

Implementation of Digital-Based Authentic Assessment in Assessing Student Competencies

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Abstract

The rapid development of information and communication technology has brought significant changes to various aspects of life, including education. This study aims to analyze the implementation of digital-based authentic assessment in assessing student competencies and identify factors that influence its success. The approach used was qualitative with a descriptive design. The research subjects included teachers and students who had implemented digital-based assessment in the learning process. Data collection techniques were carried out through observation, interviews, and documentation, while data analysis used an interactive model that included data reduction, data presentation, and drawing conclusions. Data validity was tested through triangulation of sources and methods. The results showed that digital-based authentic assessment was able to provide a more comprehensive picture of student competencies, covering cognitive, affective, and psychomotor aspects. The implementation of this assessment encouraged increased student engagement, creativity, and critical and collaborative thinking skills. In addition, the use of digital technology facilitated the management of assessment data, the provision of feedback, and increased the transparency of the evaluation process. However, several obstacles to its implementation existed, such as limited infrastructure, low digital literacy among some teachers and students, and the potential for academic dishonesty.

Keywords

Authentic Assessment, Digital Literacy, Learning Evaluation, Student Competence.



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INTRODUCTION

The rapid development of information and communication technology has brought significant changes to various aspects of life, including education. Digital transformation has not

only influenced the delivery of learning materials but also impacted the evaluation system for assessing student learning outcomes. In the context of modern education, assessment no longer focuses solely on the final result in the form of a number or score, but also on the learning process, skills, and competencies possessed by students as a whole. Therefore, an assessment approach that can authentically and comprehensively reflect student abilities is needed, one way of doing this is through the implementation of digital-based authentic assessment (Murtanto et al., 2026). Authentic assessment is an evaluation approach that assesses students' abilities based on tasks that reflect real-world situations. This assessment emphasizes critical thinking, problem-solving, creativity, and collaboration skills. Unlike conventional assessments, which tend to use written tests as the primary measuring tool, authentic assessment provides students with the opportunity to demonstrate their competencies through various assignments such as projects, portfolios, presentations, and hands-on practice. Therefore, authentic assessment is considered to be more valid and comprehensive in depicting students' actual abilities (Syafi'i et al., 2025).

With the advancement of digital technology, authentic assessments can now be integrated with various digital platforms that support the learning and evaluation process. Implementing digitally-based authentic assessments enables teachers to design, implement, and evaluate assessments more effectively and efficiently. The use of learning applications, learning management systems (LMS), and various other digital tools facilitates the collection, storage, and analysis of student learning outcomes (Musyadad & Sari, 2024). Furthermore, digital technology also enables faster and more structured feedback, thereby improving the quality of learning. However, the implementation of digitally-based authentic assessments is not without challenges. One of the main challenges is teachers' readiness to adopt technology and to thoroughly understand the concept of authentic assessment. Not all teachers possess adequate digital literacy skills, so training and mentoring are needed to enable them to design assessments that align with the characteristics of digital learning. Furthermore, the availability of technological infrastructure is also a crucial factor influencing the success of digitally-based assessment implementation, particularly in areas with limited access to devices and internet connections (Sari et al., 2025).

On the other hand, students, as the primary subjects in the learning process, are also required to possess strong digital literacy skills. Digital-based assessments require students to be able to use various technological devices, manage information effectively, and adapt to various forms of online assignments. This presents a challenge, especially for students who are unfamiliar with using technology in learning. Therefore, appropriate strategies are needed to ensure that all students have an equal opportunity to participate in the assessment process (Rahmawati & Prasetyono, 2025). In addition to technical factors, pedagogical aspects are also a crucial consideration in implementing authentic digital-based assessments. Teachers must be able to design assessment instruments that not only utilize technology but also remain oriented towards student competency achievement. Assessments must align with learning objectives, be relevant to real-life contexts, and be able to measure various aspects of competency, including

cognitive, affective, and psychomotor. Thus, the use of technology is not merely a tool but also an integral part of the learning and assessment process (Sriyanta, 2024).

