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INTEGRATION OF THE WORDWALL SERVICE INTO THE EDUCATIONAL PROCESS: WAYS TO IMPROVE STUDENTS' GRAMMAR, VOCABULARY AND ORAL SPEECH

Abstract

Digital platforms have become firmly embedded in the practice of School No. 7 in Uralsk, yet rigorous comparative evidence on their impact on adolescents' language learning outcomes remains limited. The aim of the study is to experimentally assess the impact of using the Wordwall digital platform in the format of short interactive microsessions on the formation of grammatical and lexical skills, as well as the development of oral speech in eighth grade students, followed by justification of the effectiveness of integrating digital tools into the educational process based on a comparative analysis of the results of experimental and control groups. This article presents a quasi-experimental study examining the effects of short interactive Wordwall micro-sessions on eighth-grade students' mastery of grammar and vocabulary and the development of speaking skills. Fifty students (experimental group, EG = 25; control group, CG = 25) participated over six weeks (four weeks of instruction plus a delayed retention check two weeks later); both groups followed the same syllabus, while the experimental group systematically used Wordwall activities 3 times, 8–12 minutes per week. Assessment included pre-, post-, and delayed (retention) tests; speaking was rated using the CAF rubric (complexity, accuracy, fluency). By median Post–Pre gains, the experimental group outperformed the control: grammar—gain of +14 points (Post–Pre) versus +9 (out of 100); vocabulary—gain of +9 (out of 40) versus +6; speaking—gain of +5.0 (out of 30) versus +3.5. The share of students who surpassed the predefined thresholds for meaningful progress was also higher in the EG (grammar: 76% vs. 40%; vocabulary: 72% vs. 44%; speaking: 64% vs. 36%). The paper discusses mechanisms of action (retrieval practice, gamification, ICAP), design limitations, and practical recommendations for integrating Wordwall into lessons.

Key words: Wordwall, digital pedagogy, retrieval practice, gamification, quasi-experiment, learning gains.

Introduction

The rapid development of digital technologies has significantly changed the way students learn languages, making interactive tools such as Wordwall an essential part of the modern classroom. According to Nurbekova Zh. et al, the adaptation of higher and postgraduate education to the needs of the digital era is essential, with technology serving as a tool to support student-centered approaches without diminishing the teacher's pivotal role [1]. In recent years, interactive micro-tasks have taken a firm place in language education because they enable frequent, short cycles of «question → answer → immediate feedback», in which well-established learning mechanisms—retrieval practice (testing effect), spaced practice, desirable difficulties, formative feedback, and gamification—work together; in this format, the Wordwall platform is useful not as a «toy», but as a carrier of these approaches as ready-made templates, rapid checking, printable versions, and therefore integrates well into lessons targeting grammar, vocabulary, and speaking [2]. As D.E. Sheriyazdanova highlights, Wordwall is an interactive platform for creating quizzes, matching games, and board games that activate prior knowledge, develop vocabulary, and enhance grammar skills [3]. Building on this idea, Bolatbek S., Aliakbarova A.T., and Tankibayeva M.Kh. note that the majority of studies on the use of mobile technologies in education are mainly theoretical in nature, emphasizing their didactic features, classifications, and theoretical justification for their use in various learning contexts, as well as describing successful examples of integrating mobile applications into the educational process [4]. In my research, I focus on the practical implementation of these technologies, demonstrating how Wordwall can effectively improve students' grammar, vocabulary, and speaking skills through interactive and engaging learning activities. A large body of research on retrieval practice shows that practice tests reliably

outperform rereading and other study modes for long-term memory and even support transfer to novel tasks, which Wordwall can easily approximate through quizzes, typed-response items, and matching activities [5]. The benefits of spaced practice are confirmed in meta-analytic and experimental work, which suggest scheduling short Wordwall sessions that revisit the same targets [6].

The notion of desirable difficulties explains why tasks that require generation, variation of conditions, and the use of mild time constraints make learning more durable and transferable. According to Shute V. J., syntheses on formative feedback show that elaborated feedback — including explanations and cues — is more effective than simple right/wrong signals. In a digital environment like Wordwall, such feedback can be embedded directly into tasks to provide learners with immediate and meaningful guidance [7].

