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INTERACTIVITY AS A KEY ELEMENT IN DISTANCE ENGLISH LEARNING UNDER MARTIAL LAW: A CASE STUDY

ІНТЕРАКТИВНІСТЬ ЯК КЛЮЧОВИЙ ЕЛЕМЕНТ ДИСТАНЦІЙНОГО НАВЧАННЯ АНГЛІЙСЬКОЇ МОВИ В УМОВАХ ВОЄННОГО СТАНУ: ТЕМАТИЧНЕ ДОСЛІДЖЕННЯ

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ABSTRACT

Purpose. *This study investigates how interactive technologies affect motivation, vocabulary acquisition, and the development of communicative skills in distance English language learning under the conditions of martial law in Ukraine. The relevance of this work stems from the rapid evolution of digital tools, an evolution that is reshaping traditional teaching models and creating a need for fresh approaches to activating students' language performance in virtual settings, particularly when traditional classroom instruction is disrupted by war.*

Methodology. *A four-month study was carried out with 120 students at Admiral Makarov National University of Shipbuilding (NUS), whose English proficiency ranged from A2 to C1. A mixed-methods design was adopted. Quantitative data came from pre- and post-course surveys (using the*

Мета. *Це дослідження має на меті виявити вплив інтерактивних технологій на мотивацію, засвоєння лексики та розвиток комунікативних навичок у дистанційному навчанні англійської мови в умовах воєнного стану в Україні. Актуальність роботи зумовлена стрімким розвитком цифрових технологій, які трансформують традиційні моделі викладання та потребують нових підходів до активізації мовленнєвої діяльності студентів у віртуальному середовищі, особливо коли традиційне навчання порушене війною.*

Методологія. *Чотиримісячне дослідження охопило 120 студентів Національного університету кораблебудування імені адмірала Макарова (НУК) із рівнями володіння англійською мовою від A2 до C1. Застосовано змішаний дизайн: кількісні методи (до- та післякурсові опитування за*

LLMS and SALC scales) and from automatic activity logs in the learning management system. Qualitative data were gathered through semi-structured interviews with 30 students. Motivation scores, self-assessed language competence, interaction frequency, and vocabulary test results were compared between active and passive users of interactive tools.

Results. *A statistically significant increase was observed in motivation from 3.2 to 4.1 on a five-point scale ($p < 0.01$) and in self-assessed language competence, which rose from 2.8 to 3.9 ($p < 0.05$). Students who took an active part in synchronous sessions and asynchronous forums improved their vocabulary test scores by an average of 15% compared to their less active peers. The use of gamified tools such as Kahoot and Quizlet Live was associated with a 17% gain in vocabulary retention. At the same time, several challenges emerged, including technical difficulties reported by 27% of respondents, insufficient digital literacy (22%), and time zone coordination problems (18%). All of these problems were exacerbated by the ongoing war.*

Conclusions. *Interactivity is more than a technical add-on. It is an important pedagogical factor that encourages active learning and self-development, even in crisis conditions. Platforms that blend synchronous and asynchronous forms of interaction can significantly raise student engagement, improve vocabulary retention, and support the growth of oral communication skills. It is advisable to incorporate interactive methods into distance English courses while taking into account the technical, cultural, and individual characteristics of students. Further research should explore adaptive systems based on artificial intelligence and examine the long-term dynamics of learning outcomes.*

Keywords: *asynchronous learning, communicative skills development, interactive technologies, student motivation, synchronous interaction, Ukraine, vocabulary acquisition.*

шкалами LLMS та SALC, автоматичне логування активності в системі управління навчанням) та якісні методи (напівструктуровані інтерв'ю з 30 студентами). Порівнювалися показники мотивації, самооцінки мовної компетентності, частоти взаємодії та результатів лексичних тестів між активними та пасивними користувачами інтерактивних інструментів.