The implementation of authentic digital-based assessments also aligns with curriculum demands that emphasize the development of 21st-century competencies. These competencies include critical thinking, creativity, communication, and collaboration. Through authentic assessments, students can be trained to develop these skills more optimally. For example, through digital-based projects, students can work together in teams, develop creative ideas, and communicate their work through digital media. Thus, assessments serve not only as a measuring tool but also as a means to develop students' potential (Salamah et al., 2025). In today's digital era, transparency and accountability in assessment are also crucial. Digital-based assessments allow for more systematic and easily accessible documentation for teachers, students, and other stakeholders. This can increase trust in the assessment process and minimize the potential for subjectivity. Furthermore, data generated from digital assessments can be used as a basis for decision-making, both in improving the learning process and in developing educational policies (Maharani et al., 2025).

Despite its numerous advantages, implementing authentic digital-based assessments also requires careful planning. Teachers need to consider various aspects, such as learning objectives, student characteristics, and resource availability. Furthermore, support from various parties, including schools, the government, and parents, is essential to ensure the successful implementation of these assessments. Without adequate support, digital-based assessments can become an additional burden for teachers and students (Wulandari et al., 2020). In the context of Indonesian education, the implementation of digitally-based authentic assessments has become increasingly relevant, especially following the experience of distance learning during the pandemic. This situation has accelerated the adoption of technology in education, including in the assessment process. This experience demonstrates that technology can be a solution to overcome various limitations in learning, while also opening up opportunities for innovation in assessment (Laily & Himmah, 2026).

Thus, the implementation of authentic digital-based assessments is essential for improving the quality of education. These assessments not only provide a more comprehensive picture of student competencies but also support the development of skills needed in the modern era. Therefore, further research is needed on how to implement these assessments effectively, as well as the factors that influence their success. Based on this description, it can be concluded that digital-based authentic assessment has significant potential to improve the quality of learning processes and outcomes. However, its successful implementation depends heavily on the readiness of various parties, both technically and pedagogically. Therefore, research on the implementation of digital-based authentic assessment is crucial to contribute to the development of a more effective and relevant assessment system that meets the needs of the times.

METHODS

This research uses a qualitative approach with a descriptive study design to deeply understand the implementation of authentic digital-based assessment in assessing student competency. This approach was chosen because it can describe phenomena holistically according to real-world conditions. The research subjects consisted of teachers and students at certain educational levels who have implemented digital-based assessment in the learning process. Data collection techniques were carried out through observation, in-depth interviews, and documentation. Observations were used to directly observe the assessment process, interviews were conducted to explore the perceptions and experiences of teachers and students, while documentation was used to collect data in the form of assessment instruments, student work results, and evidence of digital platform use.

Data analysis was conducted interactively through data reduction, data presentation, and conclusion drawing. The collected data were then selected and categorized based on themes relevant to the research focus, such as assessment planning, implementation, and challenges encountered. To ensure data validity, this study employed source and method triangulation techniques, comparing data from observations, interviews, and documentation. Furthermore, credibility testing was conducted through member checks with informants. The results of the data analysis were then interpreted to provide a comprehensive picture of the effectiveness of digital-based authentic assessment implementation in assessing student competency.

FINDINGS AND DISCUSSION

The research results show that the implementation of digitally-based authentic assessment has brought about significant changes in the learning evaluation process. Teachers no longer rely solely on conventional written tests, but have begun utilizing various forms of assessment such as digital projects, electronic portfolios (e-portfolios), multimedia-based presentations, and case study-based assignments relevant to real-life situations. The use of digital platforms such as Learning Management Systems (LMS), interactive quiz applications, and collaborative media allows teachers to design more varied and contextual assessment instruments. This has resulted in increased student engagement in the learning process, as they are not merely objects of assessment but also actively demonstrate their competence through various tangible products and performances.

