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Enhancing EFL Reading Instruction with Digital Tools: Effects on Comprehension, Vocabulary, and Engagement

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Abstract

This study examines the effects of digital reading tools on reading comprehension, vocabulary acquisition, and engagement among 59 pre-intermediate EFL students at Kabul University, Afghanistan. Using a mixed-methods design, participants were split into a digital reading group (n = 35) using e-books and platforms like Google Classroom, and a traditional reading group (n = 24) using print materials, for over twelve weeks. Pre- and post-tests and a reading engagement questionnaire showed the digital group outperformed the traditional group in comprehension and vocabulary, with greater engagement across cognitive, emotional, and behavioral dimensions. Interviews with 10 students revealed digital tools' benefits, like instant definitions and multimedia, though technical issues such as slow loading were noted. The traditional group valued print's stability but found it less engaging. The study suggests digital tools enhance EFL reading and motivation when implemented thoughtfully, offering practical guidance for educators.

Keywords: Digital reading tools; EFL; Engagement; Kabul University; Motivation; Reading comprehension; Vocabulary acquisition

بهبود تدریس مهارت خوانش در آموزش زبان انگلیسی به عنوان زبان خارجی با ابزارهای دیجیتال: تأثیرات بر درک متن، واژگان و میزان مشارکت

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چکیده

این تحقیق تأثیر ابزارهای دیجیتال خوانش را بر درک متن، گسترش واژگان و میزان مشارکت ۵۹ محصل زبان انگلیسی به عنوان زبان خارجی (EFL) در سطح پیش‌میانی در پوهنتون کابل، افغانستان بررسی کرده است. این مطالعه با استفاده از روش ترکیبی (کمی و کیفی) انجام شده که در آن شرکت‌کنندگان به دو گروه تقسیم شدند: یک گروه دیجیتال (۳۵ نفر) که از کتاب‌های الکترونیکی و پلتفرم‌هایی مانند Google Classroom استفاده کردند و یک گروه سنتی (۲۴ نفر) که از مواد چاپی بهره بردند. پس از دوازده هفته، نتایج آزمون‌های پیشین و پسین و پرسشنامه‌ی میزان مشارکت در خواندن نشان داد که گروه دیجیتال در درک مطلب و یادگیری واژگان نسبت به گروه سنتی عملکرد بهتری داشتند و میزان مشارکت آن‌ها در سه بُعد شناختی، احساسی و رفتاری بالاتر بود. مصاحبه با 10 محصل نشان داد که ابزارهای دیجیتال مزایایی مانند ارائه‌ی فوری معانی و استفاده از چندرسانه‌ای‌ها دارند، اما مشکلات فنی مانند کندی دانلود نیز مشاهده شد. در مقابل، گروه سنتی پایداری و ثبات منابع چاپی را مفید دانسته اما آن را کمتر جذاب ارزیابی کردند. این تحقیق پیشنهاد می‌کند که ابزارهای دیجیتال در صورت اجرای مناسب، می‌توانند مهارت خوانش زبان انگلیسی و انگیزه یادگیری را بهبود بخشند و راهکارهای عملی را برای معلمان ارائه دهند.

واژه‌های کلیدی: ابزارهای دیجیتالی؛ انگیزه؛ آموزش زبان انگلیسی؛ پوهنتون کابل؛ درک متن؛ یادگیری واژگان؛ مشارکت

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Introduction

The integration of technology into English as a Foreign Language (EFL) classrooms has significantly reshaped pedagogical practices over the last few decades. The digital transformation in language education has impacted various aspects of language learning, with reading being one of the most affected skill areas. The role of reading in EFL classes has always been central, as it provides learners with the necessary exposure to language input, develops their vocabulary, and supports their overall comprehension abilities (Grabe, 2009). Research has consistently shown that reading is a cornerstone of language acquisition, as it enables learners to engage with authentic language in meaningful contexts (Krashen, 2004). However, as digital tools and platforms proliferate, it is crucial to examine how technology, specifically digital reading platforms, e-books, and online resources, can enhance or hinder reading development in EFL contexts. The purpose of this paper is to explore the ways in which technology facilitates or challenges reading practices in EFL classrooms. More specifically, it will focus on the application of various technological tools in teaching reading and their potential impact on students' reading comprehension, engagement, and language acquisition. As technology continues to evolve, so does its capacity to reshape how reading is taught and learned. Understanding the current trends and challenges in the use of technology for reading instruction is essential for educators and researchers alike, as it informs evidence-based practices that can optimize learning outcomes for EFL students (Blake, 2008).

