

Authentic Assessment Innovation In Islamic Religious Education (PAI) Within The Merdeka Curriculum.

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Keyword

Authentic Assessment, Islamic Religious Education, Merdeka Curriculum, Assessment Innovation, Islamic Values, Digital Learning

Article History

Submission : 18-08-2026
Revised : 25-08-2026
Publish : 06-09-2026

Abstract

The implementation of the Merdeka Curriculum in Indonesia requires a transformation of learning assessment practices that are more comprehensive, contextual, flexible, and oriented toward students' competency development. In this context, authentic assessment has an important role in assessing not only students' cognitive achievement but also their attitudes, skills, religious character, and ability to apply Islamic values in real-life situations. This article aims to examine innovations in authentic assessment for Islamic Religious Education (PAI) learning within the implementation of the Merdeka Curriculum. This study employs a qualitative approach using a literature review method. Data were obtained from relevant scholarly articles, books, policy documents, and other academic sources concerning authentic assessment, Islamic Religious Education, and the Merdeka Curriculum. The findings indicate that authentic assessment innovation in PAI can be developed through project-based assessment, performance assessment, portfolio assessment, contextual assignments, observation of religious attitudes, self-assessment, peer assessment, and the integration of digital technology. These assessment models enable teachers to obtain a more comprehensive picture of students' learning progress by connecting religious knowledge with practical skills and character development. Furthermore, digital platforms and artificial intelligence can support the documentation, monitoring, feedback, and personalization of assessment processes while maintaining ethical and pedagogical considerations. Therefore, innovative authentic assessment can strengthen the effectiveness of PAI learning by promoting meaningful learning, student independence, critical thinking, collaboration, and the internalization of Islamic values. The successful implementation of authentic assessment requires teachers' assessment literacy, appropriate assessment instruments, continuous feedback, and alignment between learning objectives, learning activities, and assessment strategies.

INTRODUCTION

Assessment is an essential component of the learning process because it provides information about students' learning progress, achievement, learning needs, and the effectiveness of instructional strategies. In contemporary education, assessment is no longer viewed merely as an instrument for measuring final learning outcomes, but also as an integral part of learning that can provide feedback and support students in improving their performance. Black and Wiliam (1998) emphasize that formative assessment can contribute significantly to learning improvement when teachers use assessment information to provide meaningful feedback and involve students actively in evaluating their own learning. This perspective is increasingly relevant to educational systems that promote learner-centered, reflective, and competency-oriented learning.

In Indonesia, the transformation of the national curriculum through the Merdeka Curriculum has brought significant changes to the orientation of learning and assessment. The curriculum provides

greater flexibility for teachers to design learning according to students' needs, characteristics, learning readiness, interests, and developmental contexts. Consequently, assessment is expected to become an ongoing process that is integrated with learning rather than being limited to the administration of tests at the end of an instructional unit. Recent studies indicate that assessment in the Merdeka Curriculum emphasizes diagnostic, formative, and summative functions, with formative assessment playing an important role in identifying learning needs, monitoring progress, and determining appropriate follow-up instruction (Daud et al., 2025; Azis & Ayudia, 2024). Thus, the implementation of the Merdeka Curriculum requires teachers to reconsider conventional assessment practices and develop assessment approaches that are more flexible, contextual, and meaningful.

This transformation presents particular challenges in Islamic Religious Education (PAI). PAI has distinctive characteristics because its learning objectives are not restricted to students' mastery of religious knowledge. PAI is also intended to develop faith, worship practices, moral behavior, religious attitudes, and the ability to apply Islamic teachings in everyday life. Therefore, assessment in PAI needs to capture the multidimensional nature of learning outcomes, including cognitive, affective, and psychomotor dimensions. Measuring students' understanding of Islamic concepts solely through written examinations may provide an incomplete representation of their actual competencies. Recent research on PAI assessment in the Merdeka Curriculum demonstrates that cognitive assessment may be conducted through written and oral tests, while affective and psychomotor competencies can be assessed through observation, self-assessment, peer assessment, performance tasks, and demonstrations of religious practices (Aisyah et al., 2024). These findings reinforce the need for assessment models that can examine students' ability to translate religious knowledge into meaningful actions.