In terms of planning, most teachers have been able to develop assessment instruments that refer to core competencies and learning objectives. Assessments are designed with competency achievement indicators in mind, encompassing cognitive, affective, and psychomotor aspects. However, some teachers still experience difficulties in developing clear and measurable assessment rubrics, particularly in assessing affective and skills aspects. This demonstrates that despite the availability of technology, teachers' pedagogical skills remain a determining factor in the successful implementation of digital-based authentic assessment (Masruha, 2026).

During the implementation phase, authentic digital-based assessments offer significant flexibility for both teachers and students. Students can work on assignments independently or collaboratively, utilizing a variety of digital tools. For example, in project assessments, students are asked to create video presentations, infographics, or digital reports that are uploaded through learning platforms. This process not only measures conceptual understanding but also communication skills, creativity, and the ability to use technology (Efendi, 2020). Furthermore, the features within digital platforms allow teachers to provide immediate and ongoing feedback, enabling students to more quickly identify their strengths and weaknesses.

However, the implementation of digital-based assessments also faces various challenges. One of the main obstacles is limited infrastructure, such as unstable internet access and the unequal availability of digital devices among students. This creates gaps in assessment implementation, with not all students able to participate optimally in the assessment process. Furthermore, some students struggle to manage their time and understand online assignment instructions, especially those unfamiliar with digital learning (Karulita, 2025).

From a student perspective, authentic digital-based assessments are considered more engaging and challenging than conventional assessments. Students feel they have more room to express their ideas and creativity (Kalyana et al., 2025). They are also more motivated to learn because the assignments are contextual and relevant to their daily lives. However, on the other hand, some students expressed that the workload sometimes feels too heavy, especially when not balanced with good time management. This suggests the need for balance in assignment assignments to avoid creating undue pressure on students (Ramdan, 2025).

When it comes to assessing learning outcomes, the use of digital technology simplifies data processing and analysis. Teachers can easily summarize assessment results, monitor student progress, and identify areas for improvement. Digitally stored data also allows for more systematic documentation and can be used as a reflection tool for improving learning. Furthermore, transparency in assessments increases because students can directly access the results and feedback provided by teachers (Muhidin et al., 2025).

However, maintaining students' academic honesty in digital-based assessments remains a challenge. Easy access to information on the internet opens up opportunities for students to plagiarize or collaborate inappropriately. Therefore, teachers need to design assignments that require critical thinking and originality, and use monitoring features or supporting applications to minimize cheating. Furthermore, instilling integrity values is also a crucial aspect that must be considered in the learning process (Zainuri & G Gunawan, 2025).

In terms of effectiveness, authentic digital-based assessments have been proven to provide a more comprehensive picture of student competencies. Assessments focus not only on final results but also on the process students go through in completing assignments. This aligns with educational goals that emphasize holistic competency development. Students assessed through a variety of assignments tend to have deeper understanding and improved

application skills compared to students assessed solely through written tests (Adriantoni et al., 2025).

In the context of developing 21st-century competencies, the implementation of authentic digital-based assessments makes a significant contribution. Students are trained to think critically in problem-solving, collaborate with peers, communicate effectively, and produce creative work. Furthermore, the use of technology in assessments also improves students' digital literacy, a crucial skill in the modern era. Thus, assessments serve not only as evaluation tools but also as learning tools that support the development of future skills (Sagara et al., 2026).

The discussion of the research findings indicates that the successful implementation of digital-based authentic assessment is significantly influenced by several factors, including teacher readiness, infrastructure availability, and support from the school environment (Fadilla et al., 2023). Teachers with digital competencies and a strong understanding of authentic assessment concepts tend to be more successful in implementing this assessment. Conversely, limitations in any of these aspects can hinder implementation (Aryana, 2020).

Furthermore, policies and support from schools and the government are needed to encourage the wider implementation of digital-based assessments. Teacher training, the provision of technological facilities, and the development of a supportive curriculum are crucial steps. Without adequate support, the optimal implementation of authentic digital-based assessments is difficult (Nawali et al., 2024).

