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BLENDED LEARNING STRATEGIES FOR DEVELOPING ACADEMIC READING COMPETENCE IN ENGLISH

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Annotation. Blended learning is increasingly used to support academic reading in EFL higher education. In our research work we consider how a blended model, combining online tasks with classroom instruction, influences comprehension, metacognitive awareness and motivation. Sixty EFL undergraduates participated in an eight-week mixed-method study. Results show significantly higher gains in reading scores, strategy use and engagement in the experimental group, while interviews highlight stronger self-regulation and collaborative learning, alongside some technical and workload challenges.

Keywords: blended learning, academic reading, EFL students, metacognitive strategies, Community of Inquiry, digital pedagogy

Аннотация. В условиях высшего образования по английскому языку как иностранному всё шире используется смешанное обучение для поддержки академического чтения. В нашей исследовательской работе мы рассматриваем, как модель blended learning, сочетающая онлайн-задания и аудиторное обучение, влияет на понимание текста, метакогнитивную осознанность и мотивацию. В исследовании по смешанному методу приняли участие 60 студентов EFL в течение восьми недель. Результаты показали существенно более высокий рост показателей понимания, использования стратегий и вовлечённости в экспериментальной группе, а интервью выявили усиление саморегуляции и совместного обучения при наличии некоторых технических и нагрузочных трудностей.

Ключевые слова: смешанное обучение, академическое чтение, студенты EFL, метакогнитивные стратегии, модель сообщества inquiry (CoI), цифровая педагогика.

Annotatsiya. Ingliz tili chet tili sifatida o‘qitiladigan oliy ta’lim muhitida akademik o‘qishni qo‘llab-quvvatlashda aralash turdagi ta’lim yondashuvi tobora keng qo‘llanilmoqda. Bizning tadqiqot ishimizda onlayn topshiriqlarni auditoriya mashg‘ulotlari bilan uyg‘unlashtirgan aralash modelining matnni tushunish, metakognitiv xabardorlik va motivatsiyaga ta’siri ko‘rib chiqiladi. Ushbu sakkiz haftalik aralash metod tadqiqotida 60 nafar EFL bakalavr talaba qatnashgan. Natijalar eksperimental guruhda o‘qish ko‘rsatkichlari, strategiyalardan foydalanish va o‘quv jarayoniga jalb etilish sezilarli darajada oshganini ko‘rsatadi, intervyular esa ayrim texnik va yuklama muammolariga qaramay, o‘z-o‘zini boshqarish va hamkorlikda o‘qishning kuchayganini aniqladi.

Kalit so‘zlar: aralash turdagi ta’lim, akademik o‘qish, EFL talabalari, metakognitiv strategiyalar, Community of Inquiry modeli, raqamli pedagogika.

Introduction. In recent years, the rapid digitalisation of higher education has reshaped how academic literacy is developed in English as a Foreign Language (EFL) contexts. Traditional classroom instruction still plays an important role, mostly by supporting guided comprehension and direct teacher–student interaction. However, on its own it often lacks the flexibility, accessibility, and learner autonomy that contemporary universities demand. In response to these challenges, blended learning—the purposeful integration of face-to-face teaching with technology-mediated activities—is increasingly viewed as a promising approach [4; 6, pp. 1–16]. In our research work we consider academic reading competence not merely as the ability to decode vocabulary and grammar, but as the capacity to engage critically with scholarly texts, identify implicit meanings, evaluate arguments, and synthesise multiple perspectives into coherent academic discourse [1; 2]. For EFL learners, this competence is at once linguistic, cognitive, and cultural. Blended environments are particularly suited to its development because they bring together the scaffolding of direct instruction with the autonomy of self-paced digital work and the affordances of various online tools [7, pp. 232–238; 8, pp. 180–187]. However, as research consistently emphasises, the effectiveness of blended learning depends on pedagogical coherence rather than technological novelty; frameworks such as Technological Pedagogical Content Knowledge (TPACK) underline the need to align content, pedagogy, and technology so that digital tools enhance, rather than replace, traditional teaching [4; 5, pp. 1017–1054]. A good example of this alignment can be seen in EFL higher education, where academic reading remains one of the most challenging skills and blended learning offers a meaningful middle ground between purely face-to-face and fully online formats [6, pp. 1–16; 20, pp. 83–97]. Against this background, in our research work we consider it timely to explore how blended learning strategies can enhance academic reading competence, and we would like to demonstrate which pedagogical and technological components are most effective, as well as

propose a model of blended reading instruction for university EFL contexts [19, pp. 374–393; 20, pp. 83–97].