Результати. *Зафіксовано статистично значуще підвищення мотивації (з 3,2 до 4,1 бала за 5-бальною шкалою, $p < 0,01$) та самооцінки мовної компетентності (з 2,8 до 3,9, $p < 0,05$). Студенти, які активно брали участь у синхронних заняттях та асинхронних форумах, покращили результати лексичних тестів у середньому на 15% порівняно з менш активними одногрупниками. Використання гейміфікованих інструментів (Kahoot, Quizlet Live) сприяло підвищенню результатів засвоєння лексики на 17%. Водночас виникло кілька проблем, зокрема технічні труднощі, про які повідомили 27% респондентів, недостатня цифрова грамотність (22%) та проблеми з координацією часових поясів (18%). Усі ці проблеми були загострені війною.*

Висновки. *Інтерактивність є не просто технічним інструментом, але й важливим педагогічним чинником, що стимулює активне навчання та саморозвиток навіть у кризових умовах. Використання інтерактивних платформ, які поєднують синхронні та асинхронні форми взаємодії, значно підвищує зацікавленість студентів, покращує ефективність засвоєння словникового запасу та сприяє формуванню навичок усного мовлення. Рекомендовано впроваджувати інтерактивні методи в дистанційні курси англійської мови з урахуванням технічних, культурних та індивідуальних особливостей студентів. Подальші дослідження потребують вивчення адаптивних систем на основі штучного інтелекту та довготривалої динаміки навчальних результатів.*

Ключові слова: *асинхронне навчання, розвиток комунікативних навичок, інтерактивні технології, мотивація студентів, синхронна взаємодія, Україна, засвоєння лексики.*

INTRODUCTION

The rapid progress of digital technologies, together with a growing demand for learning environments that can adapt to individual needs, is changing higher education. And foreign language teaching is no exception. One area where interactivity proves particularly useful is in strengthening communicative competence and vocabulary acquisition among students from non-linguistic disciplines: engineering, psychology,

journalism, and finance. Within the Common European Framework of Reference for Languages (CEFR), communicative competence is regarded as central to language proficiency, and interactivity is seen as an essential component in developing that competence. Nevertheless, students outside philological faculties often struggle to master professional vocabulary and oral communication skills. The reasons are familiar: time constraints, limited exposure, and low intrinsic motivation.

Educational systems are progressively adopting digitalisation and interactive learning tools. Interactivity opens up numerous possibilities for transforming language acquisition (Kumar & Vairavan, 2024; Baby, 2025). It enables personalised instruction, instant feedback, automated assessment, and content that can be tailored to student needs and professional contexts (Pais Marden & Herrington, 2022; Xu et al., 2020; Genç & Kırmızıbayrak, 2024). Tools such as video conferencing platforms, discussion forums, gamified applications, and interactive quizzes can support vocabulary learning and speaking practice across a wide range of disciplines from engineering and social sciences to the humanities (Hashmi, 2025; Simon et al., 2025). These challenges have been intensified by the ongoing full-scale war in Ukraine, which has disrupted traditional learning environments and made the need for flexible, technology-enhanced approaches to language education more urgent than ever (Herman et al., 2024). In this context, the role of university teachers has also transformed, requiring a new pedagogical culture to ensure a safe and effective educational process (Tverdokhliebova & Yevtushenko, 2023).

Many Ukrainian universities have adopted hybrid learning models that combine face-to-face instruction with online participation. Admiral Makarov National University of Shipbuilding (NUS) in Mykolaiv has developed a flexible approach. This city experienced active hostilities and remains under constant threat. While on-campus teaching continues for those who can attend in person, students who are abroad or in temporarily occupied territories can join classes synchronously online via video conferencing platforms. This model allows displaced students to remain connected to their academic community, to participate in real-time interaction with peers and instructors, and to access interactive tools such as discussion forums and gamified quizzes. In addition, students facing unstable internet access or time-zone differences may arrange individualised study schedules. This ensures that interactivity, the key focus of this study, remains accessible even under challenging conditions.

Recent scholarship has highlighted the integration of interactive technologies into both English for Specific Purposes (ESP) and general English instruction (Wei, 2022). Systematic reviews (Genç & Kırmızıbayrak, 2024) indicate a clear shift away from traditional methods towards interactive systems that can address diverse student needs (Shadiev & Yang, 2020). At the same time, research also notes that while interactivity supports individualised learning, it raises concerns regarding technical accessibility, digital literacy, and the quality of feedback provided (Grant, 2022).

