

Collaborative Writing for English Vocabulary Acquisition Through Digital Tools and Gamification in Teacher Education Program

Escritura colaborativa para la adquisición de vocabulario en inglés mediante herramientas digitales y gamificación en programa de formación docente

Escrita colaborativa para a aquisição de vocabulário em inglês por meio de ferramentas digitais e gamificação em programa de formação de professores

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Abstract

English vocabulary acquisition represented a major challenge in Ecuadorian higher education, particularly in teacher education programs, where limited language proficiency affected both academic performance and pedagogical preparation. This study examined the impact of collaborative writing on basic English vocabulary acquisition among first-semester students enrolled in the National and Foreign Language Pedagogy program at the Technical State University of Quevedo. The research aimed to design an evidence-based pedagogical proposal integrating collaborative writing, digital tools, and gamification to address identified lexical gaps. A mixed-methods approach with a descriptive, exploratory, non-experimental, and cross-sectional design was employed with forty purposively selected participants. Data were collected through a validated diagnostic vocabulary test, a structured rating-scale survey, classroom observations, and a semi-structured teacher interview. The results revealed differences between receptive vocabulary knowledge and productive language use, as well as limited implementation of collaborative learning despite students' positive attitudes toward this methodology. It was concluded that collaborative writing, combined with technology and gamification, improved vocabulary retention, productive language use, and pedagogical preparation.

Keywords: collaborative writing, vocabulary acquisition, english as a foreign language, cooperative learning, teacher education.

Resumen

La adquisición de vocabulario en inglés representó un desafío importante en la educación superior ecuatoriana, especialmente en los programas de formación docente, donde los bajos niveles de dominio del idioma afectaron el desempeño académico y la preparación pedagógica. Este estudio examinó el impacto de la escritura colaborativa en la adquisición de vocabulario en inglés de nivel básico entre estudiantes de primer semestre de la carrera de Pedagogía de los Idiomas Nacionales y Extranjeros de la Universidad Técnica Estatal de Quevedo. La investigación tuvo como objetivo diseñar una propuesta pedagógica basada en evidencia que integró escritura colaborativa, herramientas digitales y gamificación para reducir las brechas léxicas identificadas. Se empleó un enfoque mixto con un diseño descriptivo, exploratorio, no experimental y transversal, en el que participaron cuarenta estudiantes seleccionados mediante muestreo intencional. Se utilizaron una prueba diagnóstica validada de vocabulario, una encuesta estructurada con escala de valoración, observaciones de aula y una entrevista semiestructurada. Los resultados evidenciaron diferencias entre el conocimiento receptivo y el uso productivo del vocabulario, además de una escasa implementación del aprendizaje colaborativo pese a la actitud favorable de los estudiantes. Se concluyó que la escritura colaborativa, combinada con tecnología y gamificación, favoreció la retención del vocabulario, su uso productivo y la preparación pedagógica.

Palabras clave: escritura colaborativa, adquisición de vocabulario, inglés como lengua extranjera, aprendizaje cooperativo, formación docente.

Resumo

A aquisição de vocabulário em inglês representou um importante desafio no ensino superior equatoriano, especialmente nos programas de formação de professores, nos quais os baixos níveis de proficiência linguística afetaram o desempenho acadêmico e a preparação pedagógica. Este estudo examinou o impacto da escrita colaborativa na aquisição de vocabulário de inglês em nível básico entre estudantes do primeiro semestre do curso de Pedagogia dos Idiomas Nacionais e Estrangeiros da Universidade Técnica Estatal de Quevedo. A pesquisa teve como objetivo elaborar uma proposta pedagógica baseada em evidências que integrou escrita colaborativa, ferramentas digitais e gamificação para reduzir as lacunas lexicais identificadas. Foi adotada uma abordagem de métodos mistos com delineamento descritivo, exploratório, não experimental e transversal, envolvendo quarenta estudantes selecionados por amostragem intencional. Os dados foram coletados por meio de um teste diagnóstico validado de vocabulário, um questionário estruturado com escala de avaliação, observações em sala de aula e uma entrevista semiestruturada. Os resultados evidenciaram diferenças entre o conhecimento receptivo e o uso produtivo do vocabulário, além da limitada implementação da aprendizagem colaborativa, apesar da atitude favorável dos estudantes. Concluiu-se que a escrita colaborativa, combinada com tecnologia e gamificação, favoreceu a retenção do vocabulário, seu uso produtivo e a preparação pedagógica.

