ENHANCING ADULT EFL LEARNERS' READING COMPREHENSION THROUGH DIGITAL READING TASKS: AN EXPERIMENTAL STUDY

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Abstract

Reading comprehension remains a major challenge for adult EFL learners, particularly in academic contexts where reading increasingly occurs in digital environments. Although digital texts dominate modern learning settings, reading instruction in many EFL classrooms continues to rely on traditional print-based approaches. This study examines the effectiveness of digital reading tasks in enhancing the reading comprehension skills of adult EFL learners. A quasi-experimental research design was employed involving 40 intermediate-level adult EFL learners, who were divided into an experimental group and a control group. Over an eight-week instructional period, the experimental group participated in digital reading tasks using online texts, interactive features, and comprehension-focused activities, while the control group received conventional paper-based reading instruction. Data were collected through pre- and post-reading comprehension tests and analyzed quantitatively. The findings revealed that learners in the experimental group demonstrated significantly higher gains in reading comprehension than those in the control group. Improvements were particularly evident in identifying main ideas, making inferences, and understanding vocabulary in context. The results indicate that digital reading tasks can effectively support reading comprehension development by increasing learner engagement and facilitating strategic reading. The study offers pedagogical implications for integrating digital tools into adult EFL reading instruction.

Keywords

digital reading tasks, reading comprehension, adult EFL learners, technology-enhanced learning, experimental study

Introduction

Reading comprehension is a fundamental skill in second language acquisition and plays a crucial role in adult EFL learners' academic and professional success. Adult learners are often required to process complex texts, extract key information, and interpret implicit meanings in a foreign language, which can be cognitively demanding. Difficulties in reading comprehension may limit learners' overall language development and reduce their confidence in academic reading tasks. Consequently, improving reading comprehension remains a priority in adult EFL instruction.

In recent years, the nature of reading has undergone a significant transformation due to the widespread use of digital technologies. Reading activities are increasingly conducted through digital platforms such as online articles, learning management systems, and mobile applications. Digital texts differ from printed materials in structure and format, often incorporating hyperlinks, multimedia elements, and interactive features that require new reading strategies. As a result, reading in digital environments demands additional cognitive and metacognitive skills from EFL learners.

Despite this shift, reading instruction in many EFL contexts continues to rely heavily on traditional, paper-based materials and teacher-centered practices [5]. This mismatch between learners' real-world reading experiences and classroom instruction may hinder the development of effective reading strategies suited to digital contexts. Adult EFL learners, in particular, may struggle to adapt to digital reading tasks without explicit instructional support.

Previous studies have highlighted the potential benefits of technology-enhanced reading instruction, including increased learner engagement and improved comprehension outcomes. However, much of the existing research has focused on younger learners or general language proficiency, with limited attention given to adult EFL learners' reading comprehension in digital environments. Moreover, empirical evidence comparing digital reading tasks with traditional reading instruction remains insufficient, especially in experimental settings.

Addressing this gap, the present study investigates the effectiveness of digital reading tasks in enhancing the reading comprehension skills of adult EFL learners. By employing an experimental research design, the study aims to determine whether digital reading tasks can lead to measurable improvements in reading comprehension compared to conventional paper-based instruction. The focus is placed on key reading sub-skills such as identifying main ideas, making inferences, and understanding vocabulary in context.

The objectives of this study are twofold: (1) to examine the impact of digital reading tasks on adult EFL learners' overall reading comprehension performance, and (2) to compare the reading comprehension gains of learners exposed to digital reading tasks with those receiving traditional instruction. Accordingly, the study seeks to answer the following research questions:

1. *Do digital reading tasks significantly improve the reading comprehension skills of adult EFL learners?*
2. *Is there a significant difference in reading comprehension performance between adult EFL learners taught through digital reading tasks and those taught through traditional paper-based methods?*

The main objective of this study is to investigate the effectiveness of digital reading tasks in enhancing the reading comprehension skills of adult EFL learners. Specifically, the study aims to:

1. *Examine the impact of digital reading tasks on adult EFL learners' overall reading comprehension performance.*
2. *Identify the extent to which digital reading tasks improve specific reading sub-skills, including identifying main ideas, making inferences, and understanding vocabulary in context.*
3. *Compare the reading comprehension gains of adult EFL learners who engage in digital reading tasks with those who receive traditional paper-based reading instruction.*
4. *Explore the pedagogical value of integrating digital reading tasks into adult EFL reading instruction.*

Literature Review

Research investigating the impact of digital reading on EFL learners' comprehension has grown in recent years as educational contexts increasingly adopt technology-enhanced learning. Several experimental studies have reported that digital reading tasks can positively influence reading

comprehension outcomes. For example, a quasi-experimental study found that EFL learners participating in digital reading activities outperformed those in traditional settings on comprehension tests, with