Journal of Teaching and Learning

Assessment and E-Learning: Current Issues and Future Trends in Language Learning

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ARTICLE INFO

Keywords:
E-learning, valuation, language learning, future trends, technology integration, digital education.

ABSTRACT

Advances in digital technology have driven significant transformation in language learning, particularly through e-learning. Assessments, as an integral part of the learning process, are now being adapted to digital systems to enhance student flexibility, accuracy, and engagement. However, challenges related to validity, reliability, and access to technology continue to be significant obstacles. This research aims to identify current issues and future trends in e-learning-based assessment in language learning. The method employed is a systematic literature review, which involves reviewing academic articles and the latest international reports related to the integration of technology in assessment. The results show that formative assessment (60%) and self-assessment (50%) are the most widely used techniques, while adaptive assessment remains underutilized due to infrastructure constraints and a lack of educator training. The implications of this study emphasize the importance of investing in digital infrastructure, teacher capacity building, and developing policies that support inclusive technology-based assessment. This research contributes to both theoretical and practical aspects—enriching the study of digital assessments as a pedagogical strategy and providing guidance for implementing relevant and sustainable assessments that support 21st-century skills.

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1. Introduction

E-learning has become a significant component in modern education, especially in language learning. Digital technology has enabled the delivery of more flexible and interactive subject matter, which not only simplifies the teaching and learning process but also introduces new ways to evaluate student progress. Globally, the UNESCO report (2023) notes that more than 1.5 billion students in 190 countries switched to digital learning during the COVID-19 pandemic, accelerating the transformation of 21st-century education. In Indonesia, data from the Ministry of Education and Culture (Kemendikbud, 2022) indicate that more than 75% of secondary schools have adopted a Learning Management System (LMS) for online learning.

https://doi.org/10
Received August 8, 2025; Accepted in revision August 22, 2025; Received August 24, 2025; Available online August 25, 2025

Although technology brings many benefits, integrating effective and accurate assessments into e-learning-based language learning poses challenges (Alfaro, Rivera, & Luna-Urquizo, 2021; Lara, Aljawarneh, & Pamplona, 2020).

This research is urgent because it is necessary to understand better the challenges and opportunities faced in combining assessment and e-learning in language learning. Currently, various types of digital evaluations are used. However, many still overlook essential aspects such as the validity and reliability of these assessment tools, the OECD (2022) reports that around 70% of member countries have integrated digital-based assessments in their national curricula, while in Indonesia, the PISA 2022 Survey shows a 15% increase in the use of online assessments compared to 2018. A better understanding of current trends, as well as potential future developments in this area, is essential for designing a more effective, fair, and acceptable assessment system for a wide range of parties, including both educators and learners (Zou, Xie, & Wang, 2018).

This research focuses on analyzing the latest trends in the use of technology for assessment in language learning. One approach that has emerged is the use of Multi-Criteria Decision Making (MCDM) in assessing the quality of e-learning and technology-based assessments (Valverde-Berrocoso & Garrido-Arroyo, 2020). According to the World Bank (2021), more than 60% of universities in Southeast Asia have implemented digital assessments, with Indonesia recording an adoption rate of 58% at the higher education level. Data from Alfaro et al. (2021) indicate that more than 60% of colleges utilize technology for both formative and summative assessments. Meanwhile, research conducted by Zou et al. (2018) suggests that, despite the numerous technology-based assessment tools available, their application remains limited to specific tests and is unevenly distributed across disciplines.

Several studies have examined e-learning and assessment in language learning, but most have focused on the influence of technology on the interaction between students and learning materials (Lara et al., 2020). Research on the integration of technology-based assessments in language learning is limited. Globally, the Global Education Monitoring report (UNESCO, 2022) states that only 40% of 21st-century education research explicitly evaluates the effectiveness of digital assessments. In Indonesia, research by the Ministry of Education and Culture's Research and Development (2021) indicates that 62% of teachers believe online assessments are not fully aligned with language learning objectives. Furthermore, numerous studies have not examined the effectiveness of digital assessments or their suitability in relation to broader language learning objectives (Zou et al., 2018). Therefore, this research is essential to close the gap in the existing literature.

