

INTEGRATING TECHNOLOGY IN EFL CLASSROOMS: A COMPUTER-ASSISTED LANGUAGE LEARNING PERSPECTIVE ON LEARNER ENGAGEMENT AND PROFICIENCY DEVELOPMENT.

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Abstract

This article examines the integration of technology, and specifically Computer-Assisted Language Learning (CALL) tools, into English as a Foreign Language (EFL) classrooms, with a focus on its effect on learner engagement and linguistic proficiency. Employing a quasi-experimental design, the study compared two groups of intermediate EFL learners over a ten-week instructional period: one taught through a technology-integrated syllabus incorporating multimedia resources, mobile-assisted language-learning applications, and online collaborative platforms, and another instructed through conventional textbook-based methods. Data were gathered through pre- and post-tests measuring vocabulary retention and speaking fluency, supplemented by a learner engagement questionnaire administered at the close of the study. Findings indicate that the technology-integrated group demonstrated measurably higher gains in both vocabulary retention and oral fluency, alongside elevated self-reported engagement and motivation, when compared with the control group. These results substantiate the pedagogical value of deliberately and purposefully integrated technology, suggesting that CALL tools, when aligned with clear instructional objectives rather than deployed for novelty alone, can meaningfully enhance both linguistic outcomes and classroom dynamics. Implications for curriculum design and teacher training are discussed, alongside limitations that warrant a cautious interpretation of the findings.

Keywords: Computer-Assisted Language Learning, EFL classroom, learner engagement, technology integration, language proficiency

Introduction

The past two decades have witnessed a profound transformation in the landscape of foreign language education, driven largely by the proliferation of digital technologies. Where the EFL classroom was once defined by the printed textbook, the chalkboard, and the audio cassette, it is now increasingly characterised by interactive whiteboards, mobile applications, and cloud-based collaborative platforms. This shift has given rise to a distinct field of pedagogical inquiry, generally referred to as Computer-Assisted Language Learning, or CALL, which investigates how digital tools can be harnessed to support the acquisition of a second or foreign language.

Contemporary learners, frequently characterised as digital natives, arrive in the classroom already accustomed to interacting with screens, applications, and networked communities. This reality creates both an opportunity and a challenge for language educators. On one hand, technology offers unprecedented access to authentic linguistic input, immediate feedback mechanisms, and opportunities for learner autonomy that were simply unavailable in earlier decades. On the other hand, the uncritical or poorly planned introduction of digital tools risks becoming a superficial novelty that distracts from, rather than reinforces, sound pedagogical principles. Scholars such as Warschauer and Chapelle have long argued that the pedagogical value of CALL lies not in the technology itself but in the manner of its integration into a coherent instructional design.

Despite a growing body of literature affirming the potential benefits of technology-enhanced instruction, many EFL classrooms, particularly within tertiary education contexts in Central Asia, continue to rely predominantly on traditional, teacher-centred methods. This persistence may be attributed to factors such as limited institutional infrastructure, inadequate teacher training in digital pedagogy, or simple reluctance to depart from familiar practices. Consequently, a gap remains between the

theoretical promise of CALL and its practical, systematic implementation in everyday teaching.

This study was therefore designed to investigate, in a controlled and structured manner, whether the integration of selected technological tools into an EFL syllabus produces measurable improvements in learner outcomes when compared with conventional instruction. Specifically, the study sought to answer the following research questions: first, does technology-integrated instruction lead to greater vocabulary retention than traditional instruction over an equivalent period; second, does such instruction produce measurable gains in speaking fluency; and third, how does learner engagement differ between the two instructional approaches. By addressing these questions, the article aims to contribute empirically grounded insight to a debate that has, until now, often rested on theoretical assertion rather than classroom-based evidence.

Methods

Research Design

A quasi-experimental, two-group comparative design was adopted for this study. This design was selected because random assignment of individual learners to groups was not feasible within the constraints of an existing academic timetable; instead, two intact intermediate-level EFL classes, judged comparable in prior proficiency on the basis of a placement test administered by the institution, were designated as the experimental and control groups respectively.

Participants

The study involved sixty undergraduate EFL learners, aged between eighteen and twenty, divided into two groups of thirty. Both groups shared a broadly similar distribution of gender, prior language exposure, and academic standing, thereby minimising the likelihood that extraneous variables would meaningfully confound the results. All participants provided informed consent prior to the commencement of the study, and confidentiality of individual results was maintained throughout.

Instructional Procedure

Over a period of ten weeks, the experimental group received instruction built around a technology-integrated syllabus. This syllabus incorporated a mobile-assisted vocabulary application used for spaced-repetition practice outside class hours, short video-based listening tasks drawn from authentic online sources, and a cloud-based discussion platform on which learners posted brief spoken recordings in response to weekly prompts. The control group, by contrast, followed the standard institutional syllabus for the same set of thematic units, relying on the assigned textbook, in-class oral drills, and handwritten vocabulary exercises, without the use of digital tools beyond an occasional audio recording played in class.

