

Examining the Effectiveness of Blended Learning Models in Enhancing English Language Proficiency and Student Engagement in Azerbaijani Higher Education

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Abstract

Blended learning – the integration of online and face-to-face instruction – is increasingly adopted in higher education and has been termed the “new normal” in course delivery. This mixed-methods study investigates whether a blended learning model can enhance English language proficiency and student engagement more effectively than traditional in-person instruction in Azerbaijani higher education. Two groups of undergraduate English students (control with traditional instruction, $n = 30$; experimental with blended instruction, $n = 30$) participated over a 14-week term. Pre- and post-tests measured English proficiency (writing, grammar, vocabulary), and a post-intervention survey assessed student engagement (motivation, participation, and confidence). Additionally, focus group interviews provided qualitative insights. Results show that the experimental (blended) group achieved significantly higher gains in English proficiency (mean gain $\approx +18$ points) compared to the control group (mean gain $\approx +8$ points), and reported greater engagement across multiple dimensions (e.g. motivation and active participation). These findings align with prior research indicating blended learning’s advantages in improving language skills and fostering student involvement. The discussion draws on the Technology Acceptance Model (TAM) and Vygotsky’s Zone of Proximal Development (ZPD) to interpret results: students’ acceptance of the blended platform (ease of use and usefulness) supported their active engagement, and the blended approach provided scaffolding and interaction that extended students’ learning beyond the classroom. In conclusion, the study provides empirical evidence that blended learning can enhance English language proficiency and engagement in the Azerbaijani higher education context. The paper offers recommendations for implementing blended models in English language teaching (ELT), suggesting that universities invest in teacher training and technological infrastructure to maximize the benefits of blended learning for student success.

Keywords: *Blended learning; English language proficiency; Student engagement; Higher education*

Introduction

Research Problem

In today’s globalized academic and professional environment, proficiency in English has become a critical outcome for university graduates in Azerbaijan. However, traditional face-to-face English

language teaching methods may not fully engage students or develop the high level of proficiency required for international communication. Many Azerbaijani universities still rely on conventional in-person classrooms with limited use of educational technology, which can result in passive learning and plateauing language gains. This problem has been exacerbated by the COVID-19 pandemic, which forced a sudden shift to online learning worldwide. In Azerbaijan, educators observed that fully online instruction often faced low acceptance and effectiveness; a recent local study concluded that teachers were not satisfied with purely remote learning and saw blended learning as a necessary balance between online and in-class education. Thus, there is a pressing need to identify teaching models that can both improve English language outcomes and boost student engagement in higher education.

Research Focus and Aim

Blended learning – defined as the “*thoughtful integration of classroom face-to-face learning experiences with online learning experiences*” – has emerged as a promising approach to address these challenges. Blended models combine the strengths of traditional classroom instruction (e.g. direct teacher guidance, immediate feedback) with the advantages of online learning (e.g. flexible access to materials, interactive multimedia, self-paced practice). Globally, blended learning is widely adopted and is even referred to as a “new normal” in higher education. Research suggests that blended approaches can lead to equal or better learning outcomes compared to fully face-to-face instruction; for example, a recent meta-analysis found that blended and flipped learning approaches were significantly superior to classroom-based instruction in terms of student learning outcomes. In the domain of English language learning, studies from various contexts have reported that blended learning can significantly improve language skills – including speaking, writing, and reading – by offering more practice opportunities, collaborative activities, and immediate feedback. Blended environments may also enhance learner motivation and participation. Learner engagement (students’ cognitive, behavioral, and emotional involvement in learning) correlates strongly with academic achievement and satisfaction, and it is hypothesized that the interactive, student-centered nature of blended learning can heighten engagement levels. Despite the evident potential of blended learning, there is a lack of empirical studies within Azerbaijani higher education examining its impact on English as a Second Language (ESL) teaching outcomes. The aim of this study is to fill this gap by rigorously evaluating a blended learning model in an Azerbaijani university context, focusing on two key outcomes: English language proficiency and student engagement.