Regarding gamification, meta-analytic evidence indicates small-to-moderate but robust effects on cognitive, motivational, and behavioral outcomes, with recent reviews confirming benefits in EFL/ESL contexts—so game elements function as an «amplifier» of regular practice rather than a goal in themselves [8]. For speaking assessment, we adopt the CAF framework (Complexity–Accuracy–Fluency), elaborated in the work of Housen, Kuiken, and Vedder and further linked to functional adequacy in newer studies, which provides transparent metrics for short post-Wordwall monologues [9]. Finally, empirical studies specifically on Wordwall are accumulating: quasi-experiments and surveys report vocabulary gains and positive learner attitudes toward regular micro-activities, albeit with varying study quality—patterns that align with the broader literatures on practice testing and gamified learning. Taken together, this defines the theoretical frame of the present work: we treat Wordwall as an operational container for high-evidence mechanisms and, in what follows, show how to connect work on form (grammar), expansion of meaning (lexis), and transition to productive speaking, accompanied by transparent metrics of gain and retention.

Research Questions:

1. Do Wordwall micro-sessions produce larger Post–Pre gains in grammar and vocabulary than traditional practice?
2. Does the share of students who cross predefined thresholds of meaningful progress increase?
3. Is the effect sustained at delayed testing?

Materials and Methods of research

We experimented at School №7 in Uralsk with 8th-grade classes: two intact parallel classes of 25 students each. The design was quasi-experimental with two parallel groups: Control and Wordwall. Both groups studied the same module with the same teacher, equal lesson time, and identical homework load; the only difference was the practice format. The Control group used familiar paper-based and oral exercises without the platform. In contrast, the Wordwall group completed 8–12-minute micro-sessions on the platform three times per week (quizzes, typed response, matching, random wheel) with immediate elaborated feedback and light gamified elements. The instructional cycle lasted four weeks, followed by a delayed retention check two weeks later, so that the total study period covered six weeks from the initial Pre-test to the delayed measurement.

For all comparisons between the Wordwall and Control groups, we conducted independent-samples t-tests on Pre-, Post-, and Retention scores for grammar, vocabulary, and speaking. In addition to reporting median gains and percentages of students crossing the predefined progress thresholds, we calculated p-values to assess statistical significance, Cohen's d to estimate effect sizes, and 95% confidence intervals for mean differences. This combination of indices allows us to evaluate not only whether the observed differences are unlikely to be due to chance, but also how large and educationally meaningful these differences are.

Measurement points and instruments

Testing was conducted at three points: Pre (before instruction), Post (immediately after the instructional phase), and Retention (two weeks after Post). Vocabulary was assessed using a

thematic test that combined recognition, recall, and collocation tasks (maximum 40 points). Grammar was measured using productive tasks—sentence transformations and open-gap fill (maximum 100 points). Speaking was elicited by a 60–120-second monologue based on a visual prompt and was rated using an analytic CAF rubric (complexity, accuracy, fluency; maximum 30 points). Two trained raters scored speaking independently; if their totals differed by more than 2 points (out of 30), a brief calibration on anchor samples was performed and the responses were rescored. Parallel Pre/Post/Retention forms, prepared in advance and equated for difficulty through piloting and expert review, were used.

To quantify inter-rater agreement on the speaking scores, we computed an intraclass correlation coefficient (two-way mixed model, absolute agreement). The resulting ICC value indicated high consistency between the two raters, which strengthens the reliability of the speaking outcome measure.

Table 1 – Comprehensive Rubric for Assessing Students' Performance and Engagement

Criteria	Excellent (90-100)	Good (75-89)	Satisfactory (50-74)	Needs Improvement (less than 50)
Participation and Engagement	Actively engages throughout the lesson, contributing ideas, asking questions, and supporting classroom discussions.	Participates regularly and responds when prompted; demonstrates clear interest in learning.	Participates occasionally; needs encouragement to stay involved.	Rarely participates or shows interest; remains disengaged during lessons.
Group and Pair Collaboration	Works productively with peers; demonstrates leadership, cooperation, and respect for others' ideas.	Collaborates effectively; completes shared tasks responsibly.	Participates in group work when instructed; limited interaction with peers.	Avoids collaboration; struggles to cooperate or complete group tasks.
Task Completion and Accuracy	Completes all assignments on time with high accuracy and attention to detail; work often exceeds expectations.	Completes most assignments with acceptable accuracy; minor errors or delays.	Completes some tasks; frequent errors or partial submissions.	Rarely completes assignments; quality and accuracy are consistently poor.
Language and Communication Skills	Communicates ideas clearly and fluently; uses accurate grammar and rich vocabulary.	Expresses ideas coherently with minor errors; vocabulary is adequate.	Communicates meaning with noticeable errors; limited vocabulary or structure.	Has difficulty expressing ideas; frequent grammatical mistakes hinder understanding.
Self-Motivation and Independence	Consistently demonstrates initiative, curiosity, and responsibility for own learning.	Usually motivated and independent; needs minimal guidance.	Motivation fluctuates; requires teacher reminders or support.	Lacks initiative; depends entirely on teacher direction.
Note: compiled by the author				

Week-by-week procedure.