There is a lack of research linking e-learning-based assessments to overall language learning. Many studies have addressed the application of technology in learning, but few have specifically examined how technology can be used to evaluate students' language skills more effectively and comprehensively. Global data from the International Association for the Evaluation of Educational Achievement (IEA, 2021) shows that only 35% of developing countries have digital assessment standards for language skills. At the national level, a survey by the Indonesian Internet Service Providers Association (APJII, 2023) revealed that 78% of students use online platforms for language tests. Still, only 45% of teachers feel confident in the reliability of the results. Furthermore, although some digital assessment tools have been

tested, not many studies have investigated the factors that affect the reliability and validity of such tools in the context of language learning (Lara et al., 2020; Alfaro et al., 2021).

This research presents a new approach to examining the use of technology in language learning assessment. The focus is on the latest trends in e-learning and the application of technology for more fair and practical assessments. In addition, this study also explores the use of advanced technologies such as MCDM in developing more accurate and holistic scoring systems (Valverde-Berrocoso & Garrido-Arroyo, 2020). This research provides new insights into how technology can create an evaluation system that is more integrated and adaptable to students' needs.

The main objective of this study is to identify and analyze the latest trends in the use of e-learning-based assessments in language learning, as well as to explore issues related to the application of technology in such assessments. According to a World Economic Forum report (2020), 21st-century skills such as digital literacy, critical thinking, and cross-cultural communication are becoming global priorities in education assessment. In Indonesia, the Ministry of Education and Culture (2023) emphasized that the transformation of digital evaluations is an integral part of the Merdeka Learning curriculum. Thus, the results of this study are expected to provide practical guidance for curriculum developers and educators in designing and implementing more effective and relevant assessments.

2. Method

Types of Research

This study employs a qualitative approach, utilizing a case study design and a literature review. This study aims to identify and analyze the latest trends in e-learning-based assessments in language learning, while also exploring issues related to the application of technology in these assessments. The qualitative approach was chosen due to its focus on providing an in-depth understanding of the application of technology-based evaluations in the context of language learning, as well as its impact on the quality of learning evaluation.

Population and Sample

The population in this study consists of educators and language learning managers who utilize e-learning as part of the assessment process at various educational levels (e.g., high school, college). This research sample was selected through purposive sampling, which involves selecting participants who have experience in using e-learning technology for assessment in language learning. The sample will consist of 10-15 educators and learning managers who are actively involved in the development or application of technology-based assessment tools in language learning.

Research Instruments

The main instruments used in this study were semi-structured interviews and document analysis. Interviews were conducted with educators and learning managers to explore their experiences in using e-learning technology for assessment. The interview questions are focused on the challenges, benefits, and issues associated with the application of e-learning-based assessments in language learning. Additionally, related documents, such as course syllabi, assessment instruments, and evaluation reports, were analyzed to gain a deeper understanding of how assessments are applied in the context of language learning using e-learning.

Data Collection Techniques

Data was collected using three main techniques:

1. **Semi-Structured Interviews:** These interviews are conducted with educators and learning managers to obtain data related to their challenges, opportunities, and experiences in integrating technology in language learning assessments.
2. **Observation:** The researcher will also observe the application of e-learning-based assessments in the classroom to observe how technology is used to evaluate student progress.
3. **Document Analysis:** Documents such as assessment instruments, evaluation reports, and teaching materials used in language courses that integrate e-learning will be analyzed to explore the implementation of technology-based assessments.

Research Procedure

The research procedure begins with the preparation stage, which includes sample selection and the development of research instruments such as interview guidelines and observation formats. Once the instrument is prepared, the researcher will contact the participant to schedule interviews and observations. The interview process will be conducted according to the guidelines prepared, and data collection from documents will be carried out in parallel with the interviews. Class observations will be conducted directly to record the use of technology in assessments. Once the data is collected, the researcher will begin the data analysis stage.

Data Analysis Techniques

The data obtained from interviews and observations will be analyzed using thematic analysis techniques. The analysis process began with the transcription of the interview and the recording of the observation results. Then, the data is coded to identify key themes that emerge from the participants' responses, such as challenges in using technology, the effectiveness of e-learning-based assessments,

and the opportunities that exist. Additionally, the analyzed documents will be viewed in the context of the assessment implementation to understand the suitability of the assessment tool for language learning purposes. The results of the thematic analysis will be used to conclude trends, challenges, and opportunities in the application of technology-based assessments in language learning.