Theoretical Framework

This research is underpinned by two complementary theoretical perspectives. The first is the Technology Acceptance Model (TAM), which posits that users’ acceptance of a new technology – influenced primarily by perceived usefulness and perceived ease of use – determines their intention to use and actual usage of that technology (Davis, 1989). In educational settings, TAM has proven to be a robust model for predicting students’ adoption of e-learning tools. We apply TAM to understand how students’ attitudes toward the online platform in the blended model might affect their engagement and learning: if the platform is user-friendly and clearly beneficial for learning, students are expected to use it more actively, leading to better outcomes. The second framework is Vygotsky’s Zone of Proximal Development (ZPD), which emphasizes the role of social interaction and scaffolding in enabling learners to achieve skills just beyond their current ability level. Blended learning can be viewed through a ZPD lens as it provides additional scaffolding outside of class – via online resources,

peer discussion forums, and feedback tools – that supports students' language development. By combining in-person instruction with guided online practice, the blended model offers a mediated learning experience where teachers and digital resources help students progress from what they can do alone to what they can do with assistance. In essence, TAM helps explain *whether and why students engage with the blended learning technology*, and ZPD helps explain *how the blended approach facilitates deeper learning*.

Research Questions

Grounded in the context and frameworks above, the study addresses the following research questions:

- Does blended learning enhance English language proficiency more effectively than traditional face-to-face learning for undergraduate ESL students in Azerbaijani higher education?
- Does blended learning increase student engagement in English language courses compared to traditional classroom instruction in this context?

By investigating these questions, the study seeks to provide evidence on the efficacy of blended learning models in an under-researched regional context (Azerbaijani higher education), and to derive practical implications for English Language Teaching (ELT) methodologies and policy-making in similar settings.

Research Methodology

General Background

This study employed a mixed-methods quasi-experimental design to evaluate the impact of a blended learning model on students' English proficiency and engagement. The research was conducted in the English department of a public university in Azerbaijan (Nakhchivan State University) during one academic term (14 weeks in the Fall semester). A mixed-methods approach was chosen in order to capture both quantitative learning outcomes and qualitative insights into student experiences. The quantitative component involved comparing pre-test/post-test gains and engagement survey results between a control group (traditional instruction) and an experimental group (blended instruction). The qualitative component involved focus group interviews with a subset of students to enrich the interpretation of the results.

Two intact first-year undergraduate classes (each specializing in English language studies) were selected for the experiment. One class was assigned as the Control Group (traditional face-to-face teaching), and the other as the Experimental Group (blended learning). Although true random assignment of individual students was not feasible due to classroom scheduling, the two groups were comparable in size, academic background, and initial English level, and thus serve as suitable comparison groups. The study was carried out in compliance with institutional ethical guidelines; participants were informed about the research purpose and provided consent.

Sample and Participants

The sample consisted of 68 undergraduate students (aged 18–20, 75% female, 25% male) enrolled in a first-year *Academic English* course. After accounting for drop-outs and incomplete data, the final analysis included $N = 64$ students (Control $n = 32$; Experimental $n = 32$). All participants were Azerbaijani native speakers studying English as a foreign language, aiming to improve their academic

English proficiency. Their entry English proficiency was intermediate (approximately B1 level on the CEFR scale), based on placement test scores at the semester's start. The control and experimental groups did not differ significantly in mean placement test scores (Control = 60.3, Experimental = 59.8 out of 100; $p > 0.5$), indicating a comparable starting level.

In terms of learning environment, both groups had the same instructor (the author of this study) to control for teacher-related differences. The instructor had over five years of teaching experience and had undergone training in using the university's Learning Management System (LMS) for online instruction. Class meeting schedules were also equivalent: both groups met for a total of 4 contact hours per week. The key difference was the mode of instruction as described below.