A review of the recent literature reveals several important findings about the role of interactivity in distance language learning. Nguyen and Nguyen (2023) concluded that self-regulated learning in an online environment depends directly on the level of course interactivity. The more opportunities a student has to interact, the greater their capacity for self-organisation and independent work. This suggests that interactivity not only facilitates language acquisition but also helps develop metacognitive skills. Wu and Nian (2021) pointed out that digital literacy can be a critical barrier in interactive distance ESL teaching. Without prior training in the use of interactive tools, the effectiveness of

interaction drops noticeably especially among older adult students. In an experimental study, Kumar and Vairavan (2024) demonstrated that gamification directly affects both motivation and retention in language learning. They reported that gamified applications increased regular attendance by 40% compared to traditional online methods.

Hashmi (2025) observed that the digital influence on students' identity in multilingual educational contexts creates both opportunities and challenges. Interactive platforms, he argued, need to take students' cultural characteristics into account to achieve maximum effectiveness. Grant (2022) found that willingness to communicate (WTC) in online EFL classrooms increases significantly with synchronous video conferencing compared to asynchronous formats. Regular video interaction, he noted, reduces language anxiety. Wei (2022) indicated that technology-based education correlates closely with increased intrinsic motivation for learning English as a foreign language. Interactive technologies, in his view, act as a catalyst for autonomous learning. Shadiev and Yang (2020) concluded that the most effective approaches combine both synchronous and asynchronous forms of interaction, and that regular feedback is critically important. Genç and Kırmızıbayrak (2024) showed that Web 2.0 interactive platforms can significantly improve communicative skills provided they are implemented methodologically correctly.

The full-scale Russian invasion that began on 24 February 2022 fundamentally altered the educational landscape in Ukraine. According to the Ministry of Education and Science of Ukraine, more than 2,000 educational institutions were damaged or destroyed during the first year of the war. Millions of students and teachers were forced to relocate internally or flee abroad. In response, Ukrainian universities rapidly transitioned to fully distance or blended learning formats, often with limited preparation time.

At NUS, located in Mykolaiv, a regional capital less than 100 kilometres from the front line, the challenges have been particularly acute. The city experienced repeated missile and drone attacks, with damage to university buildings and prolonged interruptions to electricity and internet connectivity. Students and faculty have had to adapt to learning under air raid alerts, often continuing classes in bomb shelters or relocating to safer regions.

Herman et al. (2024) notes that distance education in Ukraine has evolved from a supplementary tool to a primary mode of instruction. However, the adoption of interactive methods remains uneven across institutions due to disparities in infrastructure, teacher training, and student digital literacy. This study, conducted at NUS between September and December 2024, captures a period when martial law was still in effect, and the university community had developed coping mechanisms but continued to face significant disruptions. The findings therefore reflect not ideal conditions but the reality of crisis-driven digital transformation, which arguably makes them more valuable for institutions facing similar challenges worldwide.

On a practical level, students in non-linguistic fields need to acquire discipline-specific vocabulary and communication skills to function effectively in professional settings. In the present case, engineering students require terminology for technical documentation and project discussions; finance students need to understand terms such as "asset-backed securities" and "risk assessment"; psychology students need language that allows them to describe emotions and cognitive processes; and journalism students need fluency in media discourse and ethical communication (Young, 2015).

Integrating interactivity into distance language teaching is not without its challenges.

Unequal access to technology, variability in teachers' digital skills, difficulties in coordinating synchronous activities across time zones, and concerns about student engagement and assessment integrity, all of these remain real problems (Shadiev & Yang, 2020). In Ukraine, despite increased digitalisation driven by the pandemic and the war, the adoption of interactive methods remains uneven across institutions (Herman et al., 2024). At NUS, specific challenges have included: *(a)* students displaced to different time zones within and outside Ukraine, making synchronous scheduling difficult; *(b)* frequent power outages limiting access to devices and the internet; *(c)* psychological stress and fatigue reducing sustained engagement; and *(d)* heterogeneous digital literacy levels among both students and faculty.

At the same time, national reforms are increasingly emphasising the importance of ICT integration into non-linguistic curricula. Pilot EFL courses in technical and economic universities are testing interactive instruction, and early results are promising in terms of vocabulary development and communicative competence. Collaboration with psychology and engineering faculties has demonstrated that interactivity has the potential to support motivation, metacognitive skills, and professional identity.

Despite the abundance of studies, several gaps remain. First, most research has focused on either synchronous or asynchronous interactivity in isolation, rather than examining how the two complement each other. Second, there is limited empirical evidence on the optimal balance between different types of interaction for students at different proficiency levels. Third, few studies have provided practical, actionable recommendations for educators who are designing distance courses. Fourth, cultural and contextual factors that influence the effectiveness of interactive strategies have received insufficient attention. Fifth, and most critically for this study, there is very little research on interactive distance language learning conducted under active wartime conditions, where infrastructure is unreliable, participants may be displaced, and psychological stress is high.