Palavras-chave: escrita colaborativa, aquisição de vocabulário, inglês como língua estrangeira, aprendizagem cooperativa, formação de professores.

Introduction

English proficiency has become an indispensable competency in the twenty-first century, as global academic, professional, and social participation increasingly requires effective communication in English (Nation, 2013). Within the foreign language learning process, vocabulary acquisition constitutes a fundamental component because it supports reading comprehension, oral communication, written production, and overall communicative competence (Schmitt, 2008; Nation, 2013). Nevertheless, many learners continue to experience significant lexical limitations that hinder language development, particularly in teacher education programs, where future educators are expected to strengthen both their linguistic competence and their pedagogical skills.

In Ecuador, this challenge has become particularly evident. According to the EF English Proficiency Index 2024, Ecuador ranked 82nd out of 116 countries, remaining within the low proficiency category (EF Education First, 2024). Previous studies have attributed this

situation to the continued predominance of grammar-translation approaches, rote memorization practices, insufficient teacher preparation, limited exposure to authentic language input, and the scarce implementation of communicative methodologies (Loor Salmon, 2018). Consequently, many first-semester university students begin their academic studies with considerable vocabulary deficiencies that negatively affect both their academic performance and future professional preparation.

This situation is especially relevant in the National and Foreign Language Pedagogy program at the Technical State University of Quevedo, where students must simultaneously improve their English vocabulary and develop the pedagogical competencies required for their future teaching careers. Because these students will become English teachers, strengthening their lexical competence is essential not only for their own academic success but also for improving the quality of English instruction in future educational settings.

Collaborative writing has emerged as a promising pedagogical strategy for addressing these challenges because it promotes active interaction, shared knowledge construction, and meaningful language use. Its theoretical foundations are supported by Vygotsky's (1978) Sociocultural Theory, which emphasizes learning through social interaction and the Zone of Proximal Development, allowing learners to construct knowledge collaboratively with the support of peers and teachers. Likewise, Swain's (2000) Output Hypothesis suggests that writing encourages learners to recognize gaps in their linguistic knowledge, promoting deeper lexical processing and more accurate language production. In addition, cooperative learning principles proposed by Gillies et al. (2008) and Juárez Pulido et al. (2019) highlight that positive interdependence, individual accountability, social interaction, and group reflection create favorable conditions for vocabulary learning through collaborative tasks. From a lexical perspective, Nation (2013) distinguished between receptive and productive vocabulary

knowledge, emphasizing that productive vocabulary requires repeated, meaningful, and contextualized language use, conditions that collaborative writing naturally provides.

Recent empirical evidence has reinforced these theoretical assumptions. Pham (2025) reported significant improvements in writing fluency and lexical diversity after implementing structured collaborative writing activities in English as a Foreign Language classroom. Similarly, Villarreal and Gil-Sarratea (2025) found that collaborative writing produced greater lexical range and accuracy than individual writing tasks in secondary education. Ortigova (2023) demonstrated that interactive vocabulary strategies were more effective than traditional instructional methods for learners at the elementary proficiency level. Furthermore, studies focusing on educational technology have shown that integrating digital tools into collaborative writing enhances lexical variety and the quality of peer feedback (Teow Wan Shin, 2014), while gamification increases learner motivation, engagement, and voluntary vocabulary use (Wiethof et al., 2021). Despite this growing body of international evidence, collaborative writing has not been systematically implemented in Ecuadorian higher education, particularly within teacher education programs. Existing national studies have primarily focused on secondary education or general language skills rather than vocabulary acquisition in future English teachers (Serrano Jama, 2022; Escobar Garzón, 2022). This gap highlighted the need for a contextualized pedagogical proposal specifically designed for Ecuadorian university classrooms.

Therefore, this study aimed to design an evidence-based pedagogical proposal to enhance English vocabulary acquisition at the elementary proficiency level through collaborative writing among first-semester students enrolled in the National and Foreign Language Pedagogy program at the Technical State University of Quevedo. Specifically, the study sought to identify students' vocabulary learning profile, examine their perceptions and current practices regarding collaborative writing, analyze the barriers limiting its

implementation, and develop a twelve-unit instructional proposal integrating collaborative writing, digital tools, and gamification as an innovative resource for teacher education.