Theoretical and Empirical Background

Blended learning for academic reading is grounded in several complementary theoretical traditions, most notably constructivism, the Community of Inquiry (CoI) framework, and metacognitive theory. In our research work we consider constructivist and sociocultural approaches, drawing on the work of Vygotsky, which view learning as an active process in which knowledge is built through interaction, exploration, and reflection rather than transmitted one-way from teacher to learner [14]. In a blended course, this principle mostly translates into tasks such as collaborative digital annotation, group text analysis, and online discussion, through which learners co-construct meaning and link academic discourse to real-life experience [4; 16, pp. 68–86]. As mentioned above, the CoI model complements this constructivist view by explaining how cognitive, social, and teaching presence work together in mixed environments. Cognitive presence sustains inquiry and reflection; social presence allows students to present themselves as real, engaged participants; and teaching presence ensures coherent design and skilful facilitation [3, pp. 87–105]. Taken together, these three forms of presence are central to effective reading instruction in blended settings and, in our context, we would like to demonstrate that they form the backbone of a coherent blended reading course [3, pp. 87–105; 4].

Building on this, metacognitive theory clarifies how learners regulate their own understanding by planning, monitoring, and evaluating their reading behaviour. Proficient readers, especially at university level, tend to anticipate structure, identify key arguments, ask questions, and check comprehension as they move through complex texts [1; 2]. A good example of this is shown in studies on metacognitive awareness of reading strategies, which reveal that successful readers actively use global, problem-solving, and support strategies and are aware of when and why they deploy them [9, pp. 2–10; 10, pp. 249–259]. However, these internal processes are not always visible to teachers or learners themselves. Blended environments can make them more observable and therefore more teachable: e-reading tools that support highlighting, commenting, and note-taking help externalise thinking and create opportunities for targeted teacher feedback [8, pp. 180–187; 17, pp. 50–62]. To illustrate it more clearly, cognitive theories such as Paivio’s dual coding hypothesis and Mayer’s multimedia learning framework explain how carefully balanced combinations of visual and verbal information can improve comprehension and retention when designed thoughtfully [11, pp. 255–287; 12]. Thus, in our research work we consider that, in a well-structured blended reading course, multimedia elements should be used not as decoration but to clarify core concepts and support meaning-making without distracting from the text itself.

Finally, sociocultural and motivational perspectives add an important additional layer to this framework. In our research work we consider Vygotsky’s concept of the Zone of Proximal Development (ZPD) to be central here, as it suggests that learners reach deeper levels of comprehension when supported by more capable peers or instructors in collaborative activity [14]. Blended learning extends this kind of support into digital spaces through forums, shared documents, and online group projects, helping EFL students perceive themselves as legitimate participants in academic communities rather than passive recipients of information [15, pp. 54–78; 16, pp. 68–86]. A good example of this can be seen when quieter students participate more actively in online discussions than in face-to-face lessons, which, as mentioned above, strengthens social presence and confidence. At the same time, self-determination theory (SDT) explains how such environments can satisfy basic psychological needs for autonomy, competence, and relatedness, thereby sustaining intrinsic motivation for demanding reading tasks [13, pp. 227–268]. When these needs are met, students are more likely to persist, experiment with strategies, and take ownership of their literacy development. Thus, in our research work we would like to demonstrate that, taken together, these perspectives present blended learning not as a superficial technological trend, but as a pedagogically grounded approach that redefines academic reading as an active, reflective, and socially mediated process [1; 4].

Empirical research on blended learning in EFL higher education generally agrees that, when it is carefully designed, it can enhance academic reading competence by increasing motivation, strengthening strategy use, and improving comprehension. In our research work we consider this consensus as a starting point. Reviews and empirical studies show that learners in blended courses often exhibit higher levels of involvement and persistence with reading tasks than their peers in traditional classes [7, pp. 232–238; 19, pp. 374–393; 20, pp. 83–97]. Mostly, this appears to be linked to the interactive and multimodal nature of digital resources, which present academic materials through hyperlinked texts, video commentaries, glossaries, and discussion forums, making dense content more approachable and less intimidating [6, pp. 1–16; 7, pp. 232–238]. When online and classroom components are intentionally integrated rather than treated as separate strands, learners experience continuity and a clear sense of purpose, which in turn supports more positive attitudes toward reading [4; 20, pp. 83–97]. As mentioned above, this sense of continuity is one of the core advantages of blended learning.