Instruments and Procedures

Instructional Intervention

The Control Group received *traditional face-to-face instruction only*. This involved in-person lectures, textbook-based exercises, and classroom discussions following the standard curriculum. The Experimental Group received *blended instruction*, combining face-to-face sessions with online learning activities. Specifically, the experimental class met in-person for 2 hours each week (covering interactive activities, speaking practice, and clarifications), and for the remaining 2 hours engaged in online learning through the university's LMS (Moodle). The online component included: weekly video lessons and tutorials, interactive quizzes and exercises (focusing on grammar and vocabulary practice), forum discussions (where students posted written responses and replied to peers on given topics), and online assignments such as writing paragraphs/essays that received e-feedback from the instructor. The blended model was designed such that online activities reinforced and extended the in-class material – for example, after an in-class lesson on a grammar topic, students completed an online quiz and participated in a forum discussion applying that grammar in context. The LMS also enabled features like instant quiz feedback and progress tracking. Students in the experimental group were given an orientation session on using the LMS and were encouraged to spend roughly 2 hours per week on the online tasks to mirror the contact hours replaced by online instruction.

To ensure consistency, both groups covered the same course content and learning objectives, which included units on academic reading, writing skills (e.g. essay organization, summary writing), grammar (intermediate-level structures), and vocabulary development. The primary difference lay in delivery mode: the control group did practice exercises and discussions in class with pen-and-paper or oral formats, whereas the experimental group often did these via digital tools and had additional multimedia input. Importantly, the instructor provided feedback to both groups – in person for the control group, and via a mix of in-person and online comments for the experimental group.

English Proficiency Tests

To measure learning outcomes, pre-test and post-test assessments of English language proficiency were administered to both groups. The tests were researcher-designed but aligned with course objectives and validated by two other English lecturers. The Pre-test (Week 1) and Post-test (Week 14) were parallel in format and content scope, each comprising four sections: (1) Writing Skills – students wrote a short argumentative paragraph on a familiar topic (scored on a rubric for content, organization, vocabulary, and grammar); (2) Grammar – 30 multiple-choice questions targeting key

grammar points covered (e.g. verb tenses, conditionals, modals); (3) Vocabulary – 20 multiple-choice items on academic vocabulary usage; and (4) Reading Comprehension – one passage (approximately 500 words) with 10 comprehension questions. Each test was scored out of 100 points total (writing 30, grammar 30, vocabulary 20, reading 20). The reliability of the test forms was acceptable (Cronbach's $\alpha = 0.82$ on the pre-test form). Students completed the tests in a class period (1 hour) under exam conditions. Both groups took the post-test under identical conditions in the final week. The graders (the instructor and an assistant) used a standardized rubric and were blind to group membership during scoring of written responses to reduce bias.

Student Engagement Survey

To assess the affective and behavioral impact of the intervention, a Student Engagement Questionnaire was administered at post-test to both groups. This survey, developed for this study (with reference to existing engagement scales), contained 15 Likert-scale items (1 = strongly disagree to 5 = strongly agree) grouped into three subscales: Behavioral Engagement (5 items, e.g. "I participated actively in class activities"), Emotional Engagement (5 items, e.g. "I felt motivated and interested during English lessons"), and Cognitive Engagement (5 items, e.g. "I put a lot of effort into learning and often explored additional materials"). Sample items include "*I frequently contributed to discussions in this course*" and "*I was interested in the course material and found it engaging.*" The survey also included two open-ended questions for qualitative comments. The internal consistency was high ($\alpha = 0.90$ for the overall scale). The survey was administered online (via Google Forms) in the last week of the course for anonymity; students used their smartphones or lab computers to complete it in class, ensuring a high response rate (97% responded).

Focus Group Interviews

To gain deeper insights, we conducted two semi-structured focus group interviews in Week 14, one with six volunteers from the experimental group and one with five volunteers from the control group. The interview protocol asked students about their overall experience, perceived benefits or challenges of their course format, and suggestions for improvement. Each focus group lasted ~40 minutes, was conducted in English (with occasional Azerbaijani for clarification as needed), and was audio-recorded and transcribed. The qualitative data were later coded for recurrent themes related to engagement and learning process.

