Malang City are presented in Table 3 below.

Table 3. Results of Document Analysis

Document/Component	Total(%)
Syllabus and Lesson Plan (RPP)	
Syllabus and lesson plans explicitly include the seven <i>Alur MERDEKA</i> stages.	80
Adjustments to digital literacy needs are still minimal.	20
Students's Work	
Students' outputs, such as reports and presentations, demonstrate mastery of digital literacy.	75
Some outputs are less structured, especially in the <i>Demonstrasi Kontekstual</i> stage.	30
Learning Activity Reports	
Documentation of learning activities based on the seven <i>Alur MERDEKA</i> stages is available.	90
Comprehensive evaluation reports on the impact of learning on students	90

3.2 Discussion

3.2.1 Forms of Digital Literacy Culture in Madrasahs in Malang City

Madrasahs in Malang City have adopted various initiatives to cultivate a digital literacy culture among students and teachers. These include structured programs such as the *Gerakan Literasi Madrasah* (GELEM) and the *Gerakan Ayo Membangun Madrasah* (GERAMM), which aim to strengthen literacy and innovation in Islamic educational settings. The development of reading corners, the integration of digital learning tools such as e-learning platforms, Quizizz, e-books, ClassPoint, Kahoot, and Wordwall, and the provision of guidance on the responsible use of social media (WhatsApp, Instagram, Facebook, YouTube, TikTok) reflect a comprehensive approach to embedding digital literacy into daily learning activities. Additionally, the optimization of digital infrastructure and the emphasis on student motivation for academic excellence demonstrate the madrasah's commitment to aligning with national education reforms.

E-learning platforms, in particular, have become a cornerstone of digital learning in madrasahs. These platforms not only facilitate knowledge access but also serve as a medium to improve students' digital literacy competencies. The successful implementation of digital literacy learning models—such as those based on the *Merdeka* Curriculum—heavily depends on adequate infrastructure. As Fullan (2016) argues, institutional support and continuous capacity building are essential for the sustainable success of educational innovations.

3.2.2 Implementation of Digital Literacy Learning Based on the Seven Alur MERDEKA Stages

The *Seven Alur MERDEKA* stages represent a pedagogical framework designed to enhance student-centered learning through digital and collaborative activities. In madrasahs across Malang City, this approach has been adopted with varying degrees of success. The seven stages include: *Mulai dari Diri* (Starting from Self), *Eksplorasi Konsep* (Concept Exploration), *Ruang Kolaborasi* (Collaboration Space), *Demonstrasi Kontekstual* (Contextual Demonstration), *Elaborasi Pemahaman* (Elaboration of Understanding), *Koneksi antar Materi* (Inter-material Connection), and *Aksi Nyata* (Real Action).

Interviews with students, teachers, and school leaders reveal generally positive perceptions toward this model. Approximately 80% of students reported improved digital literacy, particularly in the *Ruang Kolaborasi* stage, where group discussions and peer interactions were emphasized. However, 35% of students experienced challenges during the *Eksplorasi Konsep* stage due to limited access to digital resources and the difficulty of independently exploring materials.

From the teachers' perspective, around 75% found the MERDEKA stages helpful in providing a systematic and contextual learning structure. The stages most favored by teachers were *Mulai dari Diri* and *Ruang Kolaborasi*, which encouraged reflection and active student participation. Still, only 60% of teachers reported successfully implementing the *Aksi Nyata* stage, citing time constraints and limited

infrastructure as the main barriers. Meanwhile, all school principals (100%) expressed full support for the initiative, emphasizing the necessity of ongoing teacher training to ensure each stage is executed effectively—echoing Fullan’s (2016) emphasis on institutional support as a key to educational innovation.

3.2.3 Classroom Implementation of the Seven Alur MERDEKA Stages

Classroom observations confirm that the *Mulai dari Diri* stage was effectively implemented in 80% of observed classrooms. Teachers used reflection questions to assess students’ prior knowledge and learning tendencies, helping to personalize instruction. This aligns with Ryan and Deci’s (2000) self-determination theory, which stresses the role of intrinsic motivation in student engagement and learning.

In the *Eksplorasi Konsep* stage, 70% of teachers effectively facilitated students’ exploration of digital resources, using video materials and e-learning tools. This mirrors global trends in digital education, where educators are increasingly leveraging multimedia to support independent learning (UNESCO, 2023).

Student engagement during the *Ruang Kolaborasi* stage was high (75%), with learners enthusiastically participating in group discussions. These findings support Saifuddin and Wathon (2019), who argue that collaborative learning enhances student engagement and deepens understanding through peer interaction. This stage also resonates with Jenkins et al. (2009) on *participatory culture*, which includes active involvement in collaborative problem-solving and content creation. The use of digital tools to promote collaboration, creativity, and circulation of ideas embodies this culture, fostering a learning environment that encourages students to create and share digital content.

The *Demonstrasi Kontekstual* stage saw 70% of students successfully producing digital artifacts such as videos, posters, or poems, supported by 80% of teachers who provided feedback to refine these outputs. This stage allowed students to apply theoretical knowledge in creative, practical ways.