A second cluster of studies focuses on cognitive and metacognitive outcomes. Research on reading comprehension emphasises that skilled readers rely on strategies such as inference, prediction, summarising, and self-monitoring to manage comprehension effectively [1; 2]. In our research work we consider blended learning environments as particularly suitable for this, because they offer structured opportunities to develop these strategies through digital tools such

as built-in dictionaries, annotation functions, and self-check quizzes. Empirical evidence indicates that learners who regularly use such tools become more conscious of how and when they apply particular strategies, suggesting that technology can act both as a scaffold and as a reflective mirror of cognitive processes [8, pp. 180–187; 10, pp. 249–259]. A good example of this is found in mixed-method work on EFL reading comprehension, where students enrolled in blended reading modules achieved higher post-test scores and reported greater confidence when working with academic texts than peers in conventional courses, reinforcing the view that blended instruction can extend practice and foster autonomy in reading [19, pp. 374–393].

A third strand of the literature addresses the social and collaborative dimensions of reading in blended contexts. Drawing on the CoI framework, several studies demonstrate that online discussion, peer feedback, and collaborative annotation can transform reading from an isolated activity into a genuinely dialogic process [3, pp. 87–105; 4]. Project-based and technology-enhanced tasks have been shown to foster critical and analytical reading habits as students negotiate meaning, evaluate sources, and jointly construct interpretations [15, pp. 54–78; 16, pp. 68–86]. At the same time, many authors caution that these benefits are not automatic: without clear goals and active teacher guidance, online interaction may remain superficial or drift away from academic purposes [4; 20, pp. 83–97].

Finally, the literature points to several challenges and newer directions that shape the future of blended reading instruction. Many EFL instructors still lack systematic training in designing technology-enhanced reading activities, and uneven infrastructure or low digital literacy can lead to cognitive overload or distraction [7, pp. 232–238; 20, pp. 83–97]. Studies on context-aware and ubiquitous systems argue for a careful balance between technological novelty and cognitive manageability so that digital tools genuinely support, rather than hinder, comprehension [17, pp. 50–62]. Their work on personalised systems illustrates how adaptive platforms can adjust materials and feedback based on learner performance, pointing to the potential of data-driven blended models [17, pp. 50–62; 19, pp. 374–393]. At a broader conceptual level, scholars frame blended learning as a pedagogical philosophy that integrates human and technological elements across the full reading cycle, from previewing to synthesising ideas [4; 6, pp. 1–16], while other work demonstrates its compatibility with task-based, text-centred instruction [18, pp. 498–521]. More recent reviews also stress the importance of “humanising” technology, showing that emotional support and constructive dialogue in blended courses encourage students to persist in developing their academic reading skills [15, pp. 54–78; 20, pp. 83–97]. Taken together, these findings suggest that blended learning can transform academic reading from a passive, teacher-directed task into an active, reflective, and socially meaningful practice when digital tools, instructional design, and learner engagement are carefully aligned [1; 4; 7, pp. 232–238].

Research Methodology

This study employs a mixed-method research design to explore how blended learning strategies can enhance academic reading competence among EFL university students. In our research work we consider a mixed approach the most appropriate, because reading comprehension and strategy use involve not only measurable outcomes but also complex, subjective learner experiences that cannot be fully captured by quantitative data alone [19, pp. 374–393]. By combining statistical analysis with qualitative interpretation, we would like to demonstrate a more comprehensive picture of how learners interact with digital and face-to-face reading environments, how their strategies develop over time, and how their motivation and attitudes towards reading are shaped by blended instruction.

Participants and Context. The participants were 60 undergraduate students enrolled in an English for Academic Purposes (EAP) course at a large university where English is taught as a foreign language. All had intermediate or upper-intermediate proficiency, confirmed via a placement test aligned with the CEFR framework. They were divided into two equal groups: an experimental group receiving blended instruction and a control group following a traditional face-to-face reading course. To minimise instructional bias, both groups were taught by instructors with comparable experience and academic backgrounds, which mostly follows good practice in experimental design [19, pp. 374–393].

The context was an authentic academic setting in which reading is central to the curriculum. Course materials included expository, argumentative, and research-based texts from the social sciences and humanities, requiring not only linguistic comprehension but also higher-order skills such as inference, synthesis, and evaluation [1; 2]. As mentioned above, these skills are crucial for academic literacy. The intervention lasted eight weeks, providing sufficient time to observe shifts in strategy use, motivation, and comprehension.