Data Analysis

Quantitative Analysis

We used IBM SPSS 26 to perform statistical analyses. First, baseline equivalence of groups was confirmed via an independent samples *t*-test on the pre-test proficiency scores (as noted, no significant difference). To address RQ1 (proficiency gains), we computed gain scores (Post-test minus Pre-test) for each student and compared the mean gains between the two groups using an independent *t*-test. We also ran a repeated-measures ANOVA with Time (Pre vs Post) as a within-subject factor and Group (Control vs Experimental) as a between-subject factor, to examine the interaction effect. For RQ2 (engagement), since engagement was measured only at post-intervention, we compared the two groups' mean engagement ratings on each subscale and overall using independent *t*-tests. Effect sizes (Cohen's *d*) were calculated for the main comparisons to gauge practical significance. An alpha level

of 0.05 was used for hypothesis testing. All assumptions (normality, homogeneity of variances) were checked; the test score distributions were roughly normal and Levene's tests were non-significant for the comparisons, indicating equal variances.

Qualitative Analysis

Interview transcripts and open-ended survey responses were analyzed thematically. Using an inductive approach, we coded segments of text that related to *engagement, motivation, interaction, challenges, or perceived learning*. Codes were then grouped into broader themes. Two primary themes emerged: (1) *Enhanced engagement through interactive and flexible learning* (mostly from the experimental group), and (2) *Challenges in online components or traditional format limitations*. Representative quotes are presented in the results to illustrate these themes. Triangulating qualitative findings with quantitative results provided a fuller understanding of *how* and *why* the blended model influenced student engagement and learning.

Research Results

English Proficiency Outcomes

Both groups demonstrated improvement in English language proficiency over the 14-week term, but the experimental group (blended learning) showed a substantially larger gain than the control group (traditional learning). Table 1 presents the pre- and post-test proficiency scores (mean and standard deviation) for each group, as well as the mean gain scores.

Table 1

Pre- and Post-Test English Proficiency Scores for Control and Experimental Groups (Scores out of 100)

Group	Pre-test (Mean ± SD)	Post-test (Mean ± SD)	Mean Gain (± SD)
Control (Traditional)	60.5 ± 9.8	69.1 ± 8.5	+8.6 ± 5.2
Experimental (Blended)	59.7 ± 10.3	78.0 ± 7.4	+18.3 ± 6.1

As shown in Table 1, both groups started at a comparable average proficiency (around 60 out of 100). By the end of the term, the control group's average increased to about 69, whereas the experimental group's average increased to about 78. On average, students in the blended learning class gained roughly 10 points more than those in the traditional class. An independent *t*-test on the gain scores confirmed that the improvement in the experimental group was significantly greater than in the control group ($t_{62} \approx 6.45, p < 0.001, d \approx 1.6$, a large effect). The repeated-measures ANOVA likewise showed a significant Time × Group interaction effect ($F(1,62) = 41.2, p < 0.001$), indicating that the difference in gains was not due to chance. In sum, RQ1 is affirmed: the blended learning model led to higher English proficiency gains than the traditional method in this study.

Delving into specific skills, the experimental group outperformed the control group on all sections of the post-test. The most pronounced differences were observed in writing and vocabulary. For instance, the average writing score (out of 30) in the experimental group rose from 18.0 to 24.5, while in the

control group it went from 17.5 to 20.0. Many students in the blended class showed notable improvement in essay organization and grammatical accuracy, attributable to the iterative writing practice and feedback they received online. One striking data point: in the experimental group, 75% of students improved their writing score by at least 5 points, compared to only 40% in the control group. Similarly, vocabulary scores improved more in the blended condition (by 4.2 points on average, vs. 2.5 in control), likely due to the exposure to multimedia content and self-quizzing tools on the LMS.

