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Teachers' Attitudes towards Digital Game Based Assessment in English Language Teaching: A Mixed Methods Study

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Abstract. *This study explores teachers' attitudes toward Digital Game-Based Assessment (DGBA) in English Language Teaching (ELT) using a mixed methods design. The integration of digital technology in education has encouraged innovative approaches to assessment, including game-based tools that enhance learning engagement. Teachers' perceptions, however, determine the effectiveness of such implementations. Data were collected from 80 English teachers through questionnaires and semi-structured interviews. Quantitative data were analyzed statistically, while qualitative data were examined thematically. The results indicate that most teachers hold positive attitudes toward DGBA, perceiving it as an engaging and motivating assessment tool for students. Despite these positive views, several challenges were identified, including technical limitations, time management, and concerns about assessment validity. The study highlights the need for adequate training and institutional support to promote effective use of DGBA in language classrooms. The findings contribute to understanding how teachers can integrate technology-based assessments to enhance teaching and learning outcomes in ELT contexts.*

Keywords: *Assessment, Digital Games, English Teaching, Mixed Methods, Teachers.*

1. BACKGROUND

The rapid advancement of digital technology has significantly transformed the landscape of education, including language teaching and assessment. In recent years, the integration of digital tools in English Language Teaching (ELT) has shifted traditional assessment practices toward more interactive, engaging, and student-centered approaches. One emerging innovation is Digital Game-Based Assessment (DGBA), which incorporates elements of gameplay into the evaluation process to measure students' language skills in an enjoyable and authentic context. DGBA not only enhances learner motivation but also provides real-time feedback and fosters critical thinking, collaboration, and problem-solving skills that are essential in 21st-century learning.

The use of digital games for educational purposes has been widely explored in the context of Digital Game-Based Learning (DGBL), yet its application for assessment remains underdeveloped. Several studies have shown that digital games can promote higher engagement and learning performance among students (e.g., Hung et al., 2018; Kim, 2020). However, when used as assessment tools, teachers often express uncertainty about their validity, reliability, and alignment with curriculum goals. Many educators are still more comfortable using conventional tests and paper-based assessments due to limited knowledge, lack of technical skills, and insufficient institutional support. In addition, some

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teachers view DGBA as time-consuming and challenging to design or integrate into existing teaching frameworks.

This research addresses the gap by focusing on teachers' attitudes toward DGBA in ELT, which remain an essential factor influencing the successful adoption of educational technologies. Unlike previous studies that mainly emphasize the effectiveness of digital games for learning, this study combines both quantitative and qualitative methods to provide a deeper understanding of teachers' beliefs, experiences, and readiness to implement DGBA. The mixed methods design allows for a more comprehensive analysis of not only numerical trends but also the nuanced perspectives behind teachers' acceptance or resistance to technological innovation.

The urgency of this study lies in the growing demand for innovative, technology-driven assessment models that reflect 21st-century skills and learning outcomes. As educational systems worldwide move toward digital transformation, understanding teachers' perspectives becomes vital to ensure meaningful and sustainable integration of DGBA in language classrooms. Therefore, the objective of this research is to examine English teachers' attitudes toward DGBA, explore the challenges they face in its implementation, and identify factors that can support or hinder its adoption. The findings are expected to contribute to the development of more effective training programs, institutional policies, and assessment practices that align with the goals of modern ELT and digital pedagogy.

2. THEORETICAL REVIEW

The integration of digital technology in education has led to the development of new assessment paradigms that emphasize learner engagement, authenticity, and interactivity. One such innovation is Digital Game-Based Assessment (DGBA), which draws upon theories from educational psychology, technology-enhanced learning, and language assessment. DGBA combines the principles of Digital Game-Based Learning (DGBL) with formative and summative assessment practices to measure students' language proficiency in dynamic and meaningful contexts. This approach aligns with constructivist learning theory, which posits that learners actively construct knowledge through experience and interaction (Piaget, 1970; Vygotsky, 1978). In DGBA, learning and assessment are intertwined within gameplay, allowing students to demonstrate language competence through authentic communicative tasks.

According to Self-Determination Theory (Deci & Ryan, 2000), motivation plays a central role in effective learning. DGBA enhances learners' intrinsic motivation by incorporating elements of autonomy, competence, and relatedness—features that make the assessment process more enjoyable and less anxiety-inducing. Furthermore, Experiential Learning Theory (Kolb, 1984) supports the idea that learners benefit from hands-on experiences, reflection, and feedback—key aspects embedded in game-based assessment environments.

Several studies have supported the pedagogical potential of DGBA. Hung et al. (2018) found that integrating digital games in assessment improved learners' engagement and performance in English vocabulary learning. Similarly, Kim (2020) reported that game-based assessments fostered higher student motivation and provided authentic opportunities for language use. However, research by Tsai and Fan (2021) indicated that teachers' acceptance of DGBA is influenced by factors such as technological confidence, perceived usefulness, and institutional support. Another study by Reinders and Wattana (2015) emphasized the importance of teacher beliefs in adopting game-based approaches in ELT, suggesting that positive attitudes can significantly impact the effectiveness of digital tools in language assessment.