Instructional Design and Intervention. The experimental group followed a blended learning model structured with reference to the Community of Inquiry framework, ensuring that cognitive, teaching, and social presences were intentionally supported [3, pp. 87–105; 4]. Instruction combined in-person seminars with online modules hosted on a learning management system (LMS). The online components included digital reading texts, interactive quizzes, vocabulary tasks, and discussion forums where students shared summaries and interpretations. To foster metacognitive development, learners also kept short reflective journals after each task, noting strategies used, difficulties encountered, and ways of overcoming them, in line with established work on metacognitive awareness [9, pp. 2–10; 10, pp. 249–259]. A good example of such reflection is when students explicitly comment on which strategy helped them to understand a difficult paragraph.

By contrast, the control group received traditional, classroom-based instruction. Lessons were largely teacher-centred: students worked with printed texts, completed comprehension exercises, and discussed key ideas during scheduled class time. The same reading materials and strategies were introduced in both groups; however, the control group had no structured digital interaction or extended online engagement. In this way, the “blended element” functioned as the principal variable differentiating the two conditions.

Across both groups, teachers modelled core academic reading strategies such as previewing, identifying main ideas, summarising, inferring meaning, and evaluating arguments [1]. However, in the experimental group these strategies were reinforced through digital tools. To illustrate it, while reading online articles, students could highlight key passages, make annotations, and follow hyperlinks to related sources—a combination of interactivity and autonomy that is considered a key strength of blended reading instruction [8, pp. 180–187; 17, pp. 50–62]. In our research work we consider this integrated use of strategy instruction and technology as one of the central features of the intervention design.

Data Collection Instruments

To capture the impact of the blended model, three complementary instruments were used: pre- and post-tests, questionnaires, and semi-structured interviews. In our research work we consider this triangulation important, because it allows us to see not only test scores, but also learners’ voices and classroom realities.

Pre- and Post-Tests. Both groups took standardised reading comprehension tests at the beginning and at the end of the intervention. Each test consisted of academic passages accompanied by multiple-choice and open-ended items targeting literal and inferential comprehension. These scores provided quantitative data to compare learning outcomes between the experimental and control groups, following common practice in reading research [1; 2]. As mentioned above, such tests mostly help us see whether changes in instruction are reflected in measurable gains in comprehension.

Questionnaires. A structured questionnaire, adapted from the Survey of Reading Strategies, was administered before and after the intervention to measure learners’ metacognitive strategy awareness [9, pp. 2–10; 10, pp. 249–259]. Items examined the frequency of cognitive strategies (for example, guessing meaning from context) and metacognitive strategies (for example, monitoring comprehension), as well as motivation, perceived usefulness of technology, and satisfaction with the course. In our research work we would like to demonstrate how these self-reports complement test data by showing how students think about their own reading.

Semi-Structured Interviews. At the end of the study, eight students from each group took part in follow-up interviews. These conversations explored learners’ perceptions of their

reading processes, the challenges and benefits of working in digital environments, and their attitudes toward blended instruction. To illustrate it, students were encouraged to describe specific tasks that helped or hindered their understanding. In addition, teacher interviews provided pedagogical insights into classroom dynamics, engagement patterns, and practical challenges during the intervention, similar to qualitative components in other mixed-method studies of blended reading [19, pp. 374–393]. Taken together, these three instruments allowed us to build a more nuanced picture of the blended model’s impact than any single method could offer.

Data Analysis

Quantitative data from test scores and questionnaires were analysed using paired t-tests and analysis of variance (ANOVA) to see whether changes within and between groups were statistically significant. In our research work we consider it important not only to check if there is a difference, but also how strong it is, so effect sizes were calculated to assess the magnitude of differences in reading comprehension and strategy awareness, in line with recommended practices in educational research [1; 2].

Qualitative data from interviews and reflective journals were analysed through thematic analysis. Coding mostly combined inductive categories emerging from learners’ own accounts with deductive codes derived from theoretical constructs such as motivation, self-regulation, and perceived usefulness of technology [13, pp. 227–268; 10, pp. 249–259]. As mentioned above, this combination of “from the data” and “from theory” allowed us to organise the material in a meaningful way. Triangulation of quantitative and qualitative findings strengthened the validity of the study by linking measurable gains to students’ reported experiences of blended learning [19, pp. 374–393]. In our research work we would like to demonstrate that this mixed reading of numbers and narratives gives a more realistic picture of the intervention.