Overall, the results of this study indicate that digitally-based authentic assessment has significant potential to improve the quality of learning and assessment. While various challenges remain, the benefits are far greater than those of conventional assessments. Therefore, ongoing efforts are needed to develop and refine the implementation of this assessment to maximize its contribution to education.

CONCLUSION

Based on the research results and discussion, it can be concluded that the implementation of digital-based authentic assessment can provide a more comprehensive picture of student competencies compared to conventional assessments. This assessment not only assesses cognitive aspects but also encompasses affective and psychomotor aspects through various forms of assignments such as projects, digital portfolios, and multimedia presentations. Furthermore, the use of digital technology in assessment facilitates data management, provides rapid feedback, and increases transparency and accountability in the learning evaluation process.

However, the successful implementation of digitally-based authentic assessments is heavily influenced by teacher readiness, students' digital literacy skills, and the availability of supporting infrastructure. Various obstacles remain, such as limited access to technology, difficulties in developing assessment instruments, and the potential for academic dishonesty.

Therefore, support from various parties is needed, including teacher training, the provision of adequate facilities and infrastructure, and the strengthening of integrity values in learning.

Thus, authentic digital-based assessments have significant potential to improve the quality of education and the relevance of learning to meet the demands of the 21st century. Optimal implementation requires careful planning, collaboration among stakeholders, and ongoing development to ensure these assessments are effective and positively impact student competency.

REFERENCES

- Adriantoni, Putri, D. N., Mayasril, N., & Gusman, R. (2025). Asesmen Abad 21: Menakar Kompetensi, Bukan Sekedar Nilai. *Didaktik : Jurnal Ilmiah Pgsd Fkip Universitas Mandiri*, 11(2022), 221–228.
- Aryana, S. (2020). Studi Literatur : Analisis Penerapan Dan Pengembangan Penilaian Autentik Kurikulum 2013 Pada Jurnal Nasional Dan Internasional. *Prosiding Seminar Nasional Pascasarjana Issn 26866404 Pascasarjana Universitas Negeri Semarang*.
- Efendi, R. (2020). Implementasi Authentic Assessment Pada Pendidikan Vokasi. *De_Journal (Dharmas Education Journal)*, 1(2), 232–240.
- Fadilla, A. R., Suhardi, & Sudiati. (2023). Literasi Digital-Industri Di Smk Dalam Paradigma Kebijakan. *Jurnal Pembangunan Masyarakat*, 8(2), 277–298.
- Kalyana, D., Hayatunnufus, G., Fauziah, F. H., & Wijaya, H. R. (2025). Implementasi Asesmen Autentik Berbasis Kompetensi Dalam Pembelajaran Abad Ke-21. *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan*, 4(2), 10521–10531.
- Karulita, S. (2025). Model Evaluasi Otentik Dalam Pembelajaran Pai Untuk Penguatan Karakter Siswa Di Era Digital. *Edu Society: Jurnal Pendidikan, Ilmu Sosial, Dan Pengabdian Kepada Masyarakat*, 5(3), 759–768.
- Laily, F. N., & Himmah, H. (2026). Implementasi Penilaian Berbasis Portofolio Digital Dalam Pembelajaran Privat Bahasa Arab. *Idarah Tarbawiyah: Journal Of Management In Islamic Education*, 7(2), 376–386. <https://doi.org/10.32832/itjmie.v7i2.22954>
- Maharani, L., Syahrin, A., Purnama, H., Ariga, S., Study, P., Bahasa, P., & Keguruan, F. (2025). Analisis Penerapan Penilaian Otentik Dalam Keterampilan Menulis Pada Pembelajaran Bahasa Indonesia Smp Negeri 23 Takengon. *Jejak Digital*, 1(5), 3439–3446.
- Masruha, H. I. (2026). Rekonseptualisasi Asesmen Autentik Dalam Pembelajaran Bahasa Indonesia: Pendekatan Berbasis Literasi Multimodal Untuk Era Digital. *Jurnal Buana Kata: Pendidikan, Bahasa, Dan Ilmu Komunikasi*, 3(1), 76–82.
- Muhidin, N., Khalida, H. H., Maryati, T., & Kartimi. (2025). Analisis Penilaian Berbasis Kompetensi (Kognitif, Afektif, Psikomotor) Di Sdit Miftahul Wildan. *El-Idare: Journal Of Islamic Education Management*, 11(2), 113–120.
- Murtanto, T. K. P., Cahyani, D., & Ali, M. (2026). Integrasi Teknologi Informasi Dalam Penilaian Sumatif Tengah Semester Berbasis Digital : Implementasi Efektivitas. *Jurnal Manajemen Pendidikan*, 13(2), 644–647.
- Musyadad, V. F., & Sari, I. (2024). Analisis Implementasi Penilaian Berbasis Portofolio Terhadap Perkembangan Kognitif Siswa. *Jurnal Primary Edu*, 2(1), 44–59.
- Nawali, J., Zuhriyah, I. A., Susilawati, S., & Yaqin, A. Z. N. (2024). Implementasi Penilaian Autentik Di Sdi Surya Buana Malang Untuk Meningkatkan Kualitas Pembelajaran.