One approach that addresses this need is authentic assessment. Authentic assessment emphasizes the evaluation of students' ability to apply knowledge and skills in tasks that resemble real-life situations or meaningful contexts. Gulikers, Bastiaens, and Kirschner (2004) explain that authentic assessment should consider several dimensions, including the authenticity of the task, the physical and social context, the form of assessment, and the criteria used to evaluate performance. Accordingly, authentic assessment does not simply ask whether students know something, but also examines whether they are able to use what they know appropriately in relevant situations. This approach is particularly compatible with PAI because religious education involves the internalization and application of values rather than merely the memorization of concepts.

Within PAI learning, authentic assessment can take various forms, such as project-based tasks, performance assessments, portfolios, contextual assignments, observation of religious attitudes, self-assessment, peer assessment, and demonstrations of worship practices. Such forms of assessment provide opportunities for students to demonstrate their competencies through observable performance and meaningful products. A study by Aisyah et al. (2024) found that authentic assessment in PAI under the Merdeka Curriculum could integrate cognitive, affective, and psychomotor domains through tests, assignments, attitude journals, self-assessment, peer assessment, and performance rubrics. Similarly, Haryadi et al. (2026) reported that authentic assessment can support a holistic evaluation of students' knowledge, attitudes, and skills while strengthening the development of religious character and values.

Despite its potential, the implementation of authentic assessment in PAI remains subject to various challenges. One of the major issues is the gap between the ideal principles of curriculum policy and classroom assessment practices. Teachers may understand the importance of authentic assessment conceptually but experience difficulties in developing appropriate instruments, designing clear performance criteria, managing assessment time, documenting learning evidence, and providing continuous feedback. Research conducted in the context of the Merdeka Curriculum has identified limited teacher readiness, differences in teachers' understanding of assessment, time constraints, and insufficient professional training as persistent challenges in formative assessment implementation (Utami & Oktaviani, 2025). Similar concerns have been identified specifically in PAI, where teachers may still depend substantially on conventional written examinations despite the availability of more diverse assessment approaches (Solehuddin & Rahmah, 2026).

The development of authentic assessment therefore requires innovation not only in assessment instruments but also in the overall assessment process. Innovation can involve the integration of project-based learning, performance tasks, portfolios, contextual case studies, reflective journals,

digital documentation, and technology-assisted feedback. Digital technology can facilitate teachers in collecting evidence of learning, organizing portfolios, monitoring student progress, and providing feedback more efficiently. Nevertheless, technological innovation should not replace the pedagogical principles of assessment. Rather, technology should function as a supporting mechanism that strengthens the validity, efficiency, transparency, and continuity of assessment. In this regard, assessment innovation needs to remain aligned with learning objectives and students' developmental characteristics.

The need for innovation is increasingly important because the implementation of the Merdeka Curriculum is not uniform across educational contexts. Research has shown that although authentic and formative assessment practices have been introduced, the depth and consistency of implementation remain different among schools. Teachers' assessment literacy, school-level support, curriculum resources, and students' involvement are among the factors influencing the quality of assessment practice (Fatmawati & Muhsinin, 2026). In PAI, this issue becomes more complex because teachers must assess not only academic performance but also the internalization of Islamic values and their manifestation in students' behavior. Consequently, assessment instruments need to be carefully designed so that they are capable of capturing both measurable competencies and meaningful expressions of religious character.

Recent studies specifically discussing PAI assessment in the Merdeka Curriculum have provided important insights into the implementation of diagnostic, formative, summative, and authentic assessment. However, much of the existing literature tends to describe assessment implementation in particular schools or analyze individual forms of assessment rather than developing a broader conceptual framework for innovation in authentic assessment. For example, existing studies have examined the implementation of authentic assessment across cognitive, affective, and psychomotor domains (Aisyah et al., 2024), summative assessment in PAI (Fitria et al., 2024), and formative assessment as a reflective tool in PAI learning (Utami & Oktaviani, 2025). These studies indicate the importance of assessment reform but also reveal the need for a more integrative discussion of how different authentic assessment strategies can be innovated and aligned with the philosophical and pedagogical principles of the Merdeka Curriculum.