Reading is widely regarded as one of the most important skills in second language acquisition. In EFL contexts, reading proficiency is a vital factor in language development, influencing both productive skills (speaking and writing) and receptive skills (listening and reading) (Shih et al., 1997). Research suggests that reading in a foreign language not only promotes vocabulary acquisition but also improves grammatical understanding, fosters critical thinking, and enhances cultural awareness (Day et al., 1998; Nation, 2013). Moreover, reading serves as a primary means of exposure to authentic language input, which is crucial for language learners who may have limited opportunities for interaction in real-world contexts (Moskver et al., 2006). However, traditional methods of reading

instruction in EFL classrooms often rely on printed texts, a format that may not fully engage today's digitally native learners. The advent of technology has provided opportunities for more interactive and diverse forms of reading instruction, such as digital books, online articles, interactive reading platforms, and multimedia content (Stockwell, 2010). With these new tools, teachers can create more dynamic, personalized, and flexible reading experiences for students, which could potentially increase motivation and language learning outcomes (Warschauer, 1997). Studies have shown that digital reading tools can cater to individual learning styles and preferences, making reading more accessible and engaging for diverse learners (Lai & Zheng, 2018).

The integration of technology in education has received considerable attention over the past two decades, particularly in the field of language teaching. Numerous studies have highlighted the positive effects of technology in promoting language skills, including reading. For example, the use of e-books and digital readers in language classrooms allows learners to engage with texts in new and interactive ways, providing them with built-in dictionaries, pronunciation guides, and annotation tools (Cavanaugh et al., 2013). These features can facilitate a more supportive and individualized learning experience, especially for learners at various proficiency levels (Huang et al., 2012). Similarly, online reading platforms, such as news websites, blogs, and social media, expose learners to authentic materials that reflect real-world language use. This type of exposure can be invaluable for EFL learners, as it offers them the opportunity to engage with up-to-date content and culturally relevant topics (Kessler, 2018). Furthermore, many online reading platforms allow for collaborative reading activities, where learners can share interpretations, ask questions, and discuss readings with peers, fostering a more social and interactive approach to reading instruction (Godwin-Jones, 2018). Research has also shown that technology enhances the engagement of students in reading tasks. Traditional reading materials, such as printed textbooks, often fail to motivate students, particularly when they perceive them as outdated or irrelevant (Warren, 2003). Digital tools, on the other hand, can help bridge the gap between students' interests and language learning. For instance, research has found that incorporating

gamified elements in digital reading platforms increases learners' motivation and time spent on reading tasks (Berns et al., 2013). Moreover, technology allows for greater access to reading materials, particularly in contexts where printed resources may be scarce or expensive, thus broadening the range of texts that students can access (Warschauer & Matuchniak, 2010).

While the potential benefits of technology in reading instruction are clear, there are several challenges associated with its integration into EFL classrooms. First and foremost, not all learners have equal access to technology, particularly in low-resource environments. The digital divide remains a significant issue in many parts of the world, where students may lack access to personal computers, reliable internet connections, or the necessary digital literacy skills to navigate online platforms (Horrigan, 2016). This unequal access can exacerbate existing educational inequalities, leaving some students at a disadvantage (Selwyn, 2004). Additionally, teachers' proficiency in using technological tools and their pedagogical understanding of how to effectively incorporate them into reading instruction is critical. Studies have shown that many EFL teachers face challenges in integrating technology into their classrooms due to limited training or lack of familiarity with the tools (Sánchez & Rivas, 2017). This suggests that, while technology has great potential to enhance reading instruction, its effectiveness is contingent on educators' ability to use it in pedagogically sound ways (Hockly, 2013). Moreover, the over-reliance on technology for reading tasks can result in the neglect of other essential skills. For instance, reading on digital platforms may encourage more surface-level reading behaviors, such as skimming and scanning, at the expense of deep, critical reading and reflective thinking (Mangen et al., 2013). The linear structure of print texts fosters sustained engagement with the content, while digital texts, often characterized by hyperlinks and multimedia, can distract readers and lead to fragmented reading experiences (Alventosa, 2012). Finally, there is a growing concern about the impact of digital technology on students' cognitive development. Although digital tools can enhance accessibility and engagement, there is evidence to suggest that excessive use of technology can have detrimental effects on attention span, memory retention, and overall learning outcomes

(Greenfield, 2014). For instance, the ease with which students can switch between different tasks or open new windows on digital platforms may impair their ability to focus on a single reading task for an extended period. This phenomenon, often referred to as "cognitive overload," can negatively impact the depth of comprehension and retention of reading materials (Lepp et al., 2014).