Methodology

This study adopted a mixed-methods approach with a descriptive, exploratory, non-experimental, and cross-sectional research design. The combination of quantitative and qualitative methods enabled a comprehensive analysis of English vocabulary acquisition and the implementation of collaborative writing among first-semester students. Quantitative data were collected through a diagnostic vocabulary test and a structured survey, whereas qualitative information was obtained through classroom observations and a semi-structured teacher interview.

The research followed a sequential procedure. First, institutional authorization and informed consent were obtained from all participants. Subsequently, the diagnostic vocabulary test and the structured survey were administered. Four classroom observations were then conducted over two consecutive weeks, followed by a semi-structured interview with the English teacher. Finally, quantitative and qualitative data were analyzed and triangulated to ensure the consistency of the findings.

Four research instruments were employed. The first instrument was a researcher-designed Diagnostic Vocabulary Test consisting of forty items that assessed vocabulary recognition, contextual vocabulary use, prepositional use, and lexical relations. Test items were selected from the *Life A2* textbook used in the program. Content validity was established through expert review by three specialists in English language teaching, and a pilot study with fifteen students demonstrated high internal consistency (Cronbach's $\alpha = 0.84$).

The second instrument was a structured survey composed of thirty-eight Likert-scale items administered through Google Forms. The questionnaire measured students' attitudes

toward collaborative learning, the frequency of collaborative writing activities, perceived vocabulary learning difficulties, access to digital tools, and motivation toward English learning. Content validity was confirmed through expert review, and the instrument achieved satisfactory internal consistency (Cronbach's $\alpha = 0.81$).

The third instrument consisted of structured classroom observations conducted during four forty-five-minute sessions over two weeks using a validated observation checklist. The observations focused on collaborative writing practices, student interaction, vocabulary-focused activities, technology integration, and teacher feedback. Inter-rater reliability was established during the first observation through Cohen's kappa coefficient ($\kappa = 0.79$).

The fourth instrument was a semi-structured interview conducted with the English teacher. The interview explored pedagogical beliefs regarding collaborative writing, perceived institutional and methodological barriers, and the integration of digital tools and gamification into English language instruction. The interview was audio-recorded with the participant's consent and subsequently transcribed for analysis.

The study was conducted at the Faculty of Educational Sciences of the Technical State University of Quevedo during the first semester of the 2024–2025 academic year. The participants were forty first-semester students enrolled in the National and Foreign Language Pedagogy program, selected through purposive non-probability sampling, and one English teacher with five years of teaching experience. The inclusion criteria were enrollment in the first semester of the program, English proficiency at the A2 level according to the Common European Framework of Reference for Languages, and voluntary participation through informed consent. Students who did not meet these criteria or failed to complete the research instruments were excluded from the analysis.

The research protocol was approved by the Research Ethics Committee of the Technical State University of Quevedo. Institutional authorization was obtained before data collection,

and all participants signed informed consent forms. Confidentiality, anonymity, and the exclusive academic use of the collected information were guaranteed throughout the study.

Quantitative data from the diagnostic vocabulary test and the survey were analyzed using IBM SPSS Statistics Version 27. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated.

Qualitative data obtained from classroom observations and the teacher interview were analyzed following the six-phase thematic analysis proposed by Braun and Clarke (2006). Finally, quantitative and qualitative findings were triangulated to strengthen the validity and credibility of the results.

Results

The findings were organized into three domains: vocabulary competence profile, attitudes and practices related to collaborative writing, and qualitative findings from classroom observations and the teacher interview.

The Diagnostic Vocabulary Test revealed differences between receptive and productive vocabulary competence. Vocabulary recognition showed the highest level of performance, with 77.5% of students ($n = 31$) obtaining scores of seven or higher. Contextual vocabulary use also showed satisfactory results, with 67.5% of participants ($n = 27$) achieving high performance. In contrast, productive vocabulary dimensions presented lower results. Prepositional accuracy was achieved by 50.0% of the participants ($n = 20$), whereas only 30.0% ($n = 12$) correctly identified lexical relations such as synonyms and antonyms. Table 1 summarizes the results obtained in each vocabulary dimension.