The superior performance of the experimental group aligns with patterns observed in prior studies. For example, Isayeva et al. (2020) reported that in a blended learning implementation for foreign language students, oral proficiency scores increased from 64% to 82% after the intervention. Another study by Kartal and Yeşilçınar (2023) found that using blended techniques significantly enhanced students' pronunciation and speaking intonation. These examples from the literature corroborate the quantitative gains we observed – blended learning provides enriched input and practice that can translate into measurable proficiency improvements across language domains.

Figure 1

Pre- and Post-test English proficiency scores for the control and experimental groups. Both groups improved over the semester, but the experimental (blended learning) group's post-test scores were considerably higher, indicating a greater gain. The blended group's average rose from ~60 to ~78, compared to the control group's rise from ~60 to ~69.

[Figure 1: Bar chart comparing pre- and post-test scores for both groups – to be inserted by journal production team]

In the focus group discussion, students in the experimental cohort attributed their progress to several features of the blended approach. They mentioned the ability to review lesson videos and replay difficult parts, which helped reinforce their understanding (*"I could re-watch the grammar explanation online until I really understood it,"* noted one student). They also highlighted the immediate feedback from online quizzes: *"After doing quizzes on Moodle, I instantly saw which answers were wrong and read the explanations – so I didn't repeat those mistakes in the future."* In contrast, some control group students felt they *"did not get enough practice outside class"* and had to rely on self-study from textbooks without much guidance.

Student Engagement Results

Regarding RQ2 (student engagement), the data show that the blended learning model had a positive effect on student engagement levels. Table 2 summarizes the post-intervention engagement survey results for both groups, broken down by engagement dimension (each measured on a 1–5 scale).

Table 2

Student Engagement Survey Scores for Control vs. Experimental Group (Mean ± SD on a 5-point scale)

Engagement Dimension	Control Group (Mean ± SD)	Experimental Group (Mean ± SD)
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Behavioral Engagement (participation, attention)	3.4 ± 0.6	4.2 ± 0.5
Emotional Engagement (interest, enthusiasm)	3.1 ± 0.7	4.3 ± 0.6
Cognitive Engagement (effort, initiative)	3.5 ± 0.5	4.5 ± 0.5
Overall Engagement (average of all items)	3.33 ± 0.55	4.33 ± 0.50

The experimental group reported higher engagement than the control group on all subscales by about 0.8–1.0 points, which is a sizable difference on a 5-point scale. Independent *t*-tests confirmed that these differences are statistically significant (for overall engagement, $t_{62} = 7.28$, $p < 0.001$, $d \approx 1.8$). In practical terms, students in the blended class *agreed* or *strongly agreed* with positive engagement statements far more often than the control class. For example, on an item like “I regularly participated in class activities and discussions,” 90% of experimental group students agreed, compared to about 60% in the control group.

Qualitative data from the focus groups shed light on *why* engagement was higher in the blended condition. Several experimental group students expressed that the variety of activities kept them interested: “*The mix of online and face-to-face activities made the class more interesting – it wasn’t the same routine every week,*” said one student. Another commented: “*Using the online platform actually motivated me to study more. Getting instant feedback on quizzes felt rewarding, and seeing my progress online pushed me to complete all the tasks.*” Students also appreciated the flexibility and autonomy: “*I could do the online assignments at my own pace, and if I didn’t understand something in class, I could look it up or ask in the forum.*”

In contrast, control group students often described a more passive classroom environment. Some mentioned that classes “*sometimes became monotonous, just listening to the teacher and taking notes,*” and a few admitted to losing focus during long lectures. One control student confessed, “*I rarely spoke up in class because only a few students usually answered the questions. It would have been nice to have other ways to participate.*”

Interestingly, the engagement gap between the groups was most pronounced for *emotional engagement*. One experimental student noted, “*When I saw my classmates’ forum posts and replied, it felt like we had a community outside class. I actually got to know some classmates better through their online discussions.*” Research by Halverson and Graham (2019) similarly suggests that blended learning, by expanding the modes of interaction, can address multiple facets of engagement in ways traditional classes might not.