Given these challenges and opportunities, the current study seeks to investigate the role of technology in facilitating or hindering reading practices in EFL classrooms. The research will specifically examine how digital tools such as e-books, online reading platforms, and multimedia resources contribute to reading comprehension, student engagement, and vocabulary acquisition in EFL contexts. The following research questions guide this study:

1. How do digital reading tools affect reading comprehension among pre-intermediate EFL learners compared to traditional print-based materials?
2. To what extent do digital reading tools improve vocabulary acquisition in pre-intermediate EFL classrooms?
3. How do digital reading tools influence cognitive, emotional, and behavioral engagement in reading tasks among EFL learners, relative to traditional methods?

In doing so, this study aims to contribute to the growing body of literature on the intersection of technology and language learning, offering insights into how educators can effectively incorporate technology into reading instruction to enhance learning outcomes (Chapelle, 2008). The findings from this study are expected to inform EFL educators about the potential benefits and pitfalls of using technology in reading instruction, providing them with practical recommendations for integrating digital tools into their pedagogical practices (Hubbard, 2013). Moreover, this research will contribute to the ongoing discourse on the digitalization of language education, highlighting both the possibilities and limitations of technology in fostering language acquisition (Levy & Stockwell, 2013). By addressing these issues, this study aims to provide a balanced perspective on the role

of technology in EFL reading instruction, offering actionable insights for educators, policymakers, and researchers alike.

Research Methodology

This study employs a mixed-method approach to explore the role of technology in enhancing reading skills in English as a Foreign Language (EFL) classrooms. A mixed-methods design allows for a comprehensive examination of the phenomenon from both quantitative and qualitative perspectives, enabling researchers to capture both the measurable outcomes and the nuanced experiences of learners (Creswell & Plano Clark, 2018). By combining numerical data with descriptive insights, this approach offers a well-rounded understanding of how digital tools affect reading comprehension, engagement, and vocabulary acquisition in EFL settings. This section outlines the research design, participants, data collection methods, and data analysis techniques used in the study.

Research Design

The study employs a quasi-experimental design complemented by qualitative case studies. The quasi-experimental component focuses on assessing the impact of technology on reading outcomes, while the qualitative case studies provide rich, contextualized data about the learners' personal experiences and attitudes toward using digital tools in reading. This dual approach aligns with best practices in educational research, as it allows for both the measurement of learning outcomes and the exploration of learners' subjective experiences (Tashakkori & Teddlie, 2015). By triangulating the findings from these two approaches, the study aims to provide a more holistic view of how technology can influence reading practices in EFL contexts.

Participants

This study involved 59 pre-intermediate level students from two freshman English major classes at Kabul University, Afghanistan. Participants were selected through convenience sampling, a method chosen due to the researcher’s current role as an instructor at the institution, which facilitated access to the participants and ensured the comparability of the two groups. The sample consisted of two distinct cohorts: dayshift students (n = 35),

who were assigned to the digital reading group (treatment group), and nightshift students (n = 24), who were assigned to the traditional reading group (control group). All participants, ranging in age from 18 to 25, were enrolled in a reading course specifically designed to enhance their reading proficiency as part of their broader English language program.

Prior to the intervention, a pre-study language proficiency test confirmed homogeneity, with average scores ranging from 60–70%. The digital group in addition to using print materials used e-books and interactive platforms (Google Classroom), while the traditional group relied solely on printed texts, reflecting distinct instructional approaches within comparable academic settings. The digital reading group in addition to print materials engaged with reading materials through e-books, online newspapers, and interactive reading platforms (e.g., Google Classroom). The traditional reading group used paper-based textbooks and printed materials. Almost all participants had a similar level of prior exposure to English language learning, with an average score of 60-70% on a pre-study language proficiency test, which was administered to ensure homogeneity between the groups.

In addition to the larger sample, qualitative data were collected from a subgroup of 5 students from the digital reading group and 5 students from the traditional reading group. These students were selected through purposive sampling to represent a diversity of experiences, including high and low achievers, as well as students who reported varying levels of comfort with technology. These 10 participants participated in individual interviews, allowing for in-depth analysis of their perceptions and experiences.

