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Research Article

WORDWALL AS TECHNOLOGY-BASED LEARNING MEDIA AND STUDENTS' MOTIVATION IN LEARNING ENGLISH

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Abstract

Wordwall, a game-based platform offering quizzes, matching games, mazes and other interactive templates, is widely used in Indonesian English classrooms. Earlier studies have mostly measured its effects on vocabulary or motivation scores, and few have examined how students themselves experience it. This qualitative descriptive study explored how eleventh-grade students at MAN 2 Bone, South Sulawesi, described their experience of learning English with Wordwall, and how these experiences related to the basic psychological needs for autonomy, competence and relatedness proposed by Self-Determination Theory (SDT). Twelve students selected purposively were interviewed individually, and their English teacher was interviewed to provide context. The data were analysed with reflexive thematic analysis, first inductively and then with SDT as an interpretive lens. Six themes were identified: an interesting and enjoyable learning experience, game-like engagement, a sense of progress and achievement, self-initiated practice outside class, teacher support and classroom atmosphere, and encouragement from peers and family. Students described the activities as enjoyable for their own sake. Immediate feedback and visible scores gave them a sense of competence, and the option to replay activities at home supported their autonomy, while teacher guidance and peer interaction supported relatedness. Their reasons for using Wordwall ranged from enjoyment to wanting good marks on tests. These perceptions come from twelve students in one school, and they do not show that Wordwall changes motivation or achievement. They suggest, however, that teachers can use game-based platforms in ways that support students' basic psychological needs.

Keywords: *English Learning Motivation; Self-Determination Theory; Technology-Based Learning Media; Wordwall*

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INTRODUCTION

Digital technology has changed how English is taught in many Indonesian classrooms. Teachers now use online platforms to present materials, check understanding and give students immediate feedback, and game-based platforms have become especially popular

because they combine practice with features drawn from games, such as points, timers and leaderboards (Wang & Tahir, 2020). Technology-based learning media of this kind can also support learning by integrating verbal information with visual representations, as Mayer's (2014) cognitive theory of multimedia learning suggests.

Wordwall is one of the most widely used of these platforms. It enables teachers to create interactive activities from templates, including quizzes, matching games, word searches, random wheels, anagrams and mazes, and to share them with students in class or as homework. Its visual displays, immediate feedback and scoreboards are intended to encourage active participation. Indonesian studies have reported that Wordwall improved students' vocabulary mastery and learning motivation (Alpatikah, 2022; Napitupulu et al., 2024; Noftariani, 2023). Rahayu et al. (2025) found that it supported speaking practice, and research on digital game-based learning more broadly has linked gameplay to motivation, self-efficacy and performance (Zou et al., 2021).

Learning motivation is central to these claims. Self-Determination Theory (SDT) explains motivation through three basic psychological needs: autonomy, competence and relatedness. When these needs are satisfied, learners tend to develop more self-determined forms of motivation (Ryan & Deci, 2020). SDT has a long history in second language research (Noels et al., 2000), and it has also been applied to gamification. In an experimental study, Sailer et al. (2017) found that badges, leaderboards and performance graphs increased students' satisfaction of the need for competence, and that avatars, stories and teammates affected relatedness. Game elements did not, however, change perceived autonomy as intended.

Most studies of Wordwall in Indonesia, however, have used experimental or classroom action designs that measure vocabulary scores or motivation questionnaires. They show whether scores changed but not how students experience the platform: which features they value, why they use it, and how teachers, classmates and families shape that experience. They also rarely use SDT to interpret students' accounts, even though the theory distinguishes between doing an activity because it is enjoyable and doing it for marks or approval. This distinction matters for teachers who want students to keep practising English when no grade is attached. The present study therefore explored senior high school students' experiences of Wordwall through interviews and interpreted them through SDT.

Preliminary observations at MAN 2 Bone, an Islamic senior high school in South Sulawesi, showed that English teachers had integrated Wordwall into their lessons. The

teacher reported that students became more enthusiastic and participated more actively when Wordwall was used. The study addressed two research questions:

RQ1. How do eleventh-grade students describe their experience of learning English with Wordwall?

RQ2. How do these experiences relate to the satisfaction of the needs for autonomy, competence and relatedness, and to different forms of motivation?

