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English Teachers' Perceptions and Adaptive Strategies in Using Wordwall for Teaching Adjectives: A Qualitative Case Study

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A B S T R A C T

Digital technology has transformed English language teaching, with game-based platforms increasingly integrated into grammar instruction. However, research on teachers' integration of Wordwall for teaching specific grammar items, particularly adjectives at the secondary level, remains limited. This study investigates three aspects: English teachers' perceptions of Wordwall, the challenges they encounter, and the adaptive strategies they employ when teaching adjectives in secondary school. Using a qualitative descriptive case study design, the study involved three English teachers at a private secondary school in West Cikarang, West Java, Indonesia. Data were collected through semi-structured interviews, document analysis of lesson plans and Wordwall templates, and teachers' reflective journals. Thematic analysis followed the miles 2014 framework. Findings indicate that teachers perceived Wordwall as accessible, motivating, and pedagogically relevant. Three categories of challenges emerged: technical barriers (internet instability and limited devices), pedagogical barriers (classroom management and overemphasis on competition), and content relevance barriers (misalignment with local context). Teachers responded with adaptive strategies including template modification, scaffolding, post-game reflective activities, and peer collaboration. The study concludes that Wordwall can serve as an effective medium for active, student-centered grammar instruction when teachers apply systematic pedagogical adaptation. Findings advance the literature on technology integration in EFL grammar teaching within the TAM, TPACK, and Technology Integration Barriers frameworks.

Keywords: *Digital Game-Based Learning, EFL Grammar Instruction, Teacher Perceptions, Teaching Adjectives, TPACK, Wordwall*

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INTRODUCTION

The integration of digital technology in English as a Foreign Language (EFL) teaching has accelerated significantly over the past decade, driven in part by the global shift to remote learning during the COVID-19 pandemic. Within Computer-Assisted Language Learning (CALL) and Technology-Enhanced Language Learning (TELL) frameworks, digital platforms have been recognized for their potential to promote engagement, interaction, and learner autonomy (Chapelle, 2003). Among the digital tools gaining traction in Indonesian secondary school classrooms is Wordwall, a web-based platform that allows teachers to design interactive game-based activities including quizzes, matching games, and word sorts (Paksi et al., 2023).

Wordwall offers distinct advantages over similar platforms such as Quizizz and Kahoot. Unlike those tools, which prioritize time-based competition, Wordwall supports both digital and printable formats, allows flexible template customization, and provides automatic grading and real-time feedback (Fonna & Adani, 2025). These features position Wordwall not only as a game medium but also as a formative assessment tool aligned with student-centered pedagogy (Urnila et al., 2024). Its versatility makes it particularly suitable for diverse English language learning contexts in Indonesia, where classroom infrastructure and student readiness vary considerably.

Teachers' perceptions are pivotal in determining whether educational technology is adopted and sustained in classroom practice. (Davis, 1989) Technology Acceptance Model (TAM) posits that perceived usefulness and perceived ease of use are the two primary determinants of user acceptance. In the EFL context, teachers who perceive a tool as practical and pedagogically effective are more likely to integrate it consistently (Teo, 2011). Several studies confirm that teachers generally hold positive perceptions of Wordwall, citing its ease of use, student motivational impact, and suitability for vocabulary instruction (Fianto et al., 2024; Insani et al., 2024; Paksi et al., 2023).

Despite positive perceptions, technology integration in Indonesian classrooms is not without obstacles. (Ertmer, 1999) classifies barriers to technology integration as first-order (external) barriers, such as inadequate infrastructure and limited internet access, and second-order (internal) barriers, such as teachers' beliefs and confidence in managing technology pedagogically. In the context of Wordwall, teachers frequently encounter unstable internet connections, device limitations, and challenges in maintaining pedagogical focus when gamification overshadows learning objectives (Fonna & Adani, 2025; Insani et al., 2024).

To navigate these obstacles, teachers increasingly rely on adaptive strategies grounded in the Technological Pedagogical Content Knowledge (TPACK) framework proposed by (Mishra & Koehler, 2006). TPACK emphasizes that effective technology integration requires the harmonization of technological, pedagogical, and content knowledge. Teachers who successfully adapt Wordwall to classroom contexts demonstrate not only technical proficiency but also the ability to design meaningful, curriculum-aligned learning experiences (Fianto et al., 2024; Insani et al., 2024).