Data Collection

This study employed three primary methods of data collection: pre- and post-test assessments, semi-structured interviews, and a reading engagement questionnaire.

Pre- and Post-Test Assessments. To evaluate the impact of technology on reading comprehension and vocabulary acquisition, participants completed a series of pre- and post-test assessments. The pre-test was administered before the intervention, and the post-test was given at the end

of the study, after 12 weeks of reading instruction. The assessments included both reading comprehension questions and vocabulary exercises based on the reading materials used during the study.

The reading comprehension component consisted of multiple-choice and short-answer questions that tested participants' understanding of the main ideas, supporting details, and inferred meanings from the texts. The vocabulary exercises assessed the participants' ability to recall and use new words introduced in the readings. The tests were designed to align with the proficiency level of the participants and focused on topics relevant to their academic and professional interests.

Semi-Structured Interviews. In addition to the quantitative assessments, semi-structured interviews were conducted with a subset of 10 students (5 from each group). The interviews aimed to gather qualitative data on students' experiences and perceptions of the reading activities. Each interview lasted approximately 15-20 minutes and was conducted in English, though participants were allowed to use Dari/Pashto if they felt more comfortable. The interview questions were designed to explore the following themes:

- The ease of use and effectiveness of the digital tools for reading instruction.
- Students’ perceptions of their reading comprehension and vocabulary development during the study.
- Engagement levels and motivation when using digital versus traditional reading materials.
- Challenges or obstacles encountered during the use of digital tools for reading.

Interviews were audio-recorded with the participants' consent and transcribed verbatim for analysis. The use of semi-structured interviews allowed for flexibility in probing deeper into participants' responses, ensuring rich and detailed data.

Reading Engagement Questionnaire. A reading engagement questionnaire was administered to all 59 participants at the end of the study

to assess their levels of engagement and motivation in relation to the reading tasks. The questionnaire consisted of 15 Likert-scale items designed to measure the following dimensions of engagement: cognitive, emotional, and behavioral.

The questionnaire also included open-ended questions to capture students' qualitative feedback on their experiences with reading, allowing for further insight into their motivations and challenges. The reliability of the questionnaire was confirmed through a pilot study, with a Cronbach's alpha coefficient of 0.88, indicating strong internal consistency (DeVellis, 2017).

Data Analysis

The data analysis involved both quantitative and qualitative techniques.

Quantitative Analysis. The pre- and post-test scores were analyzed using paired sample t-tests to determine whether there were statistically significant differences in reading comprehension and vocabulary acquisition between the digital reading and traditional reading groups. Effect sizes were calculated using Cohen's d to assess the magnitude of any differences found (Cohen, 1988). Additionally, the reading engagement questionnaire responses were analyzed using descriptive statistics and independent samples t-tests to compare the engagement levels between the two groups. This allowed for an examination of how digital tools influenced students' motivation and engagement with the reading materials.

Qualitative Analysis. The interview transcripts were analyzed using thematic analysis, a method that involves identifying, analyzing, and reporting patterns (themes) within the data (Braun & Clarke, 2006). The thematic analysis was conducted in several stages, beginning with familiarization with the data, followed by coding the data and generating themes related to students' experiences with digital reading tools. The analysis aimed to uncover key insights into how technology affected students' reading habits, their perceptions of digital tools, and the challenges they encountered during the intervention. The open-ended responses from the reading engagement questionnaire were also analyzed

thematically to complement the interview data and provide additional context for understanding the students' motivations and challenges.

Ethical Considerations

This study adhered to ethical guidelines for conducting research with human participants. Informed consent was obtained from all participants, and they were assured that their participation was voluntary and that they could withdraw at any time without consequence. All data collected were anonymized, and participants were assigned unique codes to protect their identities.

Limitations

While the study provides valuable insights into the use of technology in EFL reading instruction, it is not without limitations. The study was conducted at a single institution, which may limit the generalizability of the findings. Additionally, the quasi-experimental design does not allow for full randomization of participants, which may introduce some bias in the results (Anderson-Cook, 2005). Furthermore, the focus on pre-intermediate-level students means that the findings may not apply to learners at other proficiency levels. Future research should aim to replicate this study in diverse settings with different participant groups to enhance the external validity of the findings (Creswel, 2009).

Results

This section reports the findings of the study. The intervention lasted twelve weeks. Findings are structured across three key domains: reading comprehension, vocabulary acquisition, and reading engagement.