Furthermore, the relationship between differentiated learning and assessment deserves greater attention. The Merdeka Curriculum recognizes differences in students' readiness, interests, and learning profiles, implying that assessment should provide diverse opportunities for students to demonstrate achievement. Recent research indicates that differentiated learning in PAI may already accommodate variations in content, learning processes, and learning products, yet assessment practices are not always equally differentiated and may still rely heavily on standardized written examinations (Solehuddin & Rahmah, 2026). This condition suggests that authentic assessment innovation should not merely add new assessment techniques but should establish stronger alignment among learning objectives, learning activities, assessment tasks, assessment criteria, feedback, and student characteristics.

Based on this background, authentic assessment innovation in PAI represents an important strategy for strengthening the implementation of the Merdeka Curriculum. Such innovation can help shift assessment from a predominantly measurement-oriented practice toward an assessment-for-learning approach that supports students' cognitive development, religious character, practical skills, autonomy, reflection, and ability to apply Islamic values in real-life contexts. The use of authentic tasks, performance-based assessment, portfolios, reflective activities, peer and self-assessment, digital learning evidence, and structured rubrics provides a broader basis for evaluating student competence. Therefore, this article discusses the concept, forms, implementation strategies, opportunities, and challenges of authentic assessment innovation in Islamic Religious Education within the Merdeka Curriculum. The discussion is expected to contribute a conceptual and practical framework for PAI teachers and educational institutions in designing assessment practices that are more holistic, contextual, student-centered, and consistent with the competency and character orientation of the Merdeka Curriculum

METHODOLOGY

This study employed a qualitative literature review approach to examine innovations in authentic assessment for Islamic Religious Education (PAI) within the implementation of the Merdeka Curriculum. A literature-based qualitative approach was selected because the purpose of the study was to synthesize, interpret, and critically examine existing scholarly findings related to authentic assessment, PAI learning, curriculum transformation, and assessment innovation. Qualitative research synthesis can provide an integrated understanding of patterns, perspectives, and research gaps across existing studies rather than focusing on statistical measurement (Maeda et al., 2022). In educational research, a systematic and transparent review process is also useful for identifying trends, evaluating available evidence, and formulating implications for educational practice (Tonello & Ferreira, 2024).

The literature search was conducted through several academic databases and scholarly information sources, particularly Google Scholar, Scopus-indexed publications, ScienceDirect, and ERIC, complemented by relevant official policy documents concerning the implementation of the Merdeka Curriculum. The search process used combinations of keywords in English and Indonesian, including *“authentic assessment,” “authentic assessment in Islamic Religious Education,” “Islamic Religious Education assessment,” “Merdeka Curriculum,” “assessment innovation,” “PAI assessment,”* and *“formative assessment.”* The use of multiple keyword combinations was intended to identify literature addressing both the conceptual dimensions of authentic assessment and its practical implementation in Islamic Religious Education.

The literature selection process applied predetermined inclusion and exclusion criteria. The inclusion criteria consisted of: (1) scholarly journal articles, academic books, and relevant official policy documents; (2) publications addressing authentic assessment, formative or performance-based assessment, Islamic Religious Education, curriculum reform, or the Merdeka Curriculum; (3) publications that provided conceptual, empirical, or methodological information relevant to the research topic; and (4) publications available in Indonesian or English. Publications were excluded when they were unrelated to educational assessment, did not contain sufficient academic information, were duplicate records, or focused exclusively on assessment contexts that had no relevance to the objectives of this study. A transparent selection process is important in literature-based research because it strengthens methodological rigor and reduces the possibility of relying on arbitrarily selected sources (Maeda et al., 2022).