During the *Elaborasi Pemahaman* stage, teachers engaged 80% of students in discussions aimed at clarifying conceptual misunderstandings. This deeper engagement aligns with Gilster’s (1997) view that digital literacy extends beyond mere access to information—it requires the capacity to critically evaluate and understand digital content. Similarly, in the *Koneksi antar Materi* stage, 70% of students demonstrated the ability to link newly acquired concepts with prior knowledge, supported by 75% of teachers who actively facilitated these connections. Ziliwu et al. (2022) emphasize that such integrative thinking fosters meaningful learning.

The most challenging stage was *Aksi Nyata*, with successful implementation at only 55%. This stage requires students to create projects that apply classroom learning to real-world contexts. Constraints such as limited time, insufficient facilities, and lack of student readiness contributed to lower success rates. Addressing this issue requires strategic interventions, including extended learning time, better access to digital tools, targeted teacher training, and integration of community-based projects. These findings align with Suwanjal and Apriani (2023) as well as Susanty and Marsofiyati (2024), who highlight the need for supportive structures to enable students to apply their learning practically.

3.2.4 Challenges in Implementation

Despite promising outcomes, the implementation of digital literacy learning through the Alur MERDEKA stages faces several challenges in madrasahs. First, limited access to technological facilities continues to hinder student and teacher participation in digital activities. For instance, 35% of students found it difficult to locate digital learning materials independently, particularly during the *Eksplorasi Konsep* stage. This suggests a pressing need for more affordable devices and infrastructure to ensure equity in access.

Second, time constraints affect the implementation of stages that require extended engagement, particularly *Aksi Nyata*. Teachers expressed concern that current class schedules do not provide sufficient time for students to complete real-world projects effectively.

Third, student readiness is another barrier. Many learners still lack foundational digital skills, necessitating additional teacher support during more autonomous stages like *Eksplorasi Konsep* and *Aksi Nyata*. This underlines the importance of scaffolding, especially in educational settings where students have limited prior exposure to digital learning.

3.2.5 Impact of Alur MERDEKA-Based Digital Literacy Learning

The implementation of the Alur MERDEKA model has had a notable positive impact on students' digital literacy development. Interviews and observations reveal that 80% of students felt more confident using digital tools for learning, and 75% demonstrated improved collaboration and communication in group discussions. Furthermore, in the *Elaborasi Pemahaman* stage, 75% of students could effectively articulate their understanding of digital concepts.

Student-created projects and presentations provide evidence of improved critical thinking and creativity. These findings are consistent with Fraillon et al. (2020), who argue that digital literacy not only develops technical competence but also enhances students' analytical abilities. However, the study also reveals that further support is required during the *Aksi Nyata* stage to help students effectively apply their learning outside the classroom.

These insights align with Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the integration of technology, pedagogy, and content to foster 21st-century competencies. For digital literacy learning to be successful, educators must possess a deep understanding of how to blend these elements effectively in practice.

3.2.6 Alignment of Curriculum Documents with Alur MERDEKA Stages

Analysis of lesson plans and syllabi shows that 80% of documents explicitly reference the seven Alur MERDEKA stages. However, alignment remains inconsistent, particularly in the *Eksplorasi Konsep* and *Aksi Nyata* stages. Student assignments indicate that while 70% of learners demonstrate strong digital competencies, 30% still struggle with organizing and presenting their work effectively. This highlights the need for ongoing curricular refinement and teacher guidance.

Reports from classroom observations reveal that teachers are actively documenting learning activities, although the evaluation of student impact has not been thoroughly conducted. These gaps suggest a need for improved monitoring and assessment frameworks to measure digital literacy outcomes more accurately.

The positive influence of the Alur MERDEKA model on student engagement and creativity supports the findings of Dewi and Sunarni (2023), who assert that digital literacy learning encourages innovation and improves technological competencies. Likewise, Ningsih and Barriyah (2024) highlight that MERDEKA-based learning fosters deeper understanding and creativity, enabling students to develop original ideas and connect knowledge across disciplines.

Global digitalization challenges also present opportunities for both teachers and students to explore their interests and talents in a competitive learning environment. By fostering a culture of collaboration, creativity, and critical thinking, the Alur MERDEKA approach positions madrasahs to be not only responsive but also proactive in the face of educational and technological transformation.

4. CONCLUSION

This study examined the implementation of digital literacy learning based on the seven Alur MERDEKA stages in madrasahs in Malang City and found the approach to be largely effective in enhancing student engagement, collaboration, and comprehension—particularly during the *Mulai dari Diri* (80%) and *Ruang Kolaborasi* (75%) stages. These stages successfully fostered reflective learning and

peer interaction, contributing to the development of students' digital competencies. However, notable limitations were identified in the *Eksplorasi Konsep* and *Aksi Nyata* stages, where challenges such as limited technological infrastructure, constrained instructional time, and varying levels of students' digital readiness impeded full implementation. While both teachers and students expressed positive perceptions of the model—acknowledging its value in instructional planning and skill development—gaps remained in providing sufficient access to digital tools and structured support for project-based learning. Furthermore, although curriculum documents referenced the seven stages, they did not fully align with the practical digital literacy needs of students. In light of these findings, future research should adopt a quantitative or mixed-methods design to evaluate the long-term impact of the *Alur MERDEKA* framework and investigate strategies for enhancing the *Aksi Nyata* stage, particularly through community-based and real-world digital projects that promote deeper, applied learning outcomes.

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