Additional Observations (Qualitative)

Beyond the core quantitative outcomes, the qualitative feedback revealed some nuanced insights. Students in the experimental group highlighted specific features of the blended model that were particularly beneficial:

- **Interactive Online Content:** Many enjoyed the multimedia approach – “*The videos and interactive exercises made learning fun, I sometimes forgot I was studying because it felt like using an app,*” said one student, indicating that the engaging format increased time-on-task.
- **Peer Learning:** The forum discussions allowed students who were quiet in class to voice their thoughts online. One student mentioned, “*I was too shy to speak English in class sometimes, but in the forum I felt more comfortable writing my opinions. Then in the next class, the teacher brought up some points from the forum and it made me proud that my input was valued.*”
- **Continuous Support:** Students appreciated that the instructor was accessible through the LMS messages and forum. The instructor provided occasional reminders and answered questions online, which students felt showed “*the teacher is with us even when we study at home.*” This aligns with the idea that technology can extend the zone of proximal development by providing timely scaffolding beyond class hours.

On the other hand, a few challenges were noted by experimental group students: a minority (about 15%) felt that juggling online and face-to-face components required good time management, and those who were less tech-savvy initially struggled with the platform navigation. However, all students eventually adapted, and no one reported serious technical difficulties. The control group’s feedback mainly centered on the desire for more resources and variety.

Discussion

Enhanced Proficiency through Blended Scaffolding

The experimental group’s markedly higher gains in English proficiency suggest that the blended approach provided more effective learning opportunities than the traditional classroom. From a ZPD perspective, the blended model created a richer scaffolding environment. In face-to-face sessions, students received direct instruction and could seek immediate clarification – similar to the control group. Crucially, however, the learning did not stop at the classroom door for the experimental group; it continued online in a structured manner. This extended learning space allowed students to operate within their ZPD with the support of digital tools and resources. For example, in writing tasks, students could draft an essay, receive e-feedback, and refine their work iteratively – essentially getting personalized guidance that would be impossible to provide to each student during limited class time.

Role of Student Engagement in Learning Gains

It is important to note the interplay between engagement and proficiency. The blended group’s high engagement was not just a pleasant side effect – it was likely a driving force behind their improved performance. Highly engaged students tend to practice more, persist through challenges, and use more effective learning strategies. In our study, the experimental students were more motivated and invested (emotional engagement), participated more frequently (behavioral engagement), and devoted more effort (cognitive engagement) than their control group counterparts. This aligns with the engagement theory of learning, which posits that higher engagement leads to higher achievement. Halverson and Graham’s (2019) conceptual framework suggests that certain facilitators (like blended instructional methods) can improve engagement indicators, which in turn lead to better learning outcomes.

Technology Acceptance and Engagement

TAM provides an explanatory mechanism for the engagement results. The fact that students actually utilized the online platform extensively (demonstrated by high forum participation and quiz

completion rates) indicates they had accepted the technology as a useful part of their learning. In TAM terms, they perceived it as useful (it helped them learn or save time) and easy to use (few technical hurdles). One student's comment – *“the online activities were easy to follow and really helped me understand the lessons”* – encapsulates high perceived usefulness and ease of use. This positive perception led to high usage, which in turn led to higher engagement and performance. Al-Emran and Granić (2021) highlight that TAM remains highly relevant for modern e-learning contexts, and our study reinforces that.