- Pendas : Jurnal Ilmiah Pendidikan Dasar*, 9(4), 1–9.
- Rahmawati, N. F., & Prasetyono, H. (2025). Analisis Penerapan Penilaian Autentik Dalam Mengukur Pemahaman Konsep Sains Kompletks Pada Pembelajaran Biologi Di Sma Negeri 1 Tegalwaru Kabupaten Karawang. *Jurnal Tahsinia*, 6(12), 1974–1985.
- Ramdan, A. (2025). Antara Kertas Dan Realita : Penilaian Autentik Dalam Kurikulum Merdeka. *Jurnal Inovasi Pedagogi & Teknologi (Jiptek)*, 3(2), 56–65.
- Sagara, K. R., Hasan, A. V. A., & Anggriawan, D. (2026). Studi Literatur: Asesmen Otentik Dan Berbasis Kompetensi Dalam Pembelajaran Mipa. *Jurnal Inovasi Dan Teknologi Pendidikan*, 4(3), 763–773.
- Salamah, R. N., Yusi, Murtado, D., & Fauziah, R. N. (2025). Telaah Literatur Sistematis Tentang Implementasi Asesmen Autentik Dan Berbasis Kompetensi. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 10(4), 1–8.
- Sari, D. N., Wagiran, & Luriawati, D. (2025). Transformasi Penilaian Di Era Kurikulum Merdeka: Strategi Inovatif Asesmen Sumatif Di Smk Swasta Desi. *Selaksa Makna*, 1(4), 157–167.
- Sriyanta, A. (2024). Penilaian Autentik Berbasis Teknologi Informasi Dan Komunikasi (Tik) Dan Penerapannya Pada Pendidikan Agama Islam. *Jurnal Manajemen Pendidikan Islam Issn*, 1(2), 1–8.
- Syafi'i, M., Samsudin, M., Abidin, Z., & Basarrudin, M. (2025). Evaluasi Pendidikan Sebagai Dasar Pengembangan Instrumen Penilaian Berbasis Kompetensi. *Jurnal Akuntansi, Manajemen, Dan Ilmu Pendidikan*, 1(4), 1–12.
- Wulandari, R., Widiatsih, A., & Muarif, S. (2020). Pemanfaatan Google Classroom Dalam Penilaian Autentik Studi Kasus Sd Negeri Sidomulyo 05 Silo Kabupaten Jember. *Journal Of Science And Technology*, 13(2), 187–196.
- Zainuri, B. N. S., & G Gunawan, Q. Q. (2025). Authentic Assessment Practices In Digital Science Classrooms: A Review Of Strategies And Barriers. *Indonesian Journal Of Applied Science And Technology*, 6(1), 1–12.