Week 1. Diagnostics + 2–3 templates for each objective. Focus on the weakest area.

Week 2. Retrieval sessions (Mon/Wed/Fri, 8–12 minutes) + one timed mini-monologue.

Week 3. More productive input (typed response), collocation tasks; expand speaking practice and peer assessment.

Week 4. Mixed-format checkpoint (Quiz) + pair/group mini-projects; collect analytics.

Success metrics focused on gains in formal assessments: improvements in vocabulary and grammar test scores (Pre–Post–Retention) and increases of at least +3 points (out of 30) on the speaking rubric over the four-week instructional period. Weekly classroom participation and engagement were also recorded using the rubric presented in Table 1.

Results and their discussion

Beyond median gains and threshold counts, we formally tested the differences between groups. Independent-samples t-tests showed that Post scores in grammar, vocabulary, and speaking were significantly higher in the Wordwall group than in the Control group (all $p < 0.05$). The effect sizes were in the medium-to-large range (Cohen's d values exceeding 0.6 for all three domains), with 95% confidence intervals that did not cross zero, indicating that the advantages of the Wordwall condition were both statistically reliable and practically meaningful.

The conducted experiment clearly demonstrated that integrating Wordwall micro-sessions into the learning process had a significant positive impact on students' progress in grammar, vocabulary, and speaking. Despite both groups following the same syllabus and spending the same amount of instructional time, the experimental group achieved notably better results across all stages of assessment. At the pre-experiment stage, the two groups did not differ significantly on any of the three measures: grammar, vocabulary, or speaking. Their Pre means and standard deviations were closely aligned, and independent-samples t-tests showed no statistically significant differences between the Wordwall and Control classes (all $p > 0.05$), which indicates that the subsequent Post and Retention contrasts can be attributed to the intervention rather than to initial imbalance. However, after four weeks of instruction, distinct differences became visible.

Quantitative Results

The proportion of students who demonstrated meaningful progress was considerably higher in the experimental group. In grammar, 19 out of 25 students in the Wordwall group (76%) reached the improvement threshold, compared to 10 out of 25 students (40%) in the control group. For vocabulary, 18 of 25 learners in the Wordwall group (72%) met the criterion, compared with 11 of 25 (44%) in the control group; for speaking, the corresponding figures were 16 of 25 (64%) versus 9 of 25 (36%). In other words, with identical lesson time and materials, between 7 and 9 additional students per class in the Wordwall condition crossed the predefined bar of meaningful progress across grammar, vocabulary, and speaking. Inter-rater reliability for the speaking scores was high (ICC = 0.86), which supports the robustness of the speaking results. As illustrated in Figure 1, the experimental group consistently showed higher percentages of students with meaningful progress in grammar, vocabulary, and speaking than the control group.

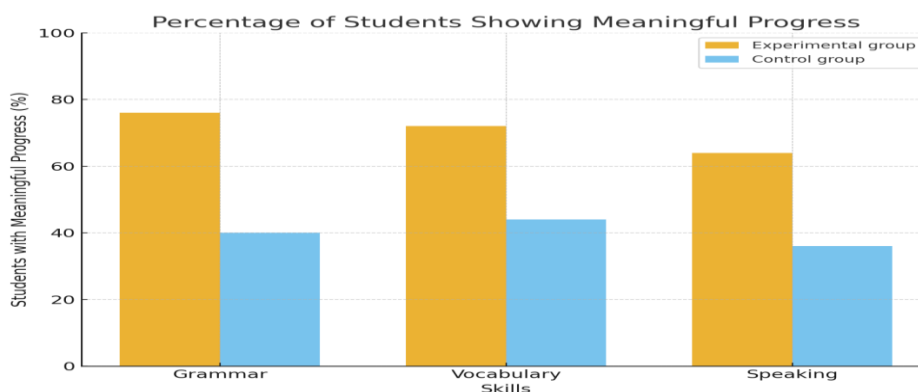


Figure 1 – Percentage of students showing meaningful progress in grammar, vocabulary, and speaking in the Wordwall ($n = 25$) and Control ($n = 25$) groups. Error bars represent standard errors

Note: compiled by the author

The median Post–Pre gains clearly demonstrate the experimental group's advantage. Students who participated in Wordwall-based lessons showed stronger, more consistent improvement across all skill areas.