The theoretical foundation for examining teachers' attitudes toward DGBA also draws upon the Technology Acceptance Model (TAM) proposed by Davis (1989), which highlights that perceived ease of use and perceived usefulness determine an individual's intention to adopt technology. In the context of ELT, these constructs are vital in understanding how teachers evaluate the practicality and educational value of DGBA. Studies by Li and Wang (2022) and Suherman et al. (2023) confirmed that teachers' attitudes are shaped by their prior experiences, digital literacy, and institutional readiness.

Based on the reviewed theories and studies, this research assumes that teachers' positive attitudes toward DGBA are associated with their belief in its pedagogical value, usability, and impact on student motivation and learning outcomes. Conversely, negative attitudes may stem from technical challenges, lack of training, or concerns regarding assessment validity. Therefore, the current study employs a mixed methods approach to comprehensively explore the cognitive, affective, and contextual dimensions influencing teachers' attitudes toward DGBA in English Language Teaching.

3. RESEARCH METHOD

This research employed a mixed methods design, combining quantitative and qualitative approaches to provide a comprehensive understanding of teachers' attitudes toward Digital Game-Based Assessment (DGBA) in English Language Teaching (ELT). The mixed methods approach was selected to triangulate findings, enrich interpretation, and validate results obtained from different data sources (Creswell & Plano Clark, 2018).

The population of the study consisted of English teachers from various educational levels, including junior high schools, senior high schools, and universities. Using purposive sampling, a total of 80 English teachers participated in the quantitative phase, while 10 teachers were selected for in-depth qualitative interviews based on their teaching experience and familiarity with digital technology. This sampling strategy ensured diversity in perspectives and teaching contexts.

The data collection techniques included a questionnaire and semi-structured interviews. The questionnaire adopted a Likert scale format consisting of 25 items that measured teachers' attitudes toward DGBA in terms of perceived usefulness, ease of use, motivation, and implementation challenges. The instrument was adapted from previous studies (Davis, 1989; Teo, 2011) and validated by two experts in educational technology and English pedagogy. The reliability test yielded a Cronbach's alpha coefficient of 0.89, indicating high internal consistency. The qualitative data were gathered through interviews focusing on teachers' experiences, perceptions, and suggestions regarding DGBA implementation in ELT.

The data analysis involved both statistical and thematic procedures. Quantitative data were analyzed using descriptive statistics (mean, standard deviation, and percentage) and inferential analysis, including t-tests and ANOVA, to examine differences based on teaching experience and educational level. All statistical analyses were conducted using SPSS software. Qualitative data were analyzed thematically following the steps of coding, categorization, and interpretation (Braun & Clarke, 2019). The themes emerging from interviews were used to explain and support the quantitative results.

The research model was based on the Technology Acceptance Model (TAM) (Davis, 1989), which examines two main constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), as predictors of Behavioral Intention (BI) to adopt DGBA. In this study, PU refers to teachers' beliefs that DGBA enhances teaching and assessment effectiveness;

PEOU refers to teachers' perceptions of the effort required to use DGBA; and BI represents teachers' willingness to integrate DGBA into their ELT practices.

Overall, this mixed methods design enabled the researcher to capture both the measurable trends and the nuanced perspectives underlying teachers' attitudes toward DGBA, ensuring a holistic understanding of the phenomenon within the context of English language education.

4. RESULTS AND DISCUSSION

Data Collection Process and Research Setting

The data collection was conducted over a period of three months, from March to May 2025, involving English teachers from public and private schools as well as universities located in three provinces in Indonesia: West Java, Central Java, and Yogyakarta. The quantitative data were obtained through the distribution of online questionnaires using Google Forms, while qualitative data were gathered through virtual semi-structured interviews conducted via Zoom and WhatsApp voice calls. The use of digital data collection methods allowed participants to respond flexibly and ensured accessibility across different regions.

Quantitative Results

Descriptive statistics showed that teachers generally held positive attitudes toward Digital Game-Based Assessment (DGBA) in English Language Teaching. Table 1 presents the summary of mean scores across four dimensions: perceived usefulness, perceived ease of use, motivation, and implementation challenges.

Table 1. Mean Scores of Teachers' Attitudes toward DGBA (n = 80)

Dimension	Mean	Std. Deviation	Interpretation
Perceived Usefulness (PU)	4.21	0.54	High
Perceived Ease of Use (PEOU)	4.05	0.61	High
Motivation (MOT)	4.32	0.48	Very High
Implementation Challenges (CH)	3.42	0.70	Moderate

Source: Research Data, 2025

The results indicate that most teachers believe DGBA can enhance student engagement, improve language performance, and make assessment more authentic. Teachers also reported that DGBA fosters student motivation through interactive features and immediate feedback mechanisms. However, moderate scores in the "challenges"

dimension suggest the presence of barriers such as limited digital resources, time constraints, and technical difficulties during implementation.