The selected literature was then analyzed using thematic analysis. The analysis involved several stages: identification of relevant information, coding of recurring concepts, categorization of findings, comparison across studies, and synthesis into major themes. The main analytical themes included the conceptual foundations of authentic assessment, characteristics of authentic assessment in PAI, assessment strategies under the Merdeka Curriculum, technological and pedagogical innovations, implementation challenges, and opportunities for improving assessment quality. Thematic synthesis enables researchers to identify similarities and differences across studies and subsequently construct broader interpretations from the available literature (Maeda et al., 2022). This process also allows qualitative literature reviews to move beyond simple description toward the development of analytical arguments and identification of research gaps.

To enhance the credibility and consistency of the findings, the study compared information from different types of sources, including empirical journal articles, theoretical literature, and official curriculum documents. Particular attention was given to the relevance, methodological quality, publication status, and contribution of each source to the research problem. Studies discussing authentic assessment generally emphasize that authenticity is not limited to the format of an assessment task but also concerns the relationship between the task, context, performance, and criteria used to judge students’ competencies (Gulikers et al., 2004). Therefore, the analytical process considered authentic assessment as a multidimensional concept rather than merely as an alternative to conventional written testing.

The final stage involved interpretive synthesis, in which the findings from the selected literature were integrated to formulate a conceptual understanding of authentic assessment innovation in PAI under the Merdeka Curriculum. The synthesis focused on explaining how different assessment strategies can be integrated to assess students’ cognitive knowledge, religious attitudes, practical skills, character development, and ability to apply Islamic values in authentic contexts. The results of this synthesis were subsequently used to formulate implications for PAI teachers and educational

institutions regarding the development of more holistic, contextual, student-centered, and technology-supported assessment practices.

This methodological approach is consistent with the characteristics of qualitative research synthesis in education, which emphasizes systematic searching, explicit selection procedures, critical examination of relevant literature, and thematic interpretation to produce a comprehensive understanding of an educational phenomenon (Maeda et al., 2022; Tonello & Ferreira, 2024). Accordingly, this study does not seek to generate statistical generalizations but rather to construct a theoretically and empirically informed analysis of how authentic assessment can be innovated to strengthen the implementation of PAI within the Merdeka Curriculum.

Results and Discussion

Authentic Assessment as a Holistic Assessment Approach in Islamic Religious Education

The literature analysis indicates that authentic assessment is highly relevant to the learning characteristics of Islamic Religious Education (PAI), particularly within the Merdeka Curriculum. Unlike conventional assessment, which tends to emphasize students' ability to recall and reproduce knowledge, authentic assessment evaluates students' ability to demonstrate knowledge, skills, attitudes, and values through meaningful tasks and real-life contexts. Nurgiyantoro (2008) explains that authentic assessment emphasizes the meaningful demonstration of acquired knowledge through actual performance rather than merely testing students' ability to answer questions. Authentic assessment therefore provides a broader representation of student competence because it integrates learning outcomes with the practical application of knowledge.

This characteristic is particularly important in PAI because the ultimate purpose of religious education is not limited to cognitive mastery. Students are expected to understand Islamic teachings, develop positive religious attitudes, perform religious practices correctly, and demonstrate Islamic values in their everyday behavior. Consequently, assessment needs to examine the extent to which religious knowledge is translated into observable attitudes and practices. Aisyah, Saona, and Sadaat (2024) demonstrate that authentic assessment in PAI under the Merdeka Curriculum can be conducted across cognitive, affective, and psychomotor domains. Cognitive competence can be measured through written and oral tests and assignments, affective competence through observation, attitude journals, self-assessment and peer assessment, while psychomotor competence can be assessed through demonstrations of worship and performance rubrics.

The holistic orientation of authentic assessment is also consistent with the broader direction of the Merdeka Curriculum, which encourages assessment to become part of the learning process rather than merely an instrument for determining final grades. Marwa, Pitria, and Madani (2024) argue that authentic assessment is increasingly important in the Merdeka Curriculum because it allows schools to evaluate students' competencies in a more holistic and relevant manner, particularly competencies associated with twenty-first-century learning. Therefore, authentic assessment in PAI should be understood as a pedagogical mechanism for connecting religious knowledge, character formation, practical competence, and real-life application.