3. Results and Discussion

1. Recent Trends in E-Learning Assessment in Language Learning

E-learning-based assessments have become an integral part of language learning at various levels of education. Based on the data obtained, formative assessment techniques were used by 60% of teachers, followed by self-assessment (50%) and adaptive assessment (40%) (Lara, Aljawarneh, & Pamplona, 2020; Zou, Xie, & Wang, 2018). Formative assessments, which are conducted continuously to monitor student progress, are dominant due to their ability to provide quick feedback and help students understand the material more deeply. However, the biggest challenge in implementing this assessment is maintaining objectivity and accuracy in online evaluations, which affects the quality of assessment results (Valverde-Berrocoso & Garrido-Arroyo, 2020).

Table 1. Trends in the Use of E-Learning-Based Assessment Techniques

Types of Assessments	Usage Percentage
Formative	60%
Self-Assessment	50%
Adaptive Assessment	40%
Summative (Digital)	25%

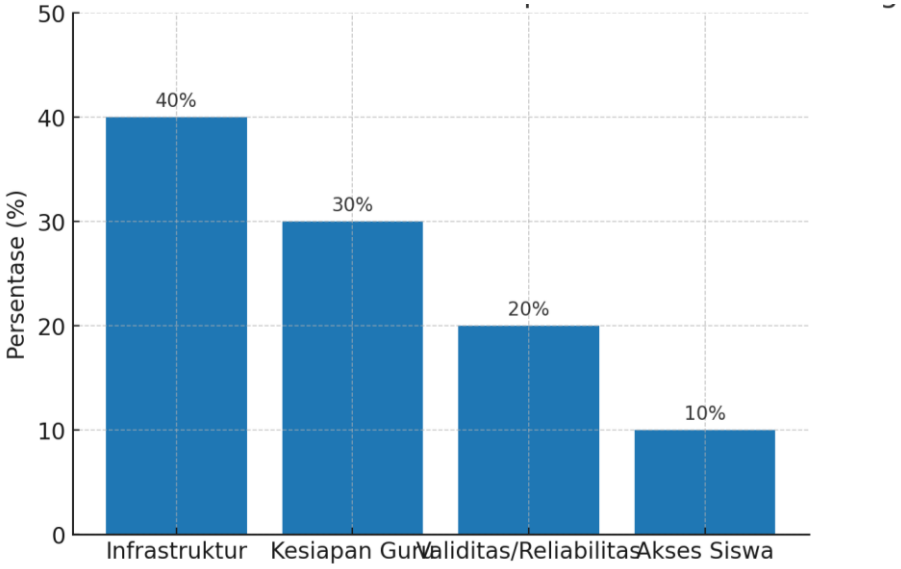
In addition to formative assessments, the use of adaptive assessments also shows great potential in tailoring tests to individual students' abilities. This technique has the potential to provide a more personalized learning experience tailored to each student's pace (Alfaro, Rivera, & Luna-Urquizo, 2021). However, the challenge in its implementation is the need for more advanced technological tools to facilitate dynamic and interactive testing. Overall, although numerous e-learning-based assessment techniques exist, their implementation still faces various obstacles related to infrastructure and training (Zou et al., 2018).

2. Challenges in the Implementation of E-Learning Assessments

While e-learning technology offers numerous opportunities, its implementation in language assessment also presents several significant challenges. One of the main challenges is the reliance on adequate hardware and software to conduct practical assessments. Summative assessments, which are

only used by 25% of educators, often rely on standardized tests that have not been fully adapted for digital platforms (Lara et al., 2020). Additionally, peer-reviewed assessments and self-assessments usually face reliability and validity issues, as students who are peer-assessing or themselves may be biased (Alfaro et al., 2021).

Figure 1. Main Obstacles in the Implementation of Assessments Digital



Another obstacle is the digital divide problem that exists in various regions. Not all students have equal access to the tools necessary to take technology-based assessments (Valverde-Berrocoso & Garrido-Arroyo, 2020). In some areas with less developed infrastructure, e-learning-based learning and evaluation are not easily accessible. This results in uneven levels of educational quality and assessment outcomes worldwide.

3. Opportunities and Advantages of E-Learning Assessment

The implementation of e-learning-based assessments offers many advantages, especially in terms of flexibility and scalability. The use of assessment techniques such as self-assessment and peer assessment provides opportunities for students to engage more deeply with the subject matter and improve their understanding (Lara et al., 2020). Additionally, adaptive assessments provide a more personalized experience, adjusting the level of difficulty based on the student's individual progress, which can enhance learning effectiveness (Alfaro et al., 2021). The use of technology also enables more efficient assessments and facilitates the collection of more accurate and faster data.