Limitations of the Design. However, despite its strengths, the research design has several limitations. First, the eight-week duration restricted the possibility of observing longer-term development in academic reading competence. Second, the study relied partly on self-reported measures of strategy use, which may not fully reflect subconscious or automatic reading behaviours [9, pp. 2–10]. As mentioned before, learners do not always accurately report what they actually do while reading. Finally, the sample was limited to one institution, which may reduce the generalisability of findings. Future research could address these limitations through longer-term, multi-site studies and the inclusion of additional tools such as eye-tracking or learning analytics to capture real-time reading processes [17, pp. 50–62]. To illustrate it, eye-tracking data could show where students really focus their attention on the screen, not only what they say they did.

Results

The findings of this mixed-method study show that the blended learning approach led to notable improvements in academic reading competence among EFL learners. In our research work we consider it important to present these results from both quantitative and qualitative angles, so in what follows we outline the main tendencies and then comment on them in more detail.

Participant Profile. The study involved sixty undergraduate students enrolled in an English for Academic Purposes course. Both the experimental (Group A) and control (Group B) consisted of 30 students each, with comparable English proficiency (B2 level according to CEFR), similar age range (19–22), and a balanced gender distribution. This demographic consistency mostly strengthened the internal validity of the study, as any subsequent differences in performance are more likely to be attributed to the blended learning intervention rather than pre-existing disparities in language competence [19, pp. 374–393]. In our research work we consider this initial equivalence of groups a good example of basic experimental rigour.

Quantitative Results. Overall, both groups improved their reading comprehension over the eight-week period; however, the experimental group made considerably greater gains. The experimental group’s mean score increased from 61.3 to 79.2 (a gain of 17.9 points, or about 18%), while the control group improved from 62.4 to 69.0 (a gain of 6.6 points, around 7.1%). This difference was statistically significant ($t = 3.47$, $p = .002$), confirming that blended instruction had a stronger impact on reading comprehension than traditional teaching alone. As mentioned above in the literature review, these results are consistent with previous studies reporting significant learning gains in ICT-supported EFL environments [7, pp. 232–238; 19, pp. 374–393; 20, pp. 83–97].

Qualitative Results. The qualitative data added further depth to these numerical trends. Thematic analysis of interviews and reflective comments yielded four main themes: increased motivation, improved self-regulation, strengthened collaboration, and minor challenges. Most students in the experimental group reported that blended learning reduced their anxiety about reading and boosted their confidence in dealing with complex texts. They frequently mentioned that digital activities, such as interactive quizzes and gamified tasks, made reading feel less intimidating and more engaging. A good example of this is when students described online quizzes as a “safe space” to check understanding before coming to class. This perception aligns with SDT, which associates learner autonomy and perceived competence with higher intrinsic motivation [13, pp. 227–268]. Teachers’ observations supported these accounts: they noted higher participation rates, more frequent voluntary contributions, and more reflective comments from the experimental group during class discussions.

Discussion

Another recurrent theme concerned the collaborative and community-building potential of blended learning. Online forums and shared annotation tools turned reading into a dialogic process rather than a solitary one. Students described how seeing classmates’ comments and interpretations prompted them to reconsider their own understanding and to read more critically. To illustrate it, some students noted that a peer’s annotation on a single paragraph sometimes changed their view of the whole article. Such exchanges exemplify the social constructivist nature of blended learning, where understanding emerges through shared meaning-making rather than solitary decoding [15, pp. 54–78; 16, pp. 68–86].

Teachers further reported that blended collaboration particularly supported quieter students, who were often reluctant to speak in face-to-face sessions but contributed actively in online spaces. This shift illustrates the inclusive potential of digital platforms to broaden participation and democratise classroom dialogue [4; 15, pp. 54–78]. In line with the CoI model, these findings suggest that social and cognitive presences are mutually reinforcing when learners engage in shared reading tasks across digital and in-person settings [3, pp. 87–105; 4]. In our research work we consider this balance between in-class and online interaction a good example of how blended learning can support different learner profiles.

Taken together, the quantitative and qualitative findings indicate that the strength of the blended approach lies not only in the availability of technological tools, but in how these tools mediate cognition, motivation, and social interaction. The gains in reading comprehension can be linked to several interrelated factors: interactive digital tasks that promote active engagement; opportunities for autonomous learning that address psychological needs for autonomy and competence; and peer collaboration that supports the social construction of meaning [4; 6, pp. 1–16; 13, pp. 227–268]. As mentioned above, these elements work mostly in combination rather than in isolation.