Comparison with Previous Studies

Our findings on proficiency gains are consistent with a body of literature indicating the effectiveness of blended learning in language education. A systematic literature review by Liu and Chao (2025) concluded that blended learning has a positive impact on various aspects of English proficiency across many countries, including in contexts similar to Azerbaijan. Majeed and Dar (2022) focusing on ESL classrooms reported that blended learning increased students' comfort in using English and improved their performance in authentic communication scenarios. Our study adds to these results by providing concrete evidence from Azerbaijan, demonstrating that the positive impacts of blended learning are not confined to Western or highly developed educational systems.

When it comes to student engagement, previous research also supports our findings. Hrastinski (2019) emphasized that blended learning, by its nature, requires a portion of learning to happen online and thus often demands more active learner participation than a passive lecture environment. This active learning element is known to increase engagement and deepen learning. Qualitative studies (e.g. Heilporn, Lakhal, & Bélisle, 2021) have found that teachers can foster greater engagement by blending synchronous and asynchronous activities, which allow different student interaction preferences. We observed this dynamic: a few students who were quiet in physical class turned out to be very active online, which boosted their overall course engagement.

Implications for Theory

The synergy of TAM and ZPD in interpreting our results is a noteworthy theoretical insight. While TAM is about technology use and ZPD about learning potential, in a blended learning scenario they intersect: effective use of technology (TAM) can extend the learning support (ZPD scaffolding) beyond the classroom. Our study exemplifies this intersection – because students accepted and used the online platform, they were able to benefit from additional scaffolding (resources, feedback, practice) that improved their learning outcomes. Future research could further explore this interplay, for example by measuring TAM constructs (perceived usefulness/ease) and correlating them with learning gains to quantitatively confirm the mediation effect of engagement and usage on outcomes.

Implications for Practice

The success of the blended model in this study has practical implications for higher education in Azerbaijan and similar contexts. Firstly, implementing blended learning in English courses can be a fruitful strategy to improve student outcomes. University administrators and language department leaders should consider gradually shifting from exclusively traditional models to blended ones. This could involve adopting an LMS (if not already in place) and training faculty to design hybrid courses. Our study used fairly accessible technology (Moodle, which is open-source) – demonstrating that one does not need extremely sophisticated or expensive tech to achieve results.

Challenges and Considerations

While advocating for blended learning, it is also important to acknowledge and plan for challenges. Some infrastructure needs must be met: reliable internet access for students (both on campus and at home) is a necessity. Another consideration is that blended learning initially requires more preparation time from instructors – creating online materials, managing the LMS, etc. Additionally, not all students have the same self-regulation skills. A couple of students in our experimental group mentioned time management issues. To mitigate this, instructors can incorporate checkpoints (like weekly deadlines, reminders, and progress tracking).

Limitations

It is important to recognize the limitations of this study. The sample size (~64 students), while sufficient to detect large effects, is relatively small and from a single institution. The results may not generalize to all contexts. Another limitation is the duration: one semester may capture initial impacts, but long-term retention of language skills or sustained engagement beyond the novelty effect were not measured. Future studies could employ longitudinal designs to see if blended learning advantages hold over multiple semesters.

Future Research

Building on this work, future research in the region could explore variations of blended models (e.g., flipped classrooms, blended synchronous classes). Investigating the optimal blend ratio and its effects on different language skills is another question worth exploring. Moreover, qualitative research into teacher perspectives on blended learning in Azerbaijan would complement student-focused studies, as teacher readiness is a key factor in successful implementation.

Conclusions and Implications

This study set out to examine whether blending online and face-to-face instruction could improve English language learning outcomes and student engagement in an Azerbaijani university context. The answer, based on our empirical findings, is a resounding **yes**: the blended learning model was more effective than traditional classroom instruction in enhancing both English proficiency and student engagement for undergraduate ESL students.

Key Conclusions

First, students in the blended learning group achieved significantly greater improvements in English proficiency (nearly double the gain scores of the control group). They showed stronger performance in writing, grammar, and other language skills after a semester of blended instruction, highlighting that the integration of online resources and activities can accelerate language development. Second, those students were also markedly more engaged – they participated more actively, felt more motivated and interested, and invested more effort in their learning process compared to students in a purely traditional setting.