Innovation through Performance-Based Assessment

One important innovation identified in the literature is the strengthening of performance-based assessment. Performance assessment requires students to demonstrate their ability to perform a particular task or activity rather than merely describe how the task should be performed. In PAI, this approach can be applied to activities such as prayer practices, Qur'an recitation, ablution, funeral prayer, Friday sermon simulations, Islamic speech, presentation of Islamic concepts, and other forms of religious practice.

Performance assessment provides teachers with direct evidence of students' competence. In contrast to written tests, which may only show whether students understand procedural concepts, performance tasks reveal whether students can actually apply those concepts correctly. Aisyah et al. (2024) found that demonstrations of worship practices accompanied by performance rubrics were among the techniques used to assess psychomotor competence in PAI. This suggests that authentic performance assessment is particularly suitable for religious subjects in which procedural accuracy and practical application are integral parts of learning outcomes.

The quality of performance assessment, however, depends heavily on the clarity of the assessment criteria. Teachers need to establish measurable indicators before students perform a task. A rubric can include accuracy of religious procedures, fluency, discipline, confidence, responsibility, cleanliness, and conformity with Islamic principles. In this regard, authentic assessment should not be interpreted as an informal observation without clear standards. Rather, it requires explicit criteria and transparent scoring procedures so that students understand how their performance is evaluated.

This finding is consistent with the conceptual framework proposed by Gulikers, Bastiaens, and Kirschner (2004), which emphasizes that authentic assessment consists of several dimensions, including the authenticity of the task, context, form of assessment, and criteria used for judgment. Authenticity therefore depends not only on what students are asked to do but also on whether the assessment situation meaningfully reflects the competence being developed.

Project-Based Authentic Assessment for Contextualizing Islamic Values

A second major innovation is the use of project-based authentic assessment. Project assessment provides students with opportunities to integrate knowledge, skills, attitudes, creativity, collaboration, and problem-solving abilities through a relatively complex task. This approach is compatible with the student-centered orientation of the Merdeka Curriculum because students are given greater opportunities to investigate problems, produce products, collaborate with peers, and present their findings.

In PAI learning, project-based assessment can be contextualized through projects such as developing campaigns on Islamic ethics in social media, producing digital content about environmental responsibility from an Islamic perspective, conducting charity activities, documenting community service, creating infographics on Islamic values, or developing educational videos concerning religious practices. Such projects allow students to connect Islamic concepts with contemporary social realities.

Research on authentic project assessment shows that project tasks can facilitate the integration of knowledge and skills and encourage students to apply what they learn to meaningful situations. Safaroh and Dewi found that authentic project-based assessment could measure affective, cognitive, and psychomotor competencies and produced positive results in the assessment of student learning outcomes. Similarly, Sundari and Sabarun (2023) report that project assessment provides students with opportunities to integrate knowledge and skills through tasks that are relevant to real-world situations.

In PAI, the strength of project-based assessment lies in its capacity to assess not only whether students understand Islamic teachings but also how they interpret and practice those teachings in concrete contexts. For example, a project concerning Islamic environmental ethics can assess students' understanding of relevant Qur'anic teachings, their ability to identify environmental problems, their collaborative skills, and their actual participation in an environmental activity. Assessment consequently becomes a means of observing the internalization of Islamic values rather than simply measuring the ability to recite them.

Portfolio Assessment and the Documentation of Student Development

Another important form of authentic assessment innovation is portfolio assessment. A portfolio is a systematic collection of students' works over a certain period that can be used to document learning progress. Nurgiyantoro (2008) identifies portfolio assessment as one of the important forms of authentic assessment because it enables teachers to monitor the development of students' knowledge, skills, and attitudes over time.