The **purpose** of this study, therefore, is to examine how interactive technologies can enhance motivation, vocabulary acquisition, and the development of communicative skills in distance English language learning under martial law, using the specific case of NUS in Mykolaiv, Ukraine. It explores the interactive tools used in EFL instruction, identifies pedagogical strategies, compares outcomes across different proficiency levels (from A2 to C1), and outlines both the benefits and the limitations of interactive vocabulary learning in a crisis context. The research offers evidence-based recommendations for educators, curriculum designers, and policy-makers working in disrupted environments. By analysing diverse student profiles and instructional models, the study contributes a framework for integrating interactivity into EFL teaching in both Ukrainian and international educational contexts that may face similar emergencies.

METHODOLOGY

Design

A mixed-methods design was chosen. Why? Because the study needed both numbers and narratives. Quantitative data would show changes in motivation and language scores. Qualitative data would explain why those changes happened – or didn't happen (Lamb & Arisandy, 2019). This design is particularly appropriate for research conducted under unstable conditions, as it allows triangulation of findings and captures contextual factors that pure quantitative methods would miss.

Participants

The sample included 120 adults. Their ages ranged from 18 to 45 (mean = 28.3). Ninety-four were men, twenty-six were women. All were first- or second-year bachelor's students or first-year master's students in the field of knowledge "F Information Technologies" and were taught English by the author as part of their regular foreign language course. Their proficiency levels, measured by the CEFR, varied from A2 to C1. This focus on a single disciplinary field allowed the study to examine interactivity effects within a homogeneous professional vocabulary context.

At the time of the study (September-December 2024), all participants were residing in Ukraine, though 23 (19.2%) were internally displaced from the temporarily occupied territories of Kherson, Donetsk, or Luhansk regions. An additional 12 participants (10.0%) had returned to Mykolaiv after a period of displacement earlier in the war. This context is essential for interpreting both the challenges and the resilience observed in the data.

Who could take part? We had four inclusion criteria:

- age 18 or older;
- active enrolment as a first- or second-year bachelor's student or first year master's student in the field "F Information Technologies" at NUS, with the author as their English instructor;
- stable internet and a computer capable of video conferencing;
- no previous experience with interactive distance EFL courses.

We also had exclusion criteria:

- incomplete pre- or post-course questionnaires;
- missing more than 30% of synchronous sessions;
- withdrawal of informed consent.

Group Assignment

Stratified random sampling was used. This ensured fair representation across proficiency levels (A2, B1, B2, C1), gender, and age groups. A computer-generated sequence assigned participants to one of two groups.

The control group (n = 40) received traditional online instruction. That meant recorded lectures and text-based assignments – no structured interactive components.

The experimental group (n = 80) took courses with integrated interactive tools: video conferencing, discussion forums, and gamified quizzes.

Everyone signed a written informed consent form. We promised confidentiality, anonymity, and the right to withdraw at any time without penalty.

Procedure

The study ran for four months – one academic semester. Data collection happened in three stages.

Stage 1: Literature review. We analysed publications from 2001 to 2025, searching Scopus, Web of Science, and Google Scholar. The focus was on peer-reviewed articles about interactivity, student engagement, and English acquisition in distance or blended settings.

Stage 2: Quantitative data. Before and after the course, participants completed two validated questionnaires: the Language Learning Motivation Scale (LLMS) and the Self-Assessment of Language Competence (SALC). Motivation was measured on a 5-point Likert scale. Participants also rated their own speaking and writing skills. Both instruments were translated into Ukrainian using a forward-backward translation procedure and pilot-tested on 15 students not in the main sample (Cronbach's $\alpha = 0.87$ for LLMS, 0.84 for SALC).

The learning management system automatically logged interaction data – frequency, duration, and type of participation. This included synchronous activities (Zoom, live chat) and asynchronous ones (Moodle forums, Kahoot!, Quizlet Live). Vocabulary was tested weekly with 10-item quizzes tied to course content. All quizzes were automatically scored, and only students who completed at least 12 of 16 weekly quizzes were included in the final analysis (n=112 out of 120).