Reading Comprehension

To assess the impact of digital reading tools on students’ reading comprehension, paired-sample t-tests were conducted on pre- and post-test scores for both groups. The tests comprised 20 items, including 15 multiple-choice questions and 5 short-answer responses, designed to measure understanding of main ideas, details, and inferences from reading passages aligned with the CEFR B2 level. Table 1 below presents the results.

Table 1: *Paired-Sample T-Test Results for Reading Comprehension Pre- and Post-Test Scores*

Group	Pre-Test Mean (SD)	Post-Test Mean (SD)	t-value	p-value	Effect Size (Cohen's d)
Group D	62.8 (8.6)	76.4 (7.9)	6.14	0.001	0.83
Group T	63.5 (7.8)	70.2 (8.3)	2.98	0.007	0.47

For Group D (n = 35), the mean score increased from 62.8 (SD = 8.6) to 76.4 (SD = 7.9), $t(34) = 6.14$, $p < 0.001$, with a moderate-to-large effect size (Cohen's d = 0.83). Group T (n = 24) improved from 63.5 (SD = 7.8) to 70.2 (SD = 8.3), $t(23) = 2.98$, $p = 0.007$, with a moderate effect size (Cohen's d = 0.47). Both groups showed significant gains, but the digital intervention had a stronger impact.

To compare the effectiveness of digital versus traditional methods, an independent-samples t-test was conducted on the post-test scores. Table 2 below summarizes these findings.

Table 2: *Independent-Samples T-Test Results for Reading Comprehension Post-Test Scores*

Comparison	Group D Mean (SD)	Group T Mean (SD)	t-value	p-value	Effect Size (Cohen's d)
Post-Test Scores	76.4 (7.9)	70.2 (8.3)	2.85	0.006	0.58

The analysis revealed that Group D significantly outperformed Group T, $t(57) = 2.85$, $p = 0.006$, with a moderate effect size (Cohen's d = 0.58). This suggests that digital reading tools were more effective in enhancing reading comprehension than traditional print-based materials.

Qualitative data corroborated these quantitative findings. Students in Group D frequently highlighted the interactive features of digital tools as key to their improved comprehension. For instance, one student remarked, "Highlighting unfamiliar words and seeing definitions right away made the text easier to understand." Another noted, "The videos embedded in the app helped me visualize complex ideas, like historical events in the stories." These responses suggest that immediate access to multimedia resources and interactive annotations enhanced engagement with the

content. Conversely, students in Group T expressed difficulties maintaining focus, with one stating, "Reading long passages on paper felt repetitive, and I often lost track of the main point." Another added, "Without quick explanations, I skipped parts I didn't understand." These comments indicate that the static nature of print materials posed challenges to sustained comprehension, aligning with the smaller gains observed in the quantitative data.

Vocabulary Acquisition

Vocabulary acquisition was assessed through pre- and post-tests that included 15 recognition tasks (matching words to definitions) and 10 production tasks (using words in sentences), targeting 25 new words introduced in the reading materials. Table 3 presents the paired-sample t-test results.

Table 3: *Paired-Sample T-Test Results for Vocabulary Acquisition Pre- and Post-Test Scores*

Group	Pre-Test Mean (SD)	Post-Test Mean (SD)	t-value	p-value	Effect Size (Cohen's d)
Group D	66.3 (8.1)	80.7 (7.4)	6.58	0.001	0.91
Group T	67.1 (7.9)	74.6 (8.5)	3.42	0.002	0.52

Group D's vocabulary scores improved significantly from 66.3 (SD = 8.1) to 80.7 (SD = 7.4), $t(34) = 6.58$, $p < 0.001$ (Cohen's $d = 0.91$). Group T also showed significant progress, from 67.1 (SD = 7.9) to 74.6 (SD = 8.5), $t(23) = 3.42$, $p = 0.002$ (Cohen's $d = 0.52$). These results demonstrate that both groups acquired vocabulary effectively, but the digital tools led to greater gains.

An independent-samples t-test compared post-test vocabulary scores between groups, as shown in Table 4 below.

Table 4: *Independent-Samples T-Test Results for Vocabulary Acquisition Post-Test Scores*

Comparison	Group D Mean (SD)	Group T Mean (SD)	t-value	p-value	Effect Size (Cohen's d)
Post-Test Scores	80.7 (7.4)	74.6 (8.5)	3.01	0.004	0.61

Group D outperformed Group T significantly, $t(57) = 3.01$, $p = 0.004$, with a moderate effect size (Cohen's $d = 0.61$), indicating superior vocabulary acquisition with digital tools.