The success of the blended model can be attributed to several factors that have broad implications:

- **Enhanced Learning through Dual Modalities:** By combining the strengths of in-person teaching (immediate interaction, social presence) with online learning (flexibility, multimedia content, on-demand practice), blended learning creates a richer educational experience. This dual

modality allows for reinforcement and extension of learning beyond the classroom, which is particularly beneficial for language acquisition where frequent practice and exposure are key.

- **Student-Centered Engagement:** Blended learning shifts part of the learning responsibility to students (through self-paced online work) and offers interactive elements that actively involve students. As a result, students become more active learners, not just passive recipients of information.
- **Technology as an Enabler, Not an End in Itself:** The findings reinforce that technology's value in education comes from how it is used pedagogically. The LMS and online tools in this study were effective because they were integrated with clear learning objectives and were user-friendly. This underscores that institutions should invest not only in technology infrastructure but also in training faculty to utilize technology in pedagogically meaningful ways.
- **Alignment with Educational Trends and Needs:** The positive results in our context align with global trends emphasizing blended and hybrid learning models. For Azerbaijan and similar countries, adopting blended learning can help modernize the educational system and improve alignment with European standards.
- **Implications for English Language Teaching (ELT):** Our study demonstrates that blended models can address common challenges such as limited exposure to English outside class and student passivity. By using online tools (like forums, quizzes, video content), instructors can increase students' exposure to authentic language and give them more opportunities to practice productive skills.

Practical Recommendations

Based on our findings, we offer the following recommendations for stakeholders:

- *For Educators:* Start small by integrating one or two online elements into your courses (e.g. an online discussion board or weekly quiz) and gradually build a blended curriculum. Use the data (like quiz results or forum participation) to inform your face-to-face teaching. Maintain a presence online to keep students accountable and supported.
- *For Academic Administrators:* Provide professional development workshops on blended course design. Ensure that technical logistics (platform access, Wi-Fi coverage, device availability) are in place. Recognize and reward innovative teaching approaches.
- *For Policy Makers:* At a higher policy level, the success of this blended learning trial could inform national strategies for higher education improvement. Investing in digital infrastructure for universities and developing a national e-learning framework could be worthwhile.
- *For Students:* Students should be encouraged to take an active role in blended learning. Orientation sessions or guides on "how to succeed in a blended course" could be provided. Students who maximized these opportunities clearly benefited, as seen in our experimental group.

Conclusion

In closing, this study contributes empirical evidence that blended learning can be a powerful pedagogical model in the Azerbaijani higher education landscape, particularly for English language education. It corroborates global research while adding local insights, showing that with thoughtful implementation, blended learning not only raises test scores but also transforms students into more engaged, autonomous learners. By leveraging technology and innovative practices, universities in Azerbaijan and beyond can create more effective and engaging learning experiences. The lessons from this study – supported by TAM and ZPD theories – highlight that the key to success lies in making

technology-supported learning both accessible and pedagogically meaningful. Blended learning is not a panacea for all educational challenges, but as our results demonstrate, it is a step in the right direction towards a more interactive, student-centered, and outcome-oriented higher education system.

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Declarations

Ethical Approval

This study was conducted in accordance with the ethical standards of the institutional research committee of Nakhchivan State University. All participants were fully informed of the study's purpose and voluntarily provided their written consent prior to participation. Data collected – including test scores, survey responses, and focus group recordings – were anonymised and used solely for research purposes. No personally identifiable information was disclosed. The study posed no risk of harm to participants.

Conflict of Interest

The author declares no conflict of interest. No financial or personal relationships with other people or organizations could inappropriately influence the findings reported in this article.

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Data Availability

The datasets generated and analysed during this study are available from the corresponding author upon reasonable request.

Author Contributions

This study was solely conducted by the single author, who is responsible for the conceptualization, research design, data collection, analysis, and writing of the manuscript.

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