Stage 3: Qualitative data. We conducted semi-structured interviews with 30 students: 15 from the experimental group and 15 from the control group. Each interview lasted 20-30 minutes. With permission, we recorded and transcribed them verbatim. The goal was to understand subjective experiences: what helped, what didn't, what surprised them. Interviews were conducted in Ukrainian, according to participant preference, and translated into English for analysis by a professional translator.

Statistical analysis

We analysed quantitative data using descriptive statistics (means, standard deviations, frequencies) and inferential statistics.

Paired-sample t-tests compared pre- and post-course motivation and self-assessed proficiency within each group. Independent-sample t-tests compared changes between groups. Significance was set at $\alpha = 0.05$. Effect sizes were calculated with Cohen's d.

For vocabulary scores, we used repeated-measures ANOVA to examine within-subject effects over the four months. Pearson correlation coefficients checked whether more interaction (from LMS logs) meant larger vocabulary gains. Additionally, a one-way ANOVA was conducted to compare vocabulary gains across proficiency levels (A2, B1, B2, C1), revealing no significant interaction between proficiency and treatment effect ($F(3,108)=1.42$, $p=0.24$), suggesting that interactivity benefits students across all levels.

All analyses were performed using SPSS 26.0 and JASP 0.16.4.

Qualitative Analysis

Interview transcripts were analysed using thematic content analysis. We followed Braun and Clarke's (2006) six-phase framework. Two researchers coded the transcripts independently. Inter-coder reliability was 0.84 (Cohen's kappa). Disagreements were resolved through discussion.

Ethical Considerations

The study followed the Helsinki Declaration (2008 revision). Ethical approval came from the Institutional Review Board of Admiral Makarov National University of Shipbuilding (Protocol No. 12/2024, 15 September 2024). All participants gave informed consent before enrolment. Given the wartime context, special attention was paid to ensuring that participation did not add to psychological distress. Participants were reminded that they could skip any question or withdraw without providing a reason.

RESULTS

Quantitative Findings

The numbers showed a clear increase. Motivation scores rose from 3.2 before the course to 4.1 after it (5-point scale, $p < 0.01$). Self-assessed language competence also went up – from 2.8 to 3.9 ($p < 0.05$). These results match earlier work on the motivational effects of interactivity in online learning (Lin et al., 2016). Notably, the effect size for motivation (Cohen's $d = 0.94$) was large, indicating that the observed difference is not just statistically significant but educationally meaningful.

Table 1
Student Motivation and Self-Assessed Proficiency (Pre- and Post-Course)

Metric	Pre-course	Post-course	Change	p-value
Motivation Score (1–5 scale)	3.2	4.1	+0.9	< 0.01
Self-assessed Speaking	2.8	3.9	+1.1	< 0.05
Self-assessed Writing	3.0	4.0	+1.0	< 0.05

Source: developed by the author.

Engagement data told a similar story. Students who actively joined synchronous sessions and posted regularly on asynchronous forums made bigger gains. Frequent forum contributors improved their vocabulary test scores by 15% on average compared to less active peers (Simon et al., 2025; Krish et al., 2011).

Figure 1
Vocabulary Test Score Improvement by Engagement Level

Source: developed by the author.

What does this mean? Regular interaction matters – not just for motivation but also for retention and long-term skill building. In the wartime context, this finding is particularly significant because it suggests that even when external conditions are unstable, structured interactive activities can maintain and even enhance learning outcomes.

Comparison Between Experimental and Control Groups

To isolate the effect of interactivity, we compared the experimental group (n=80, interactive tools) with the control group (n=40, traditional online instruction). The experimental group showed significantly larger gains in motivation ($\Delta = +1.0$ vs. $\Delta = +0.5$ in control, $t(118)=3.42$, $p<0.01$) and vocabulary test scores ($\Delta = +14.8\%$ vs. $\Delta = +6.2\%$, $t(118)=4.15$, $p<0.001$). Self-assessed speaking competence improved by 1.3 points in the experimental group compared to 0.6 points in the control group ($t(118)=2.98$, $p<0.01$). These differences confirm that it is interactivity rather than online delivery that drives

the observed improvements.

Qualitative Findings

The interviews added detail. Participants valued real-time communication with instructors and peers. It helped reduce the isolation that often comes with distance learning (Shadiev & Yang, 2020; Wei, 2022). Many students said interactive quizzes and gamified activities were especially motivating. These tools let them test their progress instantly. Assessments became learning opportunities. Confidence grew.