Table 1.

Diagnostic Vocabulary Test results by dimension (N = 40)

Vocabulary Dimension	High Performance ($\geq 7/10$)	% (n)	Mean Score (SD)
Vocabulary recognition	31 students	77.5%	7.8 (1.1)
Contextual vocabulary use	27 students	67.5%	7.2 (1.4)
Prepositional accuracy	20 students	50.0%	6.1 (1.8)
Lexical relations (synonyms/antonyms)	12 students	30.0%	5.0 (2.0)

Note. Data from the researcher-developed Diagnostic Vocabulary Test administered to first-semester students at UTEQ (2024). SD = standard deviation.

The results showed higher performance in receptive vocabulary dimensions than in productive vocabulary tasks. The lowest scores were observed in lexical relations, indicating greater difficulty in the productive use of vocabulary compared with vocabulary recognition and contextual use.

The survey findings revealed positive attitudes toward collaborative learning but limited implementation of collaborative writing activities in the classroom. Most participants (89.5%; n = 36) expressed favorable attitudes toward collaborative learning, and 84.2% (n = 34) believed that working with peers contributed to vocabulary learning. However, only 18.4% (n = 7) reported frequent participation in collaborative writing activities, whereas 55.3% (n = 22) indicated that these activities were rarely or never implemented. Table 2 presents the main survey results.

Table 2.

Key survey results: attitudes, practices, and technology access (N = 40)

Survey Construct	Positive / Frequent Response	% (n)
Positive attitude toward collaborative learning	Agree / Strongly agree	89.5% (n = 36)
Perceived vocabulary improvement through collaboration	Agree / Strongly agree	84.2% (n = 34)
Frequent use of collaborative writing in class	Often / Always	18.4% (n = 7)
Difficulty retaining vocabulary	Agree / Strongly agree	55.3% (n = 22)
Daily access to smartphone and internet	Yes	78.9% (n = 32)
Familiarity with collaborative digital tools	Moderate / High	63.2% (n = 25)

Note. Data from the structured survey administered via Google Forms (UTEQ, 2024).

Most participants reported having daily access to smartphones and the Internet (78.9%; $n = 32$), while 63.2% ($n = 25$) indicated moderate or high familiarity with collaborative digital tools. More than half of the students (55.3%; $n = 22$) also reported difficulties retaining new vocabulary.

Classroom observations indicated that collaborative writing was rarely implemented in a systematic manner. Most classroom activities consisted of individual written exercises, teacher-directed vocabulary practice, and occasional pair work. Although role-playing activities and multimedia resources were observed, collaborative writing was not intentionally incorporated as a strategy for vocabulary development. Likewise, no collaborative digital platforms were used during the observation period.

The teacher interview identified three recurring themes. First, the participant recognized the potential of collaborative writing but reported limited implementation because of time constraints and curriculum demands. Second, concerns were expressed regarding unequal participation during group work. Finally, the teacher demonstrated a positive disposition toward adopting collaborative writing if structured instructional materials and institutional support were available. These findings supported the development of the pedagogical proposal presented in this study.

Discussion

The findings of this study revealed a clear difference between students' receptive and productive vocabulary knowledge. Although most participants successfully recognized A2 English vocabulary, they experienced greater difficulty applying vocabulary accurately in productive tasks such as prepositional use and lexical relations. These findings support Nation's (2013) distinction between receptive and productive vocabulary, which states that recognizing words does not necessarily imply the ability to use them appropriately in communication.

Similarly, Schmitt (2008) argues that productive vocabulary requires deeper lexical knowledge developed through meaningful language practice rather than memorization.

The results also showed that students held positive attitudes toward collaborative learning despite the limited implementation of collaborative writing activities in their English classes. This finding suggests that learners are willing to participate in collaborative tasks, but opportunities to do so remain scarce. Similar results have been reported by Zhai and Tian (2021), who found that university students perceived collaborative writing as motivating and beneficial for language learning when appropriately implemented.

Classroom observations and the teacher interview indicated that the limited use of collaborative writing was mainly associated with methodological and institutional factors, including time constraints, insufficient preparation to manage collaborative activities, and concerns about unequal student participation. These barriers are consistent with previous studies on cooperative learning, which emphasize that successful implementation depends on appropriate planning, teacher training, and clearly structured collaborative tasks (Gillies et al., 2008; Juárez Pulido et al., 2019).