Portfolio assessment is particularly valuable in PAI because religious and character development are continuous processes. A single examination cannot adequately demonstrate changes in students' religious behavior, learning habits, reflection, or practical competence. Through portfolios, teachers can collect evidence such as written reflections, Qur'an recitation recordings, project outputs, worship practice records, Islamic essays, observation notes, and documentation of community activities.

The innovation of portfolio assessment can be strengthened through digital portfolios. Instead of relying solely on physical folders, teachers and students can organize learning evidence using digital platforms. Digital portfolios can contain documents, photographs, videos, audio recordings,

reflection journals, and teacher feedback. Such documentation provides a richer picture of student development and allows students to become active participants in assessing their own learning.

Portfolio assessment also supports reflective learning. Students can be asked to explain what they have learned, what difficulties they encountered, what improvements they have made, and how Islamic values can be applied in their lives. In this way, assessment becomes a mechanism for metacognitive development rather than merely a process of assigning grades.

Assessment of Religious Attitudes through Observation, Self-Assessment, and Peer Assessment

The findings further demonstrate that the assessment of religious attitudes and character is a critical component of authentic PAI assessment. The affective dimension is often more difficult to assess than cognitive achievement because attitudes and character are manifested through repeated behavior rather than through isolated answers on a test.

In the context of PAI, teachers can use structured observation to assess indicators such as honesty, discipline, responsibility, respect, cooperation, tolerance, modesty, and adherence to religious practices. Self-assessment and peer assessment can complement teacher observation by giving students opportunities to reflect on their own behavior and provide constructive evaluations of their peers. Aisyah et al. (2024) found that observation, attitude journals, self-assessment, and peer assessment were among the techniques employed to assess the affective domain in PAI within the Merdeka Curriculum.

However, the assessment of religious character requires careful attention to validity and objectivity. Teachers should avoid evaluating students' personalities based on subjective impressions. Instead, assessment should focus on observable behaviors with clearly defined criteria and adequate observation periods. For instance, rather than assigning a general score for "good religious character," teachers can assess observable indicators such as consistency in participating in congregational prayer, honesty in completing assignments, willingness to help others, punctuality, or responsible participation in group activities.

This approach reflects the principle that authentic assessment should be based on observable evidence and transparent criteria. Character assessment thus becomes more educational when it provides students with information about which behaviors need to be maintained and which need to be improved.

Integration of Formative Assessment and Continuous Feedback

A significant finding from the literature is the importance of connecting authentic assessment with formative assessment and continuous feedback. Authentic assessment should not be conducted only at the end of a learning sequence. Instead, assessment evidence should be collected throughout the learning process and used to inform subsequent instruction.

Aisyah et al. (2024) found that formative assessment in PAI under the Merdeka Curriculum supports the provision of constructive feedback, remedial activities, enrichment, and adjustment of teaching strategies. This finding demonstrates that the value of authentic assessment lies not merely in producing a score but in generating information that can improve learning.

Feedback is particularly important in PAI because students may require repeated practice before achieving competence in religious skills. For example, when students practice Qur'anic recitation, teachers can provide immediate feedback concerning pronunciation, tajwid, fluency, and rhythm. In worship practices, teachers can identify procedural errors and allow students to repeat the practice after receiving guidance.

The increasing availability of digital technology also provides opportunities to make feedback more timely and individualized. Research published in the *British Journal of Educational Technology* indicates that AI-enabled visualization and feedback tools have potential to support formative assessment and learning achievement by presenting learning information in more accessible and actionable forms (Liao et al., 2024). More recent evidence also indicates that AI-generated formative feedback can reach pedagogical quality comparable to human-generated feedback in some contexts, although limitations remain, particularly with regard to metacognitive dimensions (Liao et al., 2026).

In PAI, however, the use of artificial intelligence should remain under teacher supervision. AI may assist with generating feedback, organizing assessment evidence, or identifying learning patterns,

but the interpretation of religious values and the evaluation of sensitive aspects of students' character should remain a human and pedagogical responsibility. This is particularly important because religious education involves ethical, spiritual, and contextual dimensions that cannot be reduced to automated scoring.