Existing studies on Wordwall have predominantly focused on general vocabulary acquisition in elementary and junior high school contexts (Fianto et al., 2024; Insani et al., 2024; Urnila et al., 2024). Research specifically examining teachers' integration of Wordwall for grammar instruction, particularly adjective teaching at the secondary level, is scarce. This gap limits the understanding of how Wordwall can be adapted for micro-grammar learning, which requires different pedagogical considerations than vocabulary acquisition alone. The present study addresses this gap by examining three research questions: (1) How do secondary school English teachers perceive the use of Wordwall in teaching adjectives? (2) What challenges do teachers face in integrating Wordwall for adjective instruction? (3) What adaptive strategies do teachers employ to optimize Wordwall for adjective teaching?

Game-based learning (GBL) is defined as the pedagogical use of game elements to enhance motivation, engagement, and knowledge retention in formal educational settings (Prensky, 2007). Within the EFL classroom, GBL platforms have been shown to increase student participation and reduce language anxiety, particularly among adolescent learners (Sukmawati & Nensia, 2019). Wordwall represents a specific instantiation of GBL that combines customizable content design with interactive game mechanics, enabling teachers to create learning activities tailored to specific language objectives.

Paksi et al., (2023) defined Wordwall as an online learning platform that provides multiple quiz and activity templates suitable for vocabulary instruction in an engaging and evaluative manner. (Fonna & Adani, 2025) further characterized it as an innovative medium that supports two-way communicative interaction in the classroom through activities such as matching games, open-box tasks, and random wheels. Notably, Wordwall integrates both formative and summative assessment functions: its auto-grading feature and real-time leaderboard allow teachers to monitor student performance while maintaining a game-based learning atmosphere (Fianto et al., 2024).

The Technology Acceptance Model (TAM), introduced by (Davis, 1989), provides a theoretical lens for understanding why teachers adopt or reject specific digital tools. TAM identifies perceived usefulness (PU) and perceived ease of use (PEOU) as the core constructs influencing technology acceptance behavior. In EFL contexts, teachers with higher PU and PEOU scores toward a digital tool demonstrate more sustained and pedagogically integrated use of that tool (Alqahtani, 2019; Teo, 2011).

Research on teachers' perceptions of Wordwall is consistently positive. (Paksi et al., 2023) found that teachers valued Wordwall for its simplicity, lesson planning support, and student motivational impact. (Fianto et al., 2024) reported that preservice elementary teachers regarded Wordwall as an interactive quiz tool that fostered positive classroom environments. (Insani et al., 2024) documented that teachers of young learners used Wordwall to create scaffolded, interactive learning experiences that supported vocabulary retention. These findings collectively indicate that Wordwall aligns with TAM predictions: when teachers perceive high usefulness and ease of use, adoption rates increase.

Ertmer, (1999) barriers framework distinguishes between first-order barriers (external) and second-order barriers (internal). First-order barriers include insufficient hardware, unreliable internet infrastructure, and lack of institutional support. Second-order barriers involve teachers' pedagogical beliefs, confidence, and readiness to manage digital tools in classroom settings. Both categories are relevant to Wordwall integration in Indonesian secondary schools, where infrastructure quality varies significantly across regions (Sukmawati & Nensia, 2019).

Empirical studies confirm these barriers in Wordwall-specific contexts. (Fonna & Adani, 2025) found that internet instability and device limitations frequently disrupted Wordwall sessions in Indonesian classrooms. (Urnila et al., 2024) identified the challenge of maintaining curriculum relevance when digital games prioritize visual appeal over content depth. (Insani et al., 2024) noted that without adequate pedagogical preparation, teachers risk using Wordwall as mere entertainment rather than as an instrument for measurable learning outcomes. These barriers underscore the need for teachers to develop strategic adaptations when integrating Wordwall into grammar instruction.