One participant from the experimental group (male, 22, IT) stated:

> *When the air raid siren goes off, I can't focus on a recorded lecture. But a live Kahoot quiz keeps my attention. It's competitive, it's fast, and I forget about the war for 15 minutes* (participant interview).

Another (male, 35, displaced from Kherson) noted:

> *The discussion forums helped me feel connected. I'm in a rented room in Lviv, my classmates are in Mykolaiv, Odesa, even Poland. But we share vocabulary tips. We correct each other's sentences. It's not perfect, but it's community* (participant interview).

Conversely, a control group participant (female, 41) expressed frustration:

> *We just watched videos and answered text questions. No one checked if I understood. No one asked my opinion. After three weeks, I stopped trying* (participant interview).

These contrasting experiences underscore the pedagogical value of interactivity beyond mere content delivery.

Challenges

Not everything went smoothly. Technical problems like poor connections, platform glitches sometimes got in the way. Students with weaker digital literacy skills reported more frustration and lower engagement.

Table 2

Reported Challenges by Participants

Challenge	% of Respondents
Technical connectivity issues	27%
Low digital literacy	22%
Time zone coordination	18%
Lack of peer response	15%
Overwhelming course load	10%

Source: developed by the author.

Notably, technical connectivity issues (27%) were significantly higher than in pre-war studies conducted at the same institution (estimated at 12-15%), reflecting the impact of damaged infrastructure and power grid instability. Several participants reported that they had to complete quizzes using mobile hotspots or during brief windows when electricity was available.

One interesting pattern: although women constituted only 22% of the sample (n=26), they were disproportionately more likely to mention time management difficulties in asynchronous environments (73% of female participants vs. 41% of male participants). Male students more often said they lost interest in forum discussions (54% of male participants vs. 31% of female participants). This suggests interactive tools may need tailoring for different groups (Nykyporets, 2022), and that gender differences persist even in male-dominated IT cohorts. Additionally, displaced participants (n=23) reported higher levels of all challenges compared to non-displaced peers, particularly time zone coordination (35% vs. 14%, χ^2=5.82, p<0.05) and technical issues (39% vs. 24%, p=0.08, not significant but trending).

Gamification Effects

Gamified tools such as Kahoot, Quizizz, Quizlet Live had a clear impact. Students who used them scored 17% higher on vocabulary quizzes than those who stuck with conventional exercises. What made the difference? Instant feedback and competition. Both kept interest alive and encouraged repetition (Young, 2015).

Figure 2

Vocabulary Quiz Scores: Gamified vs. Non-Gamified Users

Source: developed by the author.

Further analysis revealed that the gamification effect was strongest among lower-proficiency students (A2-B1), who improved by 22% compared to 12% among higher-proficiency students (B2-C1). This suggests that gamified tools may be particularly valuable for bridging gaps when students have uneven prior preparation. This scenario is common in wartime education.

Feedback and Personalisation

Timely, constructive feedback mattered a lot. When instructors responded within 24 hours, motivation scores rose by 0.8 points on average. With delays of more than 48 hours, the effect was smaller (Teo et al., 2018). In the wartime context, however, timely feedback was not always possible due to power outages and air alerts. The experimental group used automated feedback from gamified tools as a partial substitute, which participants rated as “helpful but not as good as teacher feedback” (mean 3.7/5 vs. 4.3/5 for human feedback).

Customised tasks also helped. Students who got content tailored to their interests and levels showed more persistence. About 76% of them finished the course. In non-personalised tracks, only 58% did. This backs up what Genç and Kırmızıbayrak (2024) argued: we need more adaptive, personalised learning environments.

Simulation and Emotional Resilience

Interactivity also supported language immersion through simulations. Virtual role-plays, video conversations, and collaborative writing mimicked real-world communication. Students felt better prepared for actual conversations in English after such activities,

especially simulated interviews and debates (Chametzky, 2021).

Emotionally, those who regularly joined group discussions reported less anxiety and more enjoyment. That's important because language anxiety is known to hold students back, especially in speaking. Lin et al. (2016) emphasised social presence and emotional support in digital classrooms. Our findings reinforce that. In post-course interviews, 73% of experimental group participants agreed or strongly agreed that interactive sessions "helped me feel less alone during the war," compared to only 41% of control group participants.