Their grammar scores increased by an average of 14 points out of 100, compared to 9 points in the control group, indicating a more confident use of grammatical structures. In vocabulary, the experimental group improved by 9 points out of 40, while the control group achieved only 6, reflecting a broader and more stable lexical repertoire. As for speaking, the difference was also evident: +5.0 points versus +3.5, meaning that learners in the Wordwall group developed greater fluency, accuracy, and confidence in oral performance. These results indicate that the average learner in the experimental group made greater progress across all assessed skills.

Two weeks later, at the retention stage, the Wordwall group showed more stable results and less decline in performance. Vocabulary scores decreased by only –0.9 compared to –1.7 in the control group; grammar — by –1.1 compared to –2.6; and speaking — by –0.3 compared to –1.0. This suggests that integrating interactive tools contributes to longer-lasting retention of knowledge and skills.

In addition to test scores, classroom participation and engagement were monitored using the rubric presented in Table 1. Observational notes indicated that students in the Wordwall group more frequently displayed “Good” and “Excellent” levels of engagement than their peers in the Control group. In contrast, low engagement (“Needs improvement”) was observed less often. Although these ratings were analysed descriptively rather than through formal statistical testing, they support the quantitative findings and suggest that regular Wordwall micro-sessions were associated with higher classroom engagement.

The obtained data confirm the study's hypothesis: short, interactive Wordwall micro sessions lead to higher learning outcomes and better retention than traditional methods. The better performance of the experimental group can be attributed to mechanisms such as retrieval practice, spaced repetition, and elaborated feedback, which are inherently built into the Wordwall platform. Regular short gamified tasks three times a week enabled systematic review, instant feedback, and timely error correction, thereby enhancing achievement and strengthening learners' motivation and confidence in using the language.

Pedagogical Implications

These findings suggest that integrating brief Wordwall activities into existing lessons can increase instructional efficiency without requiring additional contact hours. Rather than replacing traditional teaching, digital tools serve as a targeted complement that supports more dynamic, student-centered lessons and helps students make more sustainable progress in core language skills.

Limitations, Validity Threats, and Quality Assurance

This classroom trial was quasi experimental, so full baseline equivalence between groups cannot be guaranteed. Teacher effects, possible differences in task difficulty, novelty effects of the platform, and rater variability in speaking scores remain potential threats to validity, although standardized lesson time, parallel test forms, delayed retention checks, and double rating were used to mitigate them. Missing data at some timepoints may also have influenced comparisons between groups.

Conclusion

In practical terms, Wordwall functions as an operational container for high-evidence mechanisms—retrieval practice, spacing, and elaborated feedback—delivered in brief, low-stakes cycles that are easy to sustain week after week. Under a deliberately simple analytic lens, three signals converge across vocabulary, grammar, and speaking: more learners cross a pre-declared improvement bar, the typical learner's gain (median) is larger, and more students stay “green” at delay. The pairwise “who wins more often” check, matched by pre-level, adds an intuitively persuasive layer without statistical jargon. Because the method relies on thresholds, medians, retention categories, pairwise tallies, and dot-plot visuals, any teacher can run it with a spreadsheet

and a one-page tracker, turning progress monitoring into a routine habit rather than a specialized analysis. The implication is straightforward: keep the micro-dose tight, keep the cadence steady, embed explanations in feedback, and always end with a small production piece tied to CAF. Replicating the same routine across two or three consecutive modules will show whether the advantage stabilizes—at which point the “who crossed the bar, who held the gain, and what we recycle next” conversation becomes a durable feature of the course rather than an isolated experiment.

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WORDWALL СЕРВИСІН БІЛІМ БЕРУ ПРОЦЕСІНЕ ЕНГІЗУ: ОҚУШЫЛАРДЫҢ ГРАММАТИКА, ЛЕКСИКА ЖӘНЕ АУЫЗША СӨЙЛЕУ ДАҒДЫЛАРЫН ЖЕТІЛДІРУ ЖОЛДАРЫ