The TPACK framework, developed by (Mishra & Koehler, 2006), posits that effective technology integration requires the intersection of three knowledge domains: technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK). Teachers who operate within the TPACK intersection demonstrate the ability to select, adapt, and deploy technologies in ways that are pedagogically sound and content-appropriate. In the context of Wordwall, TPACK-oriented teachers modify templates to match learning objectives, scaffold game difficulty according to student ability levels, and integrate post-game reflective activities to deepen conceptual understanding (Fianto et al., 2024; Insani et al., 2024).

Collaborative professional learning also plays a significant role in sustaining adaptive technology use. (Lave & Wenger, 1991) concept of communities of practice describes how teachers develop and share pedagogical innovations through peer interaction. In digital tool contexts, teacher collaboration enables the sharing of templates, strategies, and contextual modifications, reducing individual preparation burdens and collectively advancing TPACK development (Fianto et al., 2024). This collaborative dimension is particularly relevant in under-resourced settings where institutional technology training is limited.

METHOD

Research Design

This study employed a qualitative descriptive case study design, consistent with (Yin, 2018) framework for examining phenomena in real-life contexts using multiple data sources. Qualitative case study methodology is appropriate when the research objective centers on understanding subjective perceptions and context-bound processes rather than establishing statistical generalizations (Creswell, 2014). This design enables an in-depth exploration of how teachers perceive, navigate, and adapt their use of Wordwall within specific classroom conditions.

Research Context and Participants

The study was conducted at a private secondary school with accreditation grade A in West Cikarang, West Java, Indonesia. Three English teachers participated through purposive sampling: all three had direct experience using Wordwall in adjective instruction and

represented varied levels of teaching experience. Teacher 1 (female) had ten years of experience and had used Wordwall for three years. Teacher 2 (male) had seven years of experience and two years of Wordwall use. Teacher 3 (female) had three years of experience and had used Wordwall since her undergraduate studies. This variation ensured diverse perspectives on technology integration across experience levels. The focus on adjective instruction aligns with the demands of the Merdeka Belajar curriculum, which foregrounds descriptive vocabulary as a core component of communicative competence (Damayanti et al., 2022).

Data Collection

Three data collection methods were employed to enable triangulation. First, semi-structured interviews were conducted individually with each participant using a five-question protocol covering perceptions of Wordwall, challenges encountered, and adaptive strategies applied. Each interview lasted approximately ten minutes and was recorded with participant consent. Second, document analysis was conducted on each teacher's lesson plans and Wordwall templates, focusing on the degree of technology integration, alignment with learning objectives, and pedagogical sequencing. Third, reflective journals were collected via Google Form, using five open-ended prompts designed to elicit teachers' reflective accounts of their Wordwall experiences. The triangulation of these three sources followed (Denzin, 2012) multi-source approach to enhance the credibility and validity of findings.

Data Analysis

Data were analyzed thematically using the (Miles et al., 2014) interactive model, comprising three stages: data reduction, data display, and conclusion drawing and verification. During data reduction, raw data from interviews, journals, and documents were systematically coded using open, axial, and selective coding sequences. Open coding generated initial labels for discrete data segments. Axial coding grouped conceptually related codes into sub-themes. Selective coding identified overarching themes corresponding to the three research questions. Coded data were then organized into thematic tables for systematic display. Member checking was conducted by returning interpretations to participants for verification, and an audit trail was maintained electronically to ensure confirmability and dependability (Lincoln & Guba, 1985).

FINDINGS AND DISCUSSION

The following section presents findings organized by data source. Each subsection reports the themes identified through the coding process, supported by evidence from interviews, documents, and reflective journals.

Semi-Structured Interview Findings

Table 1 summarizes the thematic analysis results from the interview data.

Table 1. Thematic Analysis of Interview Data

Main Themes	Sub-Themes	Codes (Sample)	Refs	Total Refs
Teachers' Perceptions of Wordwall	Perceived Usefulness	Enhances vocabulary retention; Increases student engagement; Supports immediate feedback; Saves grading time	12	30
	Perceived Ease of Use	User-friendly interface; Simple template customization; Quick setup; Accessible anytime	10	
	Aesthetic and Design Appeal	Attractive colors and animations; Clear visual layout; Stimulates visual learners	8	