LITERATURE REVIEW

Motivation in Second Language Learning

Motivation determines learners' willingness to participate in classroom activities, complete tasks and persist when learning becomes difficult. General definitions describe it as the initiation, direction, intensity and persistence of behaviour (Brown, 2007), or as an internal drive that pushes people to achieve goals (Harmer, 2003). Second language research has developed more specific models. Dörnyei's (2009) L2 Motivational Self System explains motivation through learners' ideal and ought-to L2 selves and their experience of the learning situation. The last of these, the L2 learning experience, is the component most directly affected by classroom materials and activities such as game-based platforms.

Self-Determination Theory

SDT proposes that people have three basic psychological needs. Autonomy is the need to experience one's actions as self-endorsed, competence the need to feel effective, and relatedness the need to feel connected to and cared for by others (Ryan & Deci, 2020). Environments that support these needs foster more self-determined motivation. Environments that thwart them, for example through pressure, control or isolation, foster less self-determined motivation or amotivation.

SDT also distinguishes types of motivation along a continuum. Intrinsic motivation means doing an activity because it is interesting or enjoyable in itself. Extrinsic motivation means doing it for an outcome separate from the activity. It ranges from external regulation (to gain rewards or avoid punishment), through introjected regulation (to avoid guilt or gain approval), to identified regulation (because the activity is personally valued) and integrated regulation (because it fits one's values and identity). Amotivation is the absence of any reason to act (Ryan & Deci, 2020). Noels et al. (2000) showed that these distinctions apply to second language learners: identified regulation and intrinsic motivation were associated with greater

effort and persistence than external regulation. In a longitudinal study of 515 Japanese elementary school students, Oga-Baldwin et al. (2017) further found that students' self-determined motivation, their perceptions of teacher support and need satisfaction, and their engagement in foreign language classes influenced one another over a school year. In this framework, basic needs and types of motivation are different concepts. Support from a teacher or family, for example, satisfies the need for relatedness; it is not itself a type of motivation.

Gamification, Wordwall and Basic Needs

Gamification is the use of game design elements in non-game contexts. Its motivational effects depend on which elements are used. Sailer et al. (2017) found that badges, leaderboards and performance graphs increased competence need satisfaction, while avatars, meaningful stories and teammates increased relatedness. A review of 93 studies of Kahoot!, a platform similar to Wordwall, reported consistent benefits for engagement and learning (Wang & Tahir, 2020). It also identified recurring drawbacks: unreliable internet connections, stress caused by time limits, fear of losing, and scoring that rewards speed and may encourage guessing. A systematic review of empirical gamification research similarly found mostly positive effects on motivation and engagement, but noted that many studies were short, lacked a theoretical basis and seldom examined how learners experienced individual game elements (Zainuddin et al., 2020).

Wordwall provides many of these elements. According to Çil (2021), its templates include quizzes, matching games, word searches, anagrams, random wheels and categorisation activities, and the platform gives immediate feedback and displays scores and leaderboards. Teachers can also set activities as assignments, so that students can play them outside class. In SDT terms, immediate feedback and scores may support competence, the option to replay activities may support autonomy, and team or whole-class play may support relatedness. Competition and time limits may also create pressure, which can undermine more self-determined motivation. How these possibilities play out depends on how teachers use the platform and how students experience it, which is the focus of this study.

METHOD

Research Design

This study used a qualitative descriptive design (Sandelowski, 2000), which aims to give a comprehensive account of participants' experiences in everyday terms while staying close to the data. The data were analysed with reflexive thematic analysis (Braun & Clarke, 2006, 2019). This design was chosen because the aim was to describe how students experience Wordwall and to interpret these accounts through SDT, rather than to identify the essential structure of a lived experience, as phenomenology would require.

Participants and Setting

The study was conducted at MAN 2 Bone, an Islamic senior high school in Bone Regency, South Sulawesi, Indonesia. Wordwall had been used in eleventh-grade English lessons for about duration, mainly for e.g., vocabulary and grammar review, about frequency. Twelve eleventh-grade students from number of classes classes took part (n female and n male, aged range). Participants were selected purposively according to three criteria: they had used Wordwall in at least n English lessons, they were willing to be interviewed, and they varied in English achievement confirm criteria. The English teacher identified eligible students, and the researcher invited n of them to take part describe the selection procedure precisely.

Interviews continued until no new codes emerged from additional interviews. Following Guest et al. (2006), saturation was judged by comparing the codes from each new interview with the existing code list: e.g., no new codes appeared in the last two interviews. The English teacher who used Wordwall in these classes was also interviewed once to provide context on how and why the platform was used length and date of the teacher interview. Her account is reported separately from the students' accounts and is used to contextualise them.