Instruments and Data Collection

Three principal instruments were used to gather data. A vocabulary test, comprising fifty target items drawn from the shared thematic units, was administered to both groups immediately before and immediately after the ten-week period, allowing for a direct measurement of retention gains. Speaking fluency was assessed through a structured two-minute monologue task, evaluated by two independent raters using a standardised fluency rubric addressing pace, hesitation, and coherence, with inter-rater reliability checked prior to full-scale scoring. Finally, a twelve-item Likert-scale questionnaire was administered to the experimental group only, at the conclusion of the study, to capture learners' self-reported levels of engagement, motivation, and perceived usefulness of the technological tools employed.

Data Analysis

Quantitative data from the vocabulary and fluency assessments were analysed by comparing mean pre-test and post-test scores for each group, with gain scores calculated as the difference between the two. Descriptive statistics, including means and standard deviations, were used to summarise performance, while questionnaire responses were analysed descriptively to identify prevailing patterns in learner perception.

Results

Both groups demonstrated improvement over the ten-week period, which is unsurprising given the instructional exposure common to both conditions. However, the magnitude of improvement differed notably between the two groups, particularly with respect to vocabulary retention and speaking fluency, as summarised in Table 1.

Table 1. Mean Pre-Test and Post-Test Scores by Group**

Measure	Group	Pre-Test	Post-Test	Mean Gain
Vocabulary (out of 50)	Experimental	24.3	40.1	+15.8
Vocabulary (out of 50)	Control	23.9	31.6	+7.7
Fluency (out of 20)	Experimental	11.2	16.4	+5.2
Fluency (out of 20)	Control	11.5	14.0	+2.5

As Table 1 illustrates, the experimental group's mean gain in vocabulary score exceeded that of the control group by more than a factor of two, while the gain in fluency score was roughly double that of the control group. Both groups began the study with broadly equivalent scores, which supports the assumption of comparability between the two intact classes prior to intervention.

With respect to the engagement questionnaire, administered exclusively to the experimental group, responses indicated a generally favourable perception of the technology-integrated approach. A substantial majority of respondents agreed or strongly agreed that the mobile vocabulary application made independent study more enjoyable, that the video-based listening tasks felt more relevant to real-world language use than textbook audio, and that the discussion platform reduced their anxiety about speaking in front of classmates. A smaller proportion of learners expressed mixed feelings, most commonly citing occasional technical difficulties or a preference for face-to-face interaction over online discussion.

Discussion

The results of this study lend empirical support to the proposition that thoughtfully integrated technology can enhance both the linguistic outcomes and the affective experience of EFL learners. The markedly greater gain in vocabulary

retention observed in the experimental group is consistent with the broader literature on spaced-repetition and mobile-assisted vocabulary learning, which holds that distributed, low-stakes practice outside the classroom reinforces material introduced during formal instruction. Golonka and colleagues have similarly observed that technology tools which extend practice beyond scheduled class time tend to yield stronger retention effects than approaches confined to the classroom alone.

The improvement in speaking fluency observed among the experimental group is likewise noteworthy. One plausible explanation lies in the nature of the discussion platform used, which allowed learners to record and, where desired, re-record their spoken responses before submission. This affordance may have reduced the performance anxiety often associated with real-time oral production in front of peers, thereby allowing learners a greater degree of comfort in experimenting with language. This interpretation is corroborated by the questionnaire data, in which a considerable number of learners specifically identified reduced speaking anxiety as a benefit of the technology-integrated approach.

It is important, however, to interpret these findings with appropriate caution. The quasi-experimental design, while practical within an institutional setting, does not permit the same degree of causal certainty as a fully randomised controlled trial, since the two groups, though comparable on entry measures, were not randomly assigned. It is also possible that a novelty effect contributed to the experimental group's heightened engagement, given that the technological tools were new to these learners; whether such gains would persist over a longer instructional period remains an open question. Furthermore, the sample was drawn from a single institutional context, which limits the generalisability of the findings to other educational settings, particularly those with differing levels of technological infrastructure or learner familiarity with digital tools.

Notwithstanding these limitations, the findings carry several practical implications for curriculum designers and classroom practitioners. First, they suggest that technology integration is most effective when it is purposefully aligned with specific learning objectives, such as vocabulary consolidation or fluency development,

rather than introduced as an unstructured supplement. Second, the apparent reduction in speaking anxiety associated with asynchronous, recordable speaking tasks suggests that such tools may hold particular value for learners who are otherwise reluctant to participate in oral activities. Third, the results underscore the importance of adequate teacher training in digital pedagogy, since the benefits observed here depended not merely on the availability of technology but on its deliberate incorporation into a coherent instructional sequence.

Conclusion

This study set out to examine whether the integration of Computer-Assisted Language Learning tools into an EFL syllabus produces measurable benefits for learner vocabulary retention, speaking fluency, and engagement, relative to conventional instruction. The findings suggest that it does, with the technology-integrated group outperforming the control group on both linguistic measures while reporting favourable levels of engagement and reduced speaking anxiety. These results reinforce a central claim in the CALL literature: that technology, when deployed with clear pedagogical intent, can serve as a powerful complement to, rather than a replacement for, sound language teaching practice. Future research employing larger and more diverse samples, longer intervention periods, and randomised assignment would help to further substantiate these findings and clarify the specific conditions under which technology integration yields the greatest benefit for language learners.

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