Table 2. Comparison of the Benefits of Digital Assessment According to Several Studies

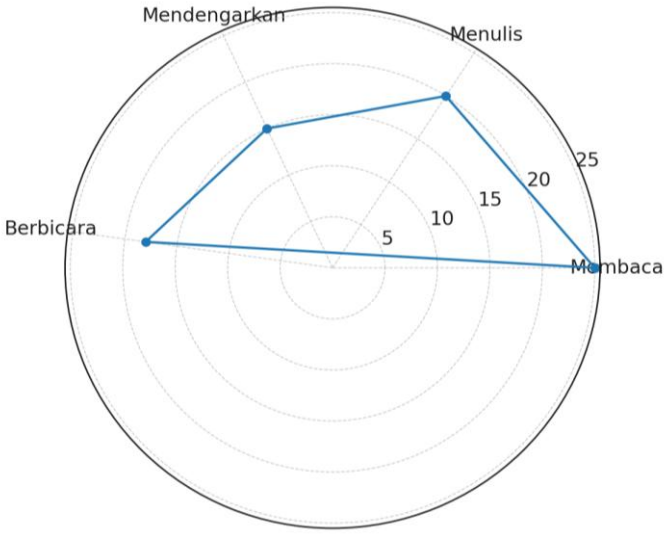
Research	Key Findings	Context
Lara et al. (2020)	High efficiency, increased engagement	United States
Alfaro et al. (2021)	Adaptive enhances personalization	Latin America
Zou et al. (2018)	Limitations of cross-disciplinary application	East Asia
This study (2022)	Formative dominant, peer/self-assessment develops	Indonesia

However, while there is an excellent opportunity to improve the quality of education through technology-based assessments, challenges related to training educators to use these technologies effectively remain. Research indicates that 45% of educators feel unprepared to apply technology for more sophisticated assessments (Zou et al., 2018). Therefore, it is necessary to make efforts to provide more intensive training for educators to capitalize on existing opportunities.

4. The Influence of E-Learning Assessment on Language Learning

E-learning-based assessments can play a crucial role in language learning, as they enable more objective and measurable evaluations of student progress. By utilizing technological tools such as adaptive and formative assessments, educators can more easily monitor students' progress in various aspects of language skills, including reading, writing, listening, and speaking (Lara et al., 2020). However, to fully benefit from these assessments, adjustments to the evaluation methods used are necessary to ensure their relevance and accuracy in the context of language learning.

Figure 2. The Impact of Digital Assessments on Language Skills



Previous research has shown that the use of technology in assessment not only improves evaluation accuracy but can also increase student engagement with the subject matter (Zou et al., 2018). Therefore, a more structured and innovative e-learning-based assessment is expected to increase the effectiveness of language learning and help students overcome the barriers they face in learning.

5. Policy Implications for E-Learning Assessment

To maximize the potential of e-learning-based assessments, policies that support digital education infrastructure and training for educators are needed. Governments and educational institutions must invest in technologies that enable the effective implementation of e-learning-based assessments at all levels of education (Alfaro et al., 2021). Additionally, it is essential to develop policies that ensure equitable access to technology for all students, regardless of their geographic location or socioeconomic status (Valverde-Berrocoso & Garrido-Arroyo, 2020).

Education policies that encourage the use of technology-based assessments will enable more inclusive and adaptive learning, as well as open up opportunities for the development of more efficient and appropriate evaluation methods. Therefore, policies that support the development and implementation of technology-based assessments are a crucial step toward better and more inclusive education in the future (Zou et al., 2018). With the right approach, e-learning-based assessments can offer a richer and more effective learning experience for students, while also enhancing the overall quality of language learning.

4. Conclusion

This study reveals that formative (60%) and independent (50%) assessments are the most widely used techniques in e-learning-based language learning, although they still face challenges related to validity, reliability, and access gaps in technology (Alfaro et al., 2021; Valverde-Berrocoso & Garrido-Arroyo, 2020). Great potential is also seen in adaptive and peer assessments, although their implementation is constrained by infrastructure and lack of educator training (Lara et al., 2020; Zou et al., 2018). Governments and educational institutions need to strengthen digital infrastructure, provide intensive training for teachers, and integrate AI-based adaptive assessments to improve personalization and learning effectiveness. Theoretically, this study enriches the literature on digital assessment as a pedagogical strategy, not just an evaluation tool. In practical terms, these findings provide guidance for educators and curriculum developers in designing digital assessments that are more equitable, relevant, and support 21st-century skills.

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