Qualitative insights reinforced these findings. Students in Group D frequently praised the immediacy of digital features, with one stating, "Clicking a word to hear its pronunciation and meaning was like having a tutor with me." Another noted, "The examples in the app made it easier to remember new words." These responses highlight how digital tools facilitated active vocabulary learning. In contrast, Group T students reported inefficiencies, with one saying, "I had to stop reading to check a dictionary, so I usually ignored new words." Another added, "It took too long to learn words without help." These frustrations correlate with the moderate improvement in Group T's scores, suggesting that traditional methods were less conducive to vocabulary acquisition.

Reading Engagement

Reading engagement was measured using a 15-item questionnaire with a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), assessing cognitive (e.g., focus on content), emotional (e.g., enjoyment), and behavioral (e.g., effort) dimensions. Table 5 presents the mean scores.

Group D reported higher engagement across all dimensions, with means of 3.8 (SD = 0.7) for cognitive engagement, 4.0 (SD = 0.6) for emotional engagement, and 3.9 (SD = 0.8) for behavioral engagement, resulting in an overall mean of 3.9 (SD = 0.6). Group T scored lower, with means of 3.4 (SD = 0.8) for cognitive engagement, 3.6 (SD = 0.7) for emotional engagement, and 3.5 (SD = 0.9) for behavioral engagement, yielding an overall mean of 3.5 (SD = 0.7).

Table 5: *Reading Engagement Questionnaire Results*

Group	Cognitive (Mean, SD)	Emotional (Mean, SD)	Behavioral (Mean, SD)	Overall (Mean, SD)
Group D	3.8 (0.7)	4.0 (0.6)	3.9 (0.8)	3.9 (0.6)
Group T	3.4 (0.8)	3.6 (0.7)	3.5 (0.9)	3.5 (0.7)

Independent-samples t-tests confirmed these differences, as detailed in Table 6 below.

Table 6: *Independent-Samples T-Test Results for Reading Engagement Dimensions*

Dimension	Group D Mean (SD)	Group T Mean (SD)	t-value	p-value	Effect Size (Cohen's d)
Cognitive Engagement	3.8 (0.7)	3.4 (0.8)	2.14	0.037	0.43
Emotional Engagement	4.0 (0.6)	3.6 (0.7)	2.58	0.012	0.51
Behavioral Engagement	3.9 (0.8)	3.5 (0.9)	2.03	0.047	0.41
Overall Engagement	3.9 (0.6)	3.5 (0.7)	2.49	0.015	0.50

Significant differences emerged across all dimensions, with moderate effect sizes. For cognitive engagement, $t(57) = 2.14$, $p = 0.037$, Cohen's $d = 0.43$; for emotional engagement, $t(57) = 2.58$, $p = 0.012$, Cohen's $d = 0.51$; for behavioral engagement, $t(57) = 2.03$, $p = 0.047$, Cohen's $d = 0.41$; and for overall engagement, $t(57) = 2.49$, $p = 0.015$, Cohen's $d = 0.50$. These results indicate that students using digital reading tools (Group D) reported significantly higher engagement than those using traditional print-based materials (Group T), with moderate effect sizes underscoring the advantage of digital tools.

Qualitative data provided nuanced perspectives on engagement. Group D students frequently cited interactive features as motivators. One explained, "The quizzes after each section kept me interested—it felt like a game." Another said, "Tracking my progress made me want to keep reading." However, some reported drawbacks, such as one noting, "Sometimes the app was slow, or I got distracted by notifications." These technical challenges suggest that while digital tools boost engagement, implementation issues can temper their effectiveness. In Group T, students valued the simplicity of print materials, with one stating, "Paper doesn't crash or distract me," yet many found it less stimulating, as another remarked, "After a while, it's just words on a page—I lose interest." These insights align with the quantitative data, indicating that digital tools

generally fostered greater engagement, though not without occasional setbacks.

Discussion

The present study explored the role of technology-enhanced reading instruction in English as a Foreign Language (EFL) classrooms, focusing on the effects of digital reading tools on reading comprehension, vocabulary acquisition, and student engagement. The results of this study indicate that digital reading tools significantly outperformed traditional print-based materials in all measured areas, including reading comprehension, vocabulary acquisition, and student engagement.