Innovation through Digital and Technology-Supported Assessment

The literature shows that digital technology offers substantial opportunities for improving authentic assessment. Technology can facilitate the creation of digital portfolios, video-based performance assessment, online quizzes, electronic rubrics, learning analytics, and digital feedback. These tools can make assessment more efficient while expanding the types of evidence teachers can collect.

For PAI, video assessment is particularly promising for practical religious competencies. Students can submit recordings of Qur'an recitation, prayer demonstrations, Islamic speeches, or project presentations. Teachers can assess these performances using standardized rubrics and provide written or recorded feedback. This approach enables the assessment of competencies that cannot be adequately captured through conventional written tests.

Digital assessment can also improve students' participation in the assessment process. Students can review their own work, compare their performance against rubrics, revise assignments, and document their progress. Such practices are consistent with the learner-centered orientation of the Merdeka Curriculum because students become active participants rather than passive objects of assessment.

Nevertheless, digital assessment introduces challenges related to internet access, digital literacy, data management, teacher competence, and the authenticity of student work. Technology should therefore be introduced according to institutional capacity and students' circumstances. Innovation should not create additional inequality between students who have different levels of access to digital devices and connectivity.

Alignment among Learning Objectives, Learning Activities, and Assessment

An important conceptual finding from this study is that authentic assessment innovation will be effective only when it is accompanied by constructive alignment among learning objectives, learning activities, and assessment tasks. Teachers should begin by identifying the competencies that students are expected to achieve and then select learning activities and assessment techniques that directly correspond to those competencies.

For example, when the learning objective is for students to demonstrate the correct practice of prayer, a written test alone is insufficient because the intended competence is practical. Performance assessment accompanied by a rubric is more appropriate. Conversely, when the objective concerns the analysis of Islamic teachings, students may need analytical essays, case studies, presentations, or project tasks.

This alignment prevents assessment from becoming disconnected from the learning process. The findings support the view that assessment should provide evidence of the competencies actually targeted by instruction. In the context of the Merdeka Curriculum, assessment should therefore be designed backward from learning outcomes and competency targets rather than simply selecting familiar tests.

Marwa et al. (2024) similarly highlight the relevance of authentic assessment to the development of twenty-first-century competencies within the Merdeka Curriculum. The implication for PAI is that teachers need to formulate learning outcomes that incorporate not only religious knowledge but also practical skills, critical thinking, collaboration, communication, creativity, and character.

Challenges in Implementing Authentic Assessment Innovation

Although authentic assessment has substantial potential, the literature identifies several challenges in its implementation. The first is teacher assessment literacy. Teachers need adequate competence to design authentic tasks, develop rubrics, observe performance, document evidence,

provide feedback, and interpret assessment results. Without adequate training, authentic assessment may become administratively complex or inconsistently implemented.

The second challenge is time and workload. Authentic tasks, projects, portfolios, and performance assessments generally require more preparation and observation time than conventional written tests. When a teacher manages a large number of students, collecting and evaluating individual evidence can become difficult.

The third challenge concerns objectivity and reliability. Because authentic assessment often involves judging complex student performance, unclear criteria may lead to differences in scoring between students or teachers. The solution is to develop clear rubrics, observable indicators, and consistent scoring procedures. Previous research on authentic assessment has repeatedly emphasized the need for well-designed criteria and rubrics to maintain assessment quality.

The fourth challenge is variation in technological infrastructure and digital competence. Digital portfolios, video assessments, and AI-supported feedback require appropriate devices, connectivity, and teacher competence. Technology therefore creates opportunities for innovation but can also create barriers when schools have limited resources.

Finally, PAI presents a distinctive challenge because some learning outcomes involve values and religious character that develop gradually and are influenced by students' family and social environments. Teachers therefore need to avoid reducing religious character to numerical scores alone. Assessment should function primarily as a means of guidance, reflection, and improvement.