Interview Guide

Students were interviewed with a semi-structured guide of twelve open-ended questions. Six questions asked about students' interest, enjoyment and personal satisfaction when learning English with Wordwall, and six asked about the role of the teacher, classmates, family and the school environment. Follow-up questions asked students to give examples and to describe any difficulties or dislikes, so that negative as well as positive experiences could

emerge. The guide was reviewed by the second andan expert and piloted with one student who did not take part in the study.

Data Collection

After permission was obtained from the school, the researcher explained the objectives and procedures of the study to the students, and those who agreed to take part were interviewed individually at school. The interviews were conducted in Indonesian and lasted 30 minutes. They were audio-recorded with participants' consent and transcribed verbatim. Excerpts used in this article were translated into English by the first author, and the translations were checked by the second author confirm. Each participant is identified by a code (R1–R12).

Data Analysis

The analysis followed the six phases of reflexive thematic analysis: familiarisation, coding, generating initial themes, reviewing themes, defining and naming themes, and writing up (Braun & Clarke, 2006, 2019). Coding was first inductive: the first author coded each transcript line by line without applying SDT categories, producing 6 initial codes, which were grouped into six themes. In the interpretive stage, each theme was then examined through SDT. The analysis asked which basic needs it related to and which form of motivation students' stated reasons for using Wordwall reflected. These reasons included enjoyment, wanting to improve, wanting good marks and pleasing others. Table 1 summarises the themes and the number of students who contributed to each.

Several procedures supported the trustworthiness of the analysis (Lincoln & Guba, 1985). The second author reviewed the codes and themes against the transcripts, and disagreements were resolved through discussion. A summary of the themes was shared with 12 participants, who confirmed that it reflected their experiences, and an audit trail of transcripts, codes and analytic notes was kept. The first author interested in educational technology, had no teaching relationship with the participants He was aware that his interest in the platform might lead him to emphasize positive experiences, and he therefore looked for negative and contrasting cases during coding.

Table 1. Themes, sub-themes and number of contributing students

Theme	Sub-themes	Students (n = 12)	Related need
Interesting and enjoyable learning experience	Lighter lessons; different from paper worksheets; enthusiasm	12	—
Game-like engagement	Resembles games played outside school; favourite templates (e.g., maze)	12	—
Sense of progress and achievement	Pride in correct answers; immediate feedback; seeing weaknesses	12	Competence
Self-initiated practice outside class	Replaying activities at home; reviewing before tests	12	Autonomy
Teacher support and classroom atmosphere	Guidance and encouragement; lively interaction	12	Relatedness
Encouragement from peers and family	Shared excitement; friendly competition; family approval	12	Relatedness

Note. The first two themes describe enjoyment of the activity itself (intrinsic motivation) rather than satisfaction of a specific need.

FINDINGS AND DISCUSSION

Findings

This section answers RQ1 by presenting the six themes in students' accounts. The teacher's account is reported where it provides context. RQ2 is addressed in the Discussion.

Interesting and enjoyable learning experience

Most students described Wordwall lessons as more interesting and enjoyable than lessons based on paper worksheets, mentioning its colourful displays, interactive exercises and immediate feedback. One student put it simply:

> *"Wordwall makes lessons feel lighter and easier for me to follow."* (R5)

The teacher's account was consistent with this picture. She said that students immediately asked for the game code when Wordwall was announced and seemed more excited and willing to engage than in conventional activities.

Game-like engagement

Many students compared Wordwall with the online games and quizzes they played outside school, and several described it as a hobby rather than an obligation:

> *"I like playing educational games and online quizzes, so when my teacher uses Wordwall, I feel like I'm doing my hobby, but learning at the same time."* (R2)

> *"Wordwall makes me feel like I'm playing the quiz games I usually play."* (R7)

The teacher explained that she had tried Kahoot, Quizizz and Bamboozle before choosing Wordwall, and that students particularly liked the maze template, in which they answer questions while avoiding obstacles.

Sense of progress and achievement

Students described feeling proud and satisfied when they answered correctly or obtained good scores. Several also valued the immediate feedback because it showed them what they had not yet understood:

> *"I feel satisfied and motivated because this success shows that I understand the material well."* (R2)
>
> *"I feel proud when I manage to be the fastest or when I can answer questions that were previously difficult."* (R3)
>
> *"The results are immediately visible, so I can identify my weaknesses and learn how to improve them."* (R4)

According to the teacher, students were less afraid of making mistakes than with paper worksheets because they could try an activity again until they improved.