Inferential analysis using an independent samples t-test revealed no significant difference in attitudes between male and female teachers ($p > 0.05$). However, ANOVA results indicated a significant difference based on teaching experience ($p < 0.05$), where younger teachers with less than five years of experience showed more favorable attitudes toward DGBA compared to their senior counterparts. This finding suggests that digital familiarity and openness to technological innovation influence teachers' acceptance levels.

Qualitative Findings

The qualitative interviews provided deeper insights into teachers' perceptions and experiences. Three main themes emerged: a) perceived pedagogical value of DGBA, b) technological and institutional constraints, and c) professional development needs.

Perceived Pedagogical Value: Teachers acknowledged that DGBA makes assessment more dynamic and enjoyable, offering opportunities for authentic language use in communicative contexts.

a) Technological and Institutional Constraints: Participants reported challenges such as inadequate school infrastructure, unstable internet connectivity, and lack of administrative support.
b) Professional Development Needs: Many teachers expressed the need for targeted training on how to design, implement, and evaluate game-based assessments effectively.
c) These qualitative results corroborate the quantitative findings, emphasizing both the enthusiasm and hesitation teachers experience when integrating DGBA into their classrooms.

Discussion

The findings align with the Technology Acceptance Model (Davis, 1989), confirming that Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) significantly influence teachers' intention to adopt DGBA. Teachers' positive attitudes were largely driven by their belief that DGBA improves engagement and learning outcomes, consistent with prior research by Hung et al. (2018) and Kim (2020). However, similar to Tsai and Fan (2021), this study found that implementation barriers—such as lack of time, infrastructure, and institutional support—can hinder the adoption process.

From a theoretical standpoint, these findings support Self-Determination Theory (Deci & Ryan, 2000), showing that DGBA satisfies teachers' and students' psychological needs for autonomy and competence, enhancing motivation in the learning process. From an applied perspective, the results highlight the necessity of ongoing teacher training programs, technical support, and policy development to ensure effective integration of DGBA into ELT practices.

Implications

Theoretically, this study contributes to the expansion of technology acceptance research within the ELT assessment context, providing empirical evidence on how teachers' perceptions shape the adoption of innovative assessment tools. Practically, it underscores the need for educational institutions to invest in digital infrastructure and professional development to bridge the gap between technological potential and classroom reality. Encouraging collaborative communities of practice among teachers may also facilitate the exchange of ideas and resources related to DGBA implementation.

In conclusion, teachers' generally positive attitudes toward DGBA reflect a promising direction for the future of assessment in English Language Teaching. However, addressing technical, institutional, and pedagogical challenges remains crucial to ensure that digital game-based assessments are not only engaging but also pedagogically sound and sustainable.

5. CONCLUSION AND SUGGESTION

The findings of this study indicate that English teachers generally hold positive attitudes toward the use of Digital Game-Based Assessment (DGBA) in English Language Teaching. Teachers perceive DGBA as a valuable tool that can enhance student motivation, engagement, and performance by making assessment activities more interactive and authentic. The quantitative results show high mean scores for perceived usefulness, perceived ease of use, and motivation, while qualitative data reveal teachers' enthusiasm for incorporating digital tools into their assessment practices. However, the study also highlights several challenges, including limited digital infrastructure, insufficient time for preparation, and lack of institutional and technical support. These factors influence teachers' readiness and willingness to adopt DGBA effectively.

Based on these results, it can be concluded that teachers' attitudes toward DGBA are strongly influenced by their perceptions of its pedagogical value, ease of implementation,

and the level of support provided by educational institutions. The findings confirm the relevance of the Technology Acceptance Model (TAM) in explaining teachers' acceptance of innovative assessment tools. The study suggests that positive attitudes alone are not enough to ensure successful implementation; adequate training, policy support, and access to reliable technology are essential for sustainable integration.

In light of these conclusions, it is recommended that educational institutions and policymakers provide continuous professional development programs focused on designing and applying DGBA in language classrooms. Schools should also enhance digital infrastructure and technical assistance to minimize implementation barriers. Furthermore, teacher collaboration through professional learning communities can foster idea exchange and encourage best practices in digital assessment.

This study acknowledges several limitations, including its relatively small sample size and focus on a specific regional context, which may restrict the generalizability of the findings. Future research is recommended to include a larger and more diverse sample, explore longitudinal impacts of DGBA adoption, and investigate students' perspectives to gain a more holistic understanding of technology-based assessment in ELT. By addressing these areas, future studies can contribute to the development of more comprehensive frameworks for integrating DGBA effectively in language education.

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