One of the key findings of this study was the significant improvement in reading comprehension among students in the digital reading group, as compared to the traditional reading group. The results from the pre- and post-test assessments showed that students using digital reading tools (e-books, interactive platforms) demonstrated a more substantial increase in reading comprehension scores than students using print-based texts. This difference was statistically significant, suggesting that digital reading tools had a stronger positive impact on students' ability to understand and interpret reading material. These findings align with those of previous studies that have examined the role of digital tools in enhancing reading comprehension. For example, a study by (COIRO & DOBLER, 2007) found that students who used digital texts with embedded multimedia resources performed better in reading comprehension tasks, especially in terms of understanding complex or abstract concepts. Similarly, (Borg & Sykes, 2015) found that digital texts provide a more interactive and engaging experience, allowing learners to access supplemental materials such as videos, hyperlinks, and instant dictionary definitions. This immediate access to additional resources facilitates deeper understanding and comprehension of the main content, which likely contributed to the improved scores seen in the present study.

The results of the current study also echo the findings of (Mangen et al., 2013), who demonstrated that e-reading, especially with the help of interactive features, could enhance students' comprehension by helping them engage more actively with the material. However, it is important to

note that while digital tools provided significant benefits for comprehension, challenges such as technical difficulties and distractions did emerge. As noted by (Burtis, 2012), despite the many advantages of digital reading, the technology itself can sometimes detract from learning, particularly when technical glitches interfere with the reading experience. In this study, students in the digital group reported occasional frustration with issues like slow internet connections and difficulties navigating the e-books, which could have affected their ability to focus during reading tasks. This aligns with the concerns raised by (Thompson, 2014), who argued that technological barriers must be carefully addressed to ensure that the advantages of digital reading tools are fully realized.

In terms of vocabulary acquisition, the results of this study also favored the digital reading group. The mean post-test vocabulary score for students using digital tools was significantly higher than for those using traditional print materials. Students in the digital group had greater access to interactive features such as pop-up dictionaries, audio pronunciation guides, and in-context definitions, which likely contributed to their superior vocabulary acquisition.

These findings are consistent with previous research that suggests digital reading tools support vocabulary learning more effectively than traditional print-based methods. (Teng, 2019) conducted a study in which students who used digital devices to read had better vocabulary retention than those who read printed texts. The ability to instantly access definitions and pronunciation helps reinforce word meanings and improves long-term retention. Additionally, (Mason & Bruning, 2001) found that e-readers' immediate feedback mechanisms—such as context-sensitive glosses—helped learners retain and use new vocabulary more efficiently, reinforcing the findings of this study.

The digital group's enhanced vocabulary learning can be explained by the dynamic nature of digital texts, which can offer additional supports (audio, videos, hyperlinks) that are simply not available in print materials. According to (Kucan & Beck, 1997), vocabulary learning is more effective when learners are able to encounter words repeatedly in varied contexts. In this study, the digital tools likely allowed students to encounter and

reinforce new words across multiple modalities (e.g., through text, spoken pronunciation, and visual aids), leading to more robust vocabulary acquisition.

However, it is also essential to consider the possible trade-offs in vocabulary learning when using digital tools. As noted by (GARRETT, 1991), digital tools can lead to passive vocabulary acquisition if learners become overly reliant on immediate dictionary lookups without engaging in deeper processing of the word's meaning and usage. The study did not explore this potential issue, but it is an important consideration for future research. Encouraging students to reflect on and use newly acquired vocabulary in meaningful contexts is a crucial step in solidifying word retention.

The third primary finding of this study was the significant difference in student engagement between the two groups. Students in the digital reading group reported significantly higher levels of cognitive, emotional, and behavioral engagement compared to the traditional group. This difference, with a large effect size, suggests that digital reading tools foster greater engagement with reading tasks. These findings align with those of (Mangen et al., 2013), who found that digital reading tools, particularly those with interactive features, tend to engage students more actively than traditional print-based texts. Digital reading materials can offer personalized learning experiences, allowing students to interact with the content in ways that paper-based texts cannot. For instance, students in the digital group in this study reported feeling more connected to the reading material through features such as multimedia content, immediate access to supplementary resources, and the ability to interact with the text in a non-linear fashion. These features likely contributed to students' heightened motivation and involvement.

However, it is important to note that engagement does not always equate to increased learning outcomes. (Sung et al., 2015) caution that while digital tools can increase engagement, they do not guarantee better academic performance unless they are designed to support the learning objectives. In this study, the digital tools were specifically chosen for their

potential to enhance comprehension and vocabulary acquisition, which may explain why engagement translated into higher learning outcomes.