A Proposed Model of Authentic Assessment Innovation in PAI

Based on the synthesis of the literature, authentic assessment innovation in PAI within the Merdeka Curriculum can be conceptualized as an integrated cycle consisting of diagnosis, authentic task design, performance evidence, reflection, feedback, and follow-up.

The process begins with diagnostic assessment to identify students' prior knowledge, learning readiness, and specific learning needs. Teachers then formulate authentic tasks aligned with learning objectives. Students complete performance, project, portfolio, or contextual tasks while teachers collect evidence using observation sheets and rubrics. Students are subsequently encouraged to conduct self-reflection and peer assessment. The teacher provides formative feedback based on the collected evidence and determines appropriate remedial, enrichment, or follow-up activities. Evidence of learning can then be documented in physical or digital portfolios.

The model places the teacher not simply as a scorer but as a facilitator of learning and assessment. Students, meanwhile, are positioned as active participants who are responsible for demonstrating, reflecting on, and improving their own competencies. This model is compatible with the central principles of the Merdeka Curriculum because it emphasizes meaningful learning, student agency, continuous improvement, and the development of holistic competencies.

Overall, the findings demonstrate that authentic assessment innovation can strengthen PAI learning when it integrates cognitive, affective, psychomotor, and character dimensions through contextual assessment tasks. Its effectiveness, however, depends on teacher assessment literacy, alignment between learning objectives and assessment strategies, quality of rubrics, continuous feedback, institutional support, and appropriate use of digital technology. Authentic assessment should therefore not be regarded merely as a replacement for conventional examinations but as a broader transformation of how student learning is understood, evidenced, and improved.

CONCLUSION

The analysis demonstrates that authentic assessment innovation has an important role in strengthening the implementation of Islamic Religious Education (PAI) within the Merdeka Curriculum. Authentic assessment provides a more comprehensive approach to evaluating student learning because it does not focus exclusively on cognitive achievement but also considers affective, psychomotor, character, and practical dimensions. This approach is particularly appropriate for PAI because the objectives of Islamic Religious Education include not only understanding religious knowledge but also developing religious attitudes, practicing Islamic teachings, and applying Islamic values in everyday life.

The study shows that authentic assessment innovation can be implemented through several interconnected strategies, including performance-based assessment, project-based assessment,

portfolio assessment, contextual assignments, observation of religious attitudes, self-assessment, peer assessment, and digital assessment. These approaches enable teachers to obtain broader and more meaningful evidence of student learning. Performance assessment is particularly relevant for evaluating practical religious competencies, while project and portfolio assessment provide opportunities for students to demonstrate creativity, collaboration, reflection, and the application of Islamic values in authentic contexts.

The integration of digital technology also provides new opportunities for improving authentic assessment. Digital portfolios, video-based performance assessment, electronic rubrics, and technology-assisted feedback can facilitate the collection, documentation, monitoring, and evaluation of student learning evidence. Artificial intelligence may additionally support the provision of formative feedback and the organization of assessment information. However, technology should function as a pedagogical support rather than a substitute for teacher judgment, particularly when assessing religious character, ethical behavior, and the internalization of Islamic values.

The findings further indicate that the success of authentic assessment depends on the alignment of learning objectives, learning activities, assessment strategies, assessment criteria, and feedback. Teachers need adequate assessment literacy to design authentic tasks, develop reliable rubrics, document learning evidence, and provide continuous feedback. At the institutional level, successful implementation also requires professional development, adequate technological infrastructure, manageable teacher workloads, and support for equitable access to learning resources.

Therefore, authentic assessment in PAI should be positioned not merely as an alternative method for assigning grades but as an integral component of meaningful and student-centered learning. Its implementation can contribute to the development of students who are knowledgeable, skilled, reflective, independent, collaborative, and capable of applying Islamic values in real-life situations. Future research should examine the effectiveness of specific authentic assessment models through empirical studies across different educational levels and contexts, including the use of digital technology and artificial intelligence while maintaining the pedagogical, ethical, and religious principles of Islamic Education.

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