Андатпа

Цифрлық платформалар Қазақстанның Орал қаласындағы №7 мектептің оқу тәжірибесіне берік енгенімен, олардың жасөспірімдердің тілдік жетістіктеріне әсерін салыстырмалы тұрғыдан дәлелдейтін қатаң эмпирикалық деректер әлі де жеткіліксіз. Зерттеудің мақсаты – қысқа интерактивті микросессиялар форматында Wordwall цифрлық платформасын пайдаланудың грамматикалық және лексикалық дағдыларды қалыптастыруға, сондай-ақ сегізінші сынып оқушыларының ауызша сөйлеуін дамытуға әсерін эксперименттік бағалау, содан кейін эксперименттік және бақылау топтарының нәтижелерін салыстырмалы талдау негізінде цифрлық құралдарды білім беру процесіне интеграциялау тиімділігін негіздеу болып табылады. Бұл мақалада сегізінші сынып оқушыларының грамматиканы, лексиканы меңгеруі және ауызша сөйлеу дағдыларын дамытуына қысқа интерактивті Wordwall микросессияларының әсерін зерделеген квазиэксперименттік зерттеу ұсынылады. Зерттеуге 50 оқушы (эксперименттік топ, ЭТ = 25; бақылау тобы, БТ = 25) алты апта бойы қатысты: төрт апта оқыту жүргізіліп, одан кейін екі аптадан соң кешіктірілген ретенциялық тексеру өткізілді; екі топ та бір оқу бағдарламасын меңгерді, алайда эксперименттік топ Wordwall тапсырмаларын жүйелі түрде аптасына 3 рет 8–12 минуттан орындады. Бағалау алдын ала, қорытынды және кейінге қалдырылған (ретенциялық) тесттерді қамтыды; ауызша сөйлеу САФ рубрикасы (күрделілік, дәлдік, еркіндік) бойынша бағаланды. Post–Pre медиандық өсімдер бойынша эксперименттік топ бақылау тобынан жоғары нәтиже көрсетті: грамматикада өсім +14 балл (100 мүмкін балдан) қарсы +9; лексикада +9 (40-тан) қарсы +6; сөйлеуде +5,0 (30-дан) қарсы +3,5. Алдын ала айқындалған «маңызды прогресс» шегінен асқан оқушылардың үлесі де ЭТ-де жоғары болды (грамматика: 76% қарсы 40%; лексика: 72% қарсы 44%; сөйлеу: 64% қарсы 36%). Мақалада әсер ету тетіктері (ақпаратты еске түсіру практикасы, геймификация, ICAP), зерттеу шектеулері және Wordwall платформасын сабақтарға кіріктіру бойынша практикалық ұсыныстар талқыланады.

Негізгі сөздер: Wordwall, цифрлық педагогика, ақпаратты еске түсіру практикасы, геймификация, квазиэксперимент, оқу жетістіктері.

ИНТЕГРАЦИЯ СЕРВИСА WORDWALL В ОБРАЗОВАТЕЛЬНЫЙ ПРОЦЕСС: ПУТИ ПОВЫШЕНИЯ УРОВНЯ ВЛАДЕНИЯ ГРАММАТИКОЙ, ЛЕКСИКОЙ И УСТНОЙ РЕЧЬЮ УЧАЩИХСЯ

Аннотация

Цифровые платформы прочно вошли в учебную практику школы № 7 города Уральска, однако строгих сравнительных данных об их влиянии на языковые результаты подростков по-прежнему недостаточно. Цель исследования заключается в экспериментальной оценке влияния использования цифровой платформы Wordwall в формате кратких интерактивных микросессий на формирование грамматических и лексических навыков, а также развитие устной речи учащихся восьмых классов, с последующим обоснованием эффективности интеграции цифровых инструментов в образовательный процесс на основе сравнительного анализа результатов экспериментальной и контрольной групп. В статье представлен квазиэксперимент, в котором изучается влияние коротких интерактивных микросессий Wordwall на овладение грамматикой и лексикой, а также на развитие навыков устной речи у учащихся восьмых классов. В исследовании приняли участие 50 школьников (экспериментальная группа, ЭГ - 25; контрольная группа, КГ - 25) в течение шести недель: четыре недели проводилось обучение, после чего через две недели проводилось отсроченное ретенционное тестирование; обе группы работали по одной программе, однако экспериментальная группа систематически выполняла задания Wordwall 3 раза в неделю по 8–12 минут. Оценивание включало предварительные, итоговые и отсроченные (ретенционные) тесты; устная речь оценивалась по рубрике CAF (сложность, точность, беглость). По медианным показателям прироста Post–Pre экспериментальная группа превзошла контрольную: по грамматике прирост составил +14 баллов (из 100) против +9; по лексике +9 (из 40) против +6; по говорению +5,0 (из 30) против +3,5. Доля учащихся, преодолевших заранее заданный порог «существенного прогресса», также была выше в ЭГ (грамматика 76% против 40%; лексика 72% против 44%; устная речь 64% против 36%). В статье обсуждаются механизмы действия (практика извлечения, геймификация, ICAP), ограничения дизайна исследования и практические рекомендации по интеграции платформы Wordwall в учебные занятия.

Ключевые слова: Wordwall, цифровая педагогика, практика извлечения, геймификация, квазиэксперимент, учебные достижения.

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