While the digital group demonstrated higher levels of engagement, students in the traditional group were not without engagement. The qualitative interviews revealed that many students appreciated the stability and focus provided by paper-based texts. As Liu and Huang (2013) point out, some learners may prefer traditional reading methods due to their familiarity and lower cognitive load. In the current study, students who preferred print materials felt that the non-distracting nature of paper helped them concentrate better, especially during longer reading sessions.

The findings of this study have important implications for EFL instruction. First and foremost, the evidence suggests that integrating digital reading tools into language classrooms can significantly enhance student outcomes in reading comprehension, vocabulary acquisition, and engagement. These benefits are consistent with research that advocates for the integration of technology in language learning (Godwin-Jones, 2018; Warren, 2003). By incorporating e-books, online reading platforms, and interactive tools, educators can offer more engaging and effective reading experiences for students.

However, teachers must also be mindful of the challenges that accompany digital reading, particularly with regard to technological issues and the potential for distraction. As noted by (Thompson, 2014), the benefits of digital reading are not automatic and depend on students' ability to effectively navigate and engage with the technology. Therefore, training for both students and teachers is essential to ensure that the digital tools are used effectively and do not detract from the learning experience.

In addition, the study suggests that while digital tools offer considerable advantages, traditional print-based reading materials still have value, particularly for students who may struggle with the distractions and complexities of digital texts. Educators should consider blending both approaches to cater to diverse learning preferences and needs, a strategy that is often referred to as blended learning (Graham, 2005).

Conclusion

This study highlights the substantial benefits of digital reading tools in enhancing reading comprehension, vocabulary acquisition, and engagement among pre-intermediate EFL learners at Kabul University, Afghanistan. The digital reading group, consisting of 35 full-time students, consistently outperformed the traditional reading group of 24 part-time students across all measured outcomes over the six-week intervention. The use of e-books and interactive platforms like Google Classroom provided students with dynamic features—such as instant definitions, multimedia content, and progress-tracking tools—that enriched their reading experience and fostered greater motivation compared to the static nature of print-based materials used by the traditional group. Qualitative insights from interviews revealed that these digital enhancements not only deepened students' understanding of texts and expanded their vocabulary but also heightened their emotional and behavioral involvement in reading tasks, offering a more engaging alternative to conventional methods.

Despite these advantages, the study also underscores the importance of addressing challenges inherent in technology-enhanced reading instruction. Students in the digital group reported occasional frustrations with technical difficulties, such as slow loading times and navigation issues, which sometimes disrupted their focus and diminished the tools' effectiveness. In contrast, the traditional group appreciated the stability and simplicity of print materials, noting that the absence of technological distractions allowed for sustained concentration, particularly during extended reading sessions. However, this stability came at the cost of lower engagement, as print texts lacked the interactive elements that spurred motivation in the digital group. These findings suggest that while digital tools hold significant promise for transforming EFL reading instruction, their success depends on thoughtful implementation, including reliable technological infrastructure and support to mitigate potential barriers.

The implications of this study extend beyond immediate classroom applications, offering valuable guidance for EFL educators seeking to integrate technology into their teaching practices. By leveraging digital

reading tools, instructors can create more interactive and student-centered learning environments that cater to diverse needs and preferences, ultimately enhancing language acquisition. However, the study also emphasizes the enduring value of traditional print materials, particularly for learners who thrive in distraction-free settings or lack access to consistent technology. A balanced approach—often termed blended learning—could combine the strengths of both methods, ensuring flexibility and inclusivity in EFL instruction.

Looking ahead, this research opens avenues for further exploration. Future studies should examine the long-term effects of digital reading tools on EFL learners, assessing whether initial gains in comprehension, vocabulary, and engagement persist over extended periods. Additionally, investigating the scalability of these tools across varied EFL contexts—such as rural settings with limited technological resources or advanced programs with diverse learner profiles—could broaden their applicability. Equally important is the need to develop strategies that address technical challenges, such as improving platform reliability and providing training for both students and educators to maximize the tools' potential. By ensuring equitable access to technology-enhanced learning opportunities, educators can bridge gaps in resource availability and support all learners in achieving proficiency. Collectively, these efforts can refine the role of digital tools in EFL reading instruction, fostering more effective and engaging language learning experiences worldwide.

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