Self-initiated practice outside class

Several students reported opening Wordwall activities at home without being asked, either to remember material or to prepare for tests:

> *"Sometimes when I feel like I want to review the material because I'm afraid I'll forget it, I reopen the Wordwall game we played in class."* (R2)
>
> *"I usually use it to review the material before tests."* (R6)

The teacher explained that she sometimes set Wordwall activities as assignments, which allowed absent students to complete them at home, and that she used them mainly for vocabulary practice before classroom evaluation.

Teacher support and classroom atmosphere

Students described the teacher's guidance and encouragement during Wordwall activities as making them feel comfortable and confident, and the classroom atmosphere as livelier:

> *"The teacher provided guidance and motivation so that I felt comfortable and confident."* (R3)
>
> *"The classroom atmosphere became more exciting and made me more enthusiastic about attending classes."* (R8)

The teacher said that students discussed answers and moved around the classroom to exchange ideas during Wordwall activities, and that she deliberately added icebreakers, rewards and praise to maintain their enthusiasm.

Encouragement from peers and family

This was a minor theme. Its clearest expression came from one student, who described both family approval and shared excitement among classmates:

"My family is happy to see me studying in a way that doesn't stress me out." (R2)
"When my friends are excited, I get excited too." (R2)

The family support described here concerns the less stressful way of studying that Wordwall made possible, rather than Wordwall itself.

Difficulties and ambivalent experiences

Students were asked about difficulties and dislikes. Students said, that they have problems with internet access or devices, pressure from time limits or rankings, or boredom when the same template was repeated, and how many students mentioned each. If no student reported any difficulty, state this explicitly. One student's pride in being "the fastest" also shows that speed and ranking mattered to some students, which may be less encouraging for those who are usually slower.

Discussion

RQ2 asked how students' experiences related to the satisfaction of basic psychological needs and to different forms of motivation. Table 2 summarises the interpretation, which is discussed below.

Table 2. Themes interpreted through Self-Determination Theory

Theme	Basic need or motivational quality	Evidence in students' accounts
Interesting and enjoyable experience; game-like engagement	Intrinsic motivation (enjoyment of the activity itself)	"Lighter" lessons; feeling like a hobby
Sense of progress and achievement	Competence	Pride in correct answers; feedback showing weaknesses
Self-initiated practice outside class	Autonomy; identified or external regulation	Replaying games to avoid forgetting; reviewing before tests
Teacher support and classroom atmosphere	Relatedness (and competence through guidance)	Feeling comfortable and confident with the teacher's guidance
Encouragement from peers and family	Relatedness; possibly introjected regulation	Shared excitement; family approval

Students' descriptions of Wordwall as enjoyable and game-like correspond to intrinsic motivation: they valued the activity for its own sake. Students compared it with games they already enjoyed, which suggests that Wordwall makes English practice resemble a familiar leisure activity. This matches the benefits for engagement reported for Wordwall in Indonesian secondary schools (Khaerunnisa et al., 2025; Napitupulu et al., 2024) and for similar platforms internationally (Wang & Tahir, 2020). The visual displays and animations that students mentioned are also consistent with Mayer's (2014) argument that combining words and images supports learners' processing. In this study, however, they were valued mainly for making lessons attractive.

The sense of progress and achievement corresponds to the need for competence. Students linked their pride to correct answers, speed and visible scores, and they valued immediate feedback for showing their weaknesses. This agrees with Sailer et al.'s (2017) finding that performance feedback and leaderboards increase competence need satisfaction. Students' pride in "being the fastest", however, shows that competence was sometimes judged by comparison with others. Wang and Tahir (2020) warn that speed-based scoring can create stress and encourage guessing. For students who rarely win, rankings may undermine rather than support their sense of competence, a possibility that cannot be ruled out given the difficulties reported above and the limitations of the present data.

Self-initiated practice outside class is the clearest evidence of autonomy. Students chose to reopen activities without being told to. Their reasons, however, differed. Replaying a game because one is afraid of forgetting the material, or because one wants to understand it, reflects identified regulation: the student values the learning. Reviewing "before tests" may reflect more external regulation, in which the goal is a good mark. Wordwall therefore did not make all motivation intrinsic. It gave students a convenient way to act on their own reasons, which ranged from enjoyment to concern about grades. This nuance matters because, as Noels et al. (2000) showed, more self-determined reasons are associated with greater persistence in language learning.