Main Themes	Sub-Themes	Codes (Sample)	Refs	Total Refs
Pedagogical Integration	Active Learning and Participation	Encourages collaborative learning; Boosts classroom interaction; Promotes positive competition	9	31
	Lesson Alignment	Integration with lesson stages (warm-up, practice, review); Flexible templates; Formative assessment use	12	
	Pedagogical Creativity	Game variation; Contextual learning; Speaking practice integration	10	
Challenges in Implementation	Technical Barriers	Internet instability; Lagging during class; Device limitations	8	27
	Pedagogical Barriers	Over-competitiveness; Focus shift from learning to winning; Limited supervision	10	
	Preparation Challenges	Time-consuming content creation; Need for design skills; Limited institutional support	9	
Teachers' Adaptive Strategies	Technical Adaptation	Backup offline materials; Screen projection alternatives; Device sharing	8	28
	Pedagogical Adjustment	Setting class rules; Integrating post-game explanations; Encouraging reflection	10	
	Peer Collaboration	Template sharing; Template modification; Self-directed online learning	10	
Learning Outcomes and Impact	Student Engagement	Increased participation; Positive classroom atmosphere; Improved retention	9	23
	Skill Improvement	Improved contextual adjective use; Speaking/writing practice	8	
	Teacher Satisfaction	More dynamic teaching; Reduced grading load; Increased confidence in technology use	6	

Five main themes emerged from the interview data. Under Teachers' Perceptions of Wordwall, all three participants consistently reported high perceived usefulness and ease of use, consistent with (Davis, 1989) TAM framework. Teachers described how Wordwall improved vocabulary retention, motivated students through immediate feedback, and reduced grading workload. The platform's aesthetic design, including color contrasts and animations, was identified as especially effective for visual learners at the junior high school level.

The theme of Pedagogical Integration revealed that teachers embedded Wordwall across multiple lesson stages rather than restricting it to supplementary use. Templates such as Match-Up, Group Sort, and Random Wheel were deployed in warm-up, practice, and review phases, functioning simultaneously as instructional tools and formative assessment instruments. The Challenges theme documented three distinct barrier categories. Technical barriers primarily involved internet instability and insufficient classroom devices, consistent with (Ertmer, 1999) first-order barriers. Pedagogical barriers involved students' over-focus on scoring rather than language learning, reflecting second-order challenges. Preparation challenges included the time cost of creating contextually relevant templates without institutional support.

Under Teachers' Adaptive Strategies, participants demonstrated systematic responses to each barrier category. Technical adaptations included maintaining printable backup versions and using screen projection. Pedagogical adjustments included inserting reflective

pauses after game sessions and establishing explicit classroom participation rules. Peer collaboration involved sharing pre-built templates and collectively modifying activities, which strengthened TPACK competencies across the group. The final theme, Learning Outcomes and Impact, showed that Wordwall use correlated with increased student participation, improved adjective comprehension, and higher teacher confidence in digital teaching.

Document Analysis Findings

Table 2 presents the document analysis scores for each participant's lesson plan and Wordwall templates.

Table 2. Document Analysis Scores

Participant	Document Analysis Score (Lesson Plan & Wordwall Template) (out of 35)	Integration Level
Teacher 1	30/35	High Integration
Teacher 2	32/35	Very High Integration
Teacher 3	33/35	Very High Integration

Teacher 1's lesson plan demonstrated consistent Wordwall integration from introduction to closing, with particular strength in reflection and collaborative features. However, explicit contingency plans for technical disruptions were absent, and differentiation strategies for varied ability levels remained underdeveloped. Teacher 2's plan showed the most structured alignment among technological, pedagogical, and content dimensions. Wordwall functioned as both a game medium and a formative assessment tool, with reflective components supporting knowledge consolidation. Limitations included over-reliance on Wordwall without non-digital alternatives and underdeveloped backup strategies. Teacher 3's plan exhibited the highest holistic integration, combining Wordwall with Padlet to create a collaborative digital ecosystem and including a manual reflection sheet as a contingency measure. Nonetheless, Wordwall was not deployed in the opening session, and documentation of Wordwall analytics for summative purposes remained limited. Table 3 presents the thematic analysis of document data.