Limitations of the Study

Several limitations should be acknowledged. First, the study lasted only four months (one academic semester). While this was sufficient to observe short-term gains in motivation and vocabulary, long-term retention and transfer of skills remain unexamined. Second, the sample (n=120) was relatively small and drawn from a single university, limiting generalisability to other Ukrainian institutions or international contexts. Third, self-assessed proficiency measures, while validated, may be subject to response bias (e.g., social desirability, overconfidence). Fourth, the study did not include objective pre- and post-course speaking assessments (e.g., recorded oral interviews rated by blind evaluators), which would have strengthened claims about communicative competence development.

Fifth, the wartime conditions, while central to the study's relevance, also introduced uncontrolled variables such as power outages, displacement, and psychological distress. These factors may have affected outcomes in ways that cannot be fully isolated. More specifically, the war context had a measurable effect on self-assessment and engagement. Many participants reported that air raids and unstable internet connections made it difficult to follow a regular learning schedule, which lowered their engagement metrics (e.g., missed synchronous sessions, late submissions).

In addition, self-assessed language competence appeared to be influenced by psychological stress rather than by actual language gains alone. Several interviewees rated their own speaking and writing lower than their quiz results would suggest, attributing this to war-related fatigue and anxiety. Thus, the war context may have suppressed both self-reported confidence and consistent participation, independently of the interactive tools used.

Sixth, the sample was predominantly male (78%) and limited to students in information technology disciplines. This gender and disciplinary imbalance may affect the generalisability of findings to female-dominated or humanities-based cohorts. Future research should include more balanced samples across genders and fields of study. Finally, the control group (traditional online instruction) was smaller than the experimental group (40 vs. 80), which may have reduced statistical power for between-group comparisons. Future studies should aim for balanced groups and include longer follow-up periods.

Peer Tutoring

Peer tutors or more experienced students made a difference too. In classes where peer tutoring was encouraged, writing scores were 10% higher on average. Also, 68% of students in peer-tutored environments rated their experience as "very satisfactory" – compared to 49% in standard formats.

DISCUSSION

Overall Implications

The key takeaway is that interactivity isn't a luxury in online English education. It's a necessity (Lin et al., 2016). It promotes autonomy, reduces isolation, encourages repetition, and enables contextualised practice. The result is more dynamic, effective, and inclusive learning environments. Under martial law, these benefits are amplified: interactivity provides structure, social connection, and psychological relief in addition to language gains.

However, these benefits only appear when infrastructure, teacher training, and student support are in place. Institutions need to invest not just in tools but also in teaching strategies and capacity building. Recent research confirms that effective teaching methods, particularly those tailored for large student groups and integrating digital tools, are critical for success in modern university settings (Holubnycha et al., 2025). Courses must be designed with clear interactivity goals. Educators need skills to manage both technology and engagement. In the Ukrainian context, this also means preparing for disruptions: having offline-ready materials, using low-bandwidth alternatives (e.g., text-based forums instead of video), and building flexibility into assessment schedules.

Only then can distance English learning realise the full potential of interactivity. Tailored approaches that consider cultural backgrounds, technological access, and pedagogical frameworks are strongly recommended.

Most earlier studies examined interactivity in stable, peacetime conditions. They focused on general motivation, vocabulary retention, or engagement without the added pressure of a full-scale war. This study, by contrast, was conducted in a real-world wartime setting where power cuts, air raids, and displacement were not hypothetical risks but daily realities. These conditions affected not only access to technology but also learners' self-assessment and emotional state. Unlike previous work that treated external disruptions as controllable variables, this study shows that war-related stress can suppress self-reported confidence and engagement independently of the interactive tools used. Thus, the findings contribute new knowledge about how interactivity functions in extreme, non-standard educational contexts, specifically, where learners' basic sense of safety and stability cannot be taken for granted.

Comparisons with Other Studies

Our results look similar to what others have found. Grant (2022) reported a higher willingness to communicate among Japanese students who used interactive storytelling platforms. So interactivity seems to help across cultures – though local adaptation still matters. Culture shapes preferences. Students from collectivist societies (East Asia, for example) tended to favour synchronous, teacher-guided sessions. They valued authority and group harmony. Individualist students (from Northern Europe, say) preferred self-paced forums and peer collaboration. Anderson and Rivera-Vargas (2020) were right: digital pedagogy needs to be context-sensitive. In our Ukrainian sample, preferences were mixed but leaned towards synchronous interaction (61% preferred live sessions over forums), which may reflect both the cultural value placed on direct communication and the wartime need for real-time connection and emotional support.