The themes of teacher support and of peer and family encouragement relate to the need for relatedness. Students felt comfortable and confident because of the teacher's guidance, and the teacher's account of students discussing answers together suggests that whole-class play created a shared, lively atmosphere. This is consistent with Sailer et al.'s (2017) finding that teammates support relatedness. It also shows that the teacher's own practices, such as encouragement, icebreakers and rewards, were part of what students

experienced as "Wordwall lessons". This agrees with Oga-Baldwin et al.'s (2017) finding that perceived teacher support and students' self-determined motivation in foreign language classes reinforce each other. Wahdhany et al. (2024) reported similar effects of teacher support with Wordwall, although in a primary school context. Family approval, mentioned mainly by one student, may support relatedness but may also reflect introjected regulation, that is, studying partly to please parents. It should be treated as a minor finding.

Overall, students' accounts suggest that Wordwall, as used by this teacher, created conditions that can support all three basic needs: competence through feedback and scores, autonomy through the option to practise independently, and relatedness through shared play and teacher guidance. These conditions depended as much on the teacher's choices as on the platform. The findings also suggest two cautions for teachers. Rankings and speed-based scores can support competence for some students and undermine it for others, and the ease of practice before tests may strengthen grade-oriented rather than self-determined reasons for learning. Teachers can reduce these risks by using untimed or team-based modes, emphasising personal improvement rather than rank, and inviting students to choose activities that interest them.

Limitations

The study has several limitations. It was conducted in one school with twelve students who were selected purposively, possibly with the teacher's help, and who may have been more positive about Wordwall than their classmates. The data are self-reports from single interviews, so they may be influenced by social desirability and by the researcher's presence. No classroom observations or measures of motivation or achievement were collected, so the findings describe students' perceptions rather than effects of Wordwall. Finally, some themes, particularly encouragement from family, rest on few students' accounts.

CONCLUSION

This study explored how eleventh-grade students at MAN 2 Bone experienced learning English with Wordwall and how their experiences related to Self-Determination Theory. Students described Wordwall lessons as enjoyable and game-like, and they valued the sense of progress that immediate feedback and scores gave them. They chose to practise with Wordwall outside class and appreciated the guidance of their teacher and the shared excitement of classmates. Interpreted through SDT, these accounts suggest that Wordwall, as

used in these classes, supported students' needs for competence, autonomy and relatedness. Their reasons for using it ranged from enjoyment to wanting good marks.

These conclusions are based on the perceptions of twelve students in one school and do not show that Wordwall improves motivation or achievement. For teachers, the findings suggest using Wordwall in ways that support basic needs: giving feedback that highlights personal progress, allowing students to replay and choose activities, and using team play to build relatedness. Teachers should also be aware that rankings and time limits can pressure weaker students. Future research should include classroom observation and students with different attitudes to the platform, and should combine interviews with validated measures of need satisfaction and motivation, for example in a mixed-methods design across several schools.

AI USE AND DISCLOSURE

The authors used generative AI tools Grammarly, Chatgpt, Quillbot to check grammar, proofread the manuscript, review its clarity and consistency, and assist in searching for relevant references. All references suggested by the tools were checked against the original sources. The authors reviewed and edited all content and take full responsibility for the article.

ETHICAL STATEMENT AND INFORMED CONSENT

This study was conducted in accordance with the ethical principles for research involving human participants of Universitas Islam Negeri Alauddin Makassar and with the principles of the Declaration of Helsinki. Formal permission was obtained from the principal of MAN 2 Bone before data collection. All participants received information about the objectives, procedures, voluntary nature of participation and intended use of the data, and gave informed consent before the interviews. Participants' identities were anonymised, the data were stored securely and used only for research, and participants were informed that they could withdraw at any time without consequences.

CRediT AUTHORSHIP CONTRIBUTION STATEMENT

- Andi Risal Syarifuddin: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing – original draft.
- Serliah Nur: Validation, Formal analysis (review of codes and themes), Writing – review & editing.

CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests, professional affiliations or personal relationships that could have influenced the research process or the interpretation of the findings.

DATA AVAILABILITY

The data supporting the findings of this study are available from the corresponding author on reasonable request. To protect participants' confidentiality, the raw data are not publicly accessible. Anonymised interview transcripts, the interview guide and the coding sheet may be provided for academic and non-commercial research purposes.

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