Table 3. Thematic Analysis of Document Data

Main Themes	Sub-Themes	Codes (Sample)	Refs	Total
Technology Integration	Integration across lesson stages	Wordwall embedded in all learning stages; consistent digital sequencing	3	8
	Integration with other tools	Combined with Padlet; digital-manual hybrid activities	2	
	Continuity and flow	Smooth transitions between lesson phases	3	
Pedagogical Relevance	Student engagement through gamification	Collaborative competition; active participation	3	9
	Reflective and experiential learning	Reflection tasks reinforce conceptual understanding	3	
	Active learning practices	Inquiry-based and student-centered activities	3	
Content Alignment	Vocabulary and grammar focus	Activities aligned with adjective learning objectives	3	8
	Contextual learning	Adjectives applied in personal and local contexts	3	
	Cross-curricular linkage	Integration with ICT and character education goals	2	

Main Themes	Sub-Themes	Codes (Sample)	Refs	Total
Usability and Accessibility	Ease of use	Simple templates; accessible across devices	3	8
	Accessibility alternatives	Paper-based backup; shared device protocols	2	
	Digital readiness	Projectors and institutional internet support	3	

Document analysis confirmed three overarching patterns. First, all teachers demonstrated adequate application of TPACK principles, with integration quality progressing from Teacher 1 to Teacher 3. Second, not all lesson plans explicitly addressed (Ertmer, 1999) technology barriers through formal contingency planning, indicating a gap between teachers' practical adaptive behavior and their written planning documentation. Third, the combination of Wordwall with non-digital alternatives such as reflective worksheets and Padlet boards reflected a hybrid pedagogy approach that extended beyond single-tool dependency.

Reflective Journal Findings

Table 4 presents the thematic analysis of teachers' reflective journal data.

Table 4. Thematic Analysis of Reflective Journal Data

Main Themes	Sub-Themes	Codes (Sample)	Refs	Total
Teachers' Perceptions of Wordwall	Initial Experiences and Motivation	Excitement; Positive student response; Digital mindset shift	9	33
	Perceived Usefulness	Interactive learning; Enhanced student focus; Immediate feedback loops	12	
	Perceived Ease of Use	Simple interface; Efficient assessment; Reusable templates	12	
Creativity and Pedagogical Adaptation	Teacher Creativity	Innovative activity design; Flexible template use	10	30
	Pedagogical Shift	Student-centered learning; Active communicative practice	9	
	Reflective Practice	Continuous technique evaluation; Post-lesson modification	11	

Reflective journal data revealed a consistent trajectory from initial enthusiasm to sustained reflective practice. Under Teachers' Perceptions of Wordwall, all three teachers described early positive responses to the platform, noting shifts in student engagement and classroom dynamics. As experience with Wordwall deepened, teachers articulated more nuanced views of its pedagogical value, particularly regarding its capacity for immediate feedback and formative assessment integration. The theme of Creativity and Pedagogical Adaptation captured the evolution of teachers' instructional approaches. Journals documented deliberate modifications to game types, difficulty levels, and post-game activities driven by ongoing reflection on student responses. This pattern reflects (Schon, 1983) concept of reflection-in-action, wherein teachers adjust their practice responsively during and after instruction rather than relying on fixed lesson templates.

Discussion

Teachers' Perceptions of Wordwall

RQ1: How do secondary school English teachers perceive the use of Wordwall in teaching adjectives?

All three teachers held consistently positive perceptions of Wordwall, aligned with the two central constructs of (Davis, 1989) TAM: perceived usefulness and perceived ease of use. Teachers reported that Wordwall enhanced student motivation, increased active participation, and supported formative assessment without adding significant preparation complexity. These findings extend the results of (Paksi et al., 2023), who documented positive teacher perceptions of Wordwall for vocabulary instruction, by demonstrating that these perceptions hold for grammar-specific applications, particularly adjective teaching.

The aesthetic appeal of Wordwall's interface, including its animations, color contrasts, and audio feedback, functioned as a visual-kinesthetic stimulus that supported engagement among junior high school learners. This aligns with (Gee, 2007) game-based learning theory, which identifies visual and audio feedback as critical elements in sustaining emotional engagement. (Fianto et al., 2024) reached similar conclusions regarding visual interactivity and emotional engagement in game-based media, a finding that this study corroborates in a grammar instruction context.