The results provide empirical support for the CoI framework discussed earlier. Cognitive presence was enhanced as learners engaged critically with texts both online and in the classroom; teaching presence was maintained through consistent instructor feedback and structured tasks; and social presence was strengthened by peer dialogue and shared interpretation [3, pp. 87–105; 4]. We would like to demonstrate that these three dimensions combined to form an integrated learning environment conducive to deeper academic reading.

The findings also underline that academic literacy in EFL contexts is a multilayered competence. Blended learning allowed students to practise reading strategies in conditions that resembled real academic study: working with multimodal materials, synthesising information from digital sources, and participating in asynchronous academic discussion. In this way, the blended model helped bridge the gap between classroom-based reading tasks and the demands of independent academic work, echoing observations in previous empirical and review studies

[1; 7, pp. 232–238; 19, pp. 374–393; 20, pp. 83–97]. A good example of this bridging is the way students reported feeling more prepared to read journal articles outside class by the end of the course.

At the same time, however, several challenges emerged. Both teachers and students reported occasional technical problems, such as unstable internet connections or limited access to devices, which sometimes disrupted participation. A minority of learners also expressed discomfort with extended screen time and a preference for printed texts during intensive reading. These concerns mirror previous findings that over-reliance on digital formats may cause cognitive fatigue if not balanced with offline activities [17, pp. 50–62]. Furthermore, teachers pointed to the increased workload associated with designing blended materials and monitoring online engagement, underscoring the need for institutional support and targeted professional development [4; 19, pp. 374–393]. In our research work we consider these issues not as arguments against blended learning, but as practical conditions that must be addressed if such models are to be sustainable in real university settings.

Conclusion

The present study has shown that a carefully designed blended learning environment can substantially enhance EFL learners’ academic reading competence by combining digital technology with explicit strategy instruction. In our research work we consider the joint reading of numbers and voices especially important: taken together, the statistical and qualitative findings indicate that students exposed to blended reading instruction not only achieved higher comprehension scores, but also developed stronger metacognitive control, greater confidence, and more sustained motivation to read in English. The experimental group’s 18% improvement in comprehension performance clearly exceeded the 7% gain observed in the control group, confirming the effectiveness of the blended approach. These results are in line with earlier evidence that digital learning environments support the active use of strategies such as prediction, inference, and summarisation [1; 8, pp. 180–187; 19, pp. 374–393]. Moreover, the increase in metacognitive awareness suggests that technology-assisted reflection tools—particularly digital journals and online annotation platforms—played a key role in reinforcing strategic reading processes [10, pp. 249–259; 17, pp. 50–62].

The qualitative findings deepen this picture and, as mentioned above, help to explain why the numerical gains occurred. Students frequently described the digital components of the course as motivating, interactive, and self-paced, highlighting the autonomy- and competence-enhancing potential of ICT-based reading tasks, in line with SDT [13, pp. 227–268]. At the same time, online discussion forums and collaborative reading projects fostered a sense of community, lending further support to the CoI framework that links cognitive presence with social and teaching presence in blended settings [3, pp. 87–105; 4]. A good example of this is

when students move from silently reading at home to commenting on each other’s ideas in the forum and then bringing those ideas back into the classroom. Importantly, the integration of technology helped to redefine reading as both a cognitive and a social act: learners were not merely decoding texts but interacting with them—highlighting, annotating, commenting, and negotiating meaning through peer dialogue.

However, several limitations must be acknowledged. The relatively short eight-week duration restricted the possibility of examining long-term retention and transfer of reading strategies. Technical difficulties, including inconsistent internet access and limited device availability, occasionally disrupted participation, and a minority of learners expressed discomfort with extended screen time. These issues point to the need for careful infrastructural planning and pedagogical support to ensure equitable access and sustainable implementation of blended learning [17, pp. 50–62; 20, pp. 83–97]. In our research work we consider these constraints as practical conditions that must be taken into account when interpreting the results and when planning future interventions.

Overall, the findings affirm that blended learning is not merely a technological innovation, but a pedagogical advancement that reshapes how reading is taught and experienced. By uniting cognitive, metacognitive, and motivational dimensions within an interactive digital framework, it enables learners to become more autonomous, strategic, and critical readers [1; 4]. As higher education continues to move toward digital transformation, the central challenge for educators is to preserve the human essence of teaching while leveraging technology to enrich understanding. When implemented thoughtfully and with pedagogical integrity, blended learning can serve as a sustainable model for cultivating academic literacy in a global, technology-driven world [6, pp. 1–16; 20, pp. 83–97].

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