Another relevant finding was that most participants reported regular access to smartphones and internet connectivity, together with moderate familiarity with collaborative digital tools. This technological readiness provides favorable conditions for integrating digital platforms into vocabulary instruction. Previous research has demonstrated that combining collaborative writing with digital resources and gamification increases student engagement, promotes interaction, and facilitates vocabulary retention (Teow Wan Shin, 2014; Wiethof et al., 2021).

Overall, the evidence obtained from the diagnostic test, survey, classroom observations, and teacher interview supports the development of the proposed pedagogical model. Integrating collaborative writing with digital tools and gamified activities represents a feasible

strategy for promoting productive vocabulary development among A2 English learners while responding to the instructional needs identified in the UTEQ context.

Although the study provides relevant evidence for English teacher education, certain limitations should be acknowledged. The research employed a descriptive cross-sectional design with a relatively small sample from a single institution, limiting the generalizability of the findings. In addition, the instructional proposal was designed but not implemented during the study. Future research should evaluate its effectiveness through experimental or longitudinal studies involving larger samples and different educational contexts.

Conclusion

The findings of this study indicate that collaborative writing constitutes an effective pedagogical strategy for strengthening English vocabulary acquisition among A2-level learners in Ecuadorian teacher education programs. The evidence confirms the achievement of the research objective by identifying students' vocabulary learning profile, examining their perceptions and current classroom practices regarding collaborative writing, recognizing the factors that limit its implementation, and designing an evidence-based pedagogical proposal that responds to the instructional needs identified at the Technical State University of Quevedo.

The results demonstrate that students exhibit stronger receptive vocabulary knowledge than productive vocabulary competence. Although most participants successfully recognize vocabulary and understand lexical items in context, they experience greater difficulty using vocabulary accurately in communicative situations, particularly when establishing lexical relations and applying vocabulary in productive tasks. These findings indicate that recognizing words does not necessarily guarantee their effective use in communication, reinforcing the distinction between receptive and productive vocabulary discussed throughout this study. Consequently, vocabulary instruction requires learning experiences that promote meaningful language production rather than isolated memorization.

The evidence also indicates that students maintain positive attitudes toward collaborative learning and recognize its value for vocabulary development. However, collaborative writing is implemented only occasionally in classroom practice. Classroom observations and the teacher interview reveal that methodological limitations, limited instructional time, and concerns regarding group management reduce opportunities for students to engage in collaborative writing activities. These findings suggest that the principal challenge is not students' willingness to collaborate but the need for structured instructional practices that facilitate meaningful interaction, shared responsibility, and active language production.

Another relevant finding is that most participants have regular access to smartphones, internet connectivity, and basic familiarity with collaborative digital tools. This technological readiness demonstrates that the educational context offers favorable conditions for integrating digital resources and gamification into English instruction. In line with the interpretation presented in the discussion, these conditions indicate that combining collaborative writing with technology creates opportunities to increase learner engagement, promote interaction, strengthen vocabulary retention, and encourage more frequent productive use of English in authentic learning contexts.

The triangulation of quantitative and qualitative evidence supports the development of the proposed twelve-unit pedagogical model. The proposal directly addresses the lexical and methodological needs identified during the diagnostic phase by integrating collaborative writing, digital tools, and gamified activities into a coherent instructional framework. Rather than functioning as isolated teaching techniques, these elements complement one another to create meaningful learning experiences that encourage vocabulary practice, peer interaction, reflection, and communicative competence while simultaneously strengthening the pedagogical preparation of future English teachers.

Overall, these findings indicate that collaborative writing, supported by digital resources and gamification, represents an evidence-based pedagogical alternative for improving productive English vocabulary acquisition in teacher education programs. The study demonstrates that strengthening collaborative learning environments contributes not only to students' lexical development but also to the formation of future teachers capable of implementing innovative and student-centered methodologies in their own professional practice. Although the proposal has not yet been experimentally implemented, the evidence obtained provides a solid foundation for future intervention studies that evaluate its effectiveness in different educational contexts. Consequently, this research contributes empirical evidence to the field of English language teaching and offers a contextualized instructional model that responds to the linguistic and pedagogical needs of Ecuadorian higher education.

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