Importantly, teachers did not view Wordwall as a supplementary entertainment tool. All three participants embedded it across multiple lesson phases and used its auto-grading function as a real-time diagnostic instrument. This pedagogically integrated use reflects higher TPACK competency than what prior studies on general vocabulary instruction reported (Insani et al., 2024), suggesting that experience and reflective practice contribute to more sophisticated technology deployment over time.

Challenges in Using Wordwall

RQ2: What challenges do teachers face in integrating Wordwall for adjective instruction?

Three categories of challenges emerged: technical, pedagogical, and content relevance. Technical barriers, particularly internet instability and device limitations, represent first-order barriers in (Ertmer, 1999) framework. These findings are consistent with (Fonna & Adani, 2025), who identified connectivity issues as the dominant external barrier in Indonesian digital learning contexts. The disruptive effect of internet failure on student momentum underscores the importance of contingency planning in lesson design.

Pedagogical barriers arose when the competitive structure of Wordwall shifted students' focus from language learning to score acquisition. This finding extends (Ertmer, 1999) second-order barrier concept by demonstrating how gamification design elements, originally intended to motivate, can create instructional distraction when not managed with explicit pedagogical scaffolding. (Insani et al., 2024) similarly noted that the effectiveness of Wordwall depends on teachers' ability to maintain learning focus amid game dynamics.

The content relevance barrier is a novel finding not prominently reported in prior Wordwall studies. Teachers struggled to adapt default Wordwall templates to reflect local cultural contexts and curriculum-specific language objectives for adjective instruction. (Urnila et al., 2024) noted that digital content must be age and context appropriate; the present study extends this principle to the domain of grammatical specificity, showing that generic templates may not adequately represent the linguistic demands of adjective instruction as specified in the Merdeka Belajar curriculum.

Adaptive Strategies

RQ3: What adaptive strategies do teachers employ to optimize Wordwall for adjective instruction?

Teachers demonstrated three categories of adaptive strategies: technical, pedagogical, and collaborative. Technical adaptations included maintaining printable fallback materials and using pre-downloaded content for offline projection. These responses reflect practical

TPACK application: teachers drew on technological knowledge to protect pedagogical continuity despite infrastructure limitations.

Pedagogical adaptations were the most analytically significant. Teachers modified game templates to create scaffolded difficulty progressions, moving students from recognition-level (Match-Up) to production-level (Group Sort, Open the Box) adjective tasks. This scaffolding approach aligns with (Vygotsky, 1978) Zone of Proximal Development and is consistent with (Insani et al., 2024) finding that digital scaffolding through varied interactive media supports progression from lower-order to higher-order thinking. Post-game reflective activities, such as writing personal sentences using adjectives introduced in Wordwall, extended learning beyond game mechanics into constructive language use, consistent with (Bonwell & Eison, 1991) active learning principles.

Collaborative adaptation through peer template sharing represents a community of practice (Lave & Wenger, 1991) that reduced individual workload while collectively advancing TPACK competency. (Fianto et al., 2024) identified peer collaboration as a major factor in teachers' confidence in digital activity design. The present study confirms and extends this finding by documenting how template-sharing discussions generated pedagogical innovations, such as adjusting game difficulty based on colleagues' classroom experiences, rather than merely reducing preparation time.

CONCLUSIONS

Based on the findings, secondary school English teachers perceived Wordwall as a useful, accessible, and pedagogically appropriate platform for teaching adjectives. The application promoted active participation, formative assessment, and student motivation, supporting the Technology Acceptance Model and previous studies on digital vocabulary instruction. Three major challenges emerged: technical barriers, including unstable internet connections and limited devices; pedagogical barriers, such as competitive distractions and classroom management; and content relevance barriers, where generic templates did not fully align with curriculum-based adjective instruction. The identification of content relevance barriers extends existing Wordwall research. To address these challenges, teachers implemented adaptive strategies, including contingency planning, scaffolded template selection, reflective follow-up activities, and peer collaboration, demonstrating effective integration of technological, pedagogical, and content knowledge. These findings indicate that Wordwall can effectively support adjective instruction when accompanied by thoughtful pedagogical adaptation. The study contributes to research on technology integration in EFL grammar teaching and highlights the need for continuous professional development and institutional support. Future research should involve larger samples, multiple schools, diverse grammar topics, and student learning outcomes.

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