What the Results Mean

Regular interaction matters, not just for motivation but also for retention and long-term

skill building. Deeper engagement leads to more meaningful language learning. In the wartime context, this finding is particularly significant because it suggests that even when external conditions are unstable, structured interactive activities can maintain and even enhance learning outcomes. The 15% advantage for actively engaged learners and the additional 17% boost from gamification are practically significant. This is equivalent to moving up one sublevel on the CEFR scale for many learners. The contrasting experiences from interviews underscore the pedagogical value of interactivity beyond mere content delivery. Learners value real-time interaction with peers and instructors because it reduces isolation. This is a real problem in distance education.

Practical Recommendations

Interactivity cannot be an afterthought. It must be built into course design from the start. That means combining technology (gamified apps, collaborative platforms) with pedagogy (dialogic teaching, peer feedback). Teacher training is equally critical. One session is not enough. Ongoing support is required. In Ukrainian universities, this implies embedding digital pedagogy into faculty development programmes and creating peer-support networks for instructors facing similar wartime challenges. The Ukrainian case suggests a hybrid model may work best under crisis conditions. This model is primarily synchronous for community building and includes asynchronous options for flexibility. When rapid teacher response is impossible, for example during power outages, automated feedback from gamified tools can serve as a stopgap. However, it is not a full replacement.

Future Research

Future research should explore several directions. Adaptive AI systems could personalise interaction based on individual learner profiles. Immersive technologies like VR and AR offer new possibilities for experiential learning. Longitudinal studies are needed to see whether short-term gains last. Comparative research across regions and educational levels would help establish best practices. Specifically for wartime or crisis contexts, researchers should investigate the following: *(a)* low-bandwidth interactive strategies for learners with unreliable internet; *(b)* the role of peer support networks in maintaining motivation during displacement; and *(c)* the long-term psychological and linguistic effects of learning under chronic stress.

CONCLUSIONS

Three main findings stand out.

First, motivation and self-perceived proficiency went up. Not a little. Self-assessed speaking and writing improved from 2.8 to 3.9 and from 3.0 to 4.0 respectively. Both changes were statistically significant ($p < 0.01$ and $p < 0.05$). Learners simply do better when they are actively engaged through different formats. Second, vocabulary retention gets a real boost from high engagement techniques. Nguyen and Nguyen (2023) made a similar observation. Students who take part in online discussions or interactive quizzes remember more words. Why? Deeper processing and repetition. Interaction facilitates both. The result is stronger memorisation and better transfer of skills. Third, qualitative data from interviews tell the same story. Learners value real time interaction with peers and instructors. It reduces isolation. That feeling of being alone in distance education? It is a real problem. Interactive tools help. Gamified platforms like Kahoot and Quizlet Live do more than just improve vocabulary retention. They make learning enjoyable. Less stressful too.

But there are problems. We cannot ignore them. Culture also matters. Learners from collectivist backgrounds preferred synchronous, structured interaction. Those from individualist cultures liked asynchronous flexibility. No universal model exists. Course designers have to adapt. Demographics and cultural context should guide their choices. Feedback timing is another factor. When teachers responded within 24 hours, satisfaction went up significantly. So educators need more than technical skills. They need to be responsive. Supportive communication matters.

What does this mean for practice? Several things. Interactivity cannot be an afterthought. It must be built into course design from the start. That means combining technology (gamified apps, collaborative platforms) with pedagogy (dialogic teaching, peer feedback). Teacher training is equally critical. One session is not enough. Ongoing support is required. Future research should explore several directions. Adaptive AI systems could personalise interaction based on individual learner profiles. Immersive technologies like VR and AR offer new possibilities for experiential learning. Longitudinal studies are needed to see whether short term gains last. Comparative research across regions and educational levels would help establish best practices. The benefits outweigh the limitations. Thoughtful application can transform distance education into something dynamic, effective, and inclusive.

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CONFLICT OF INTEREST

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ARTIFICIAL INTELLIGENCE STATEMENT

Artificial intelligence tools were used solely for language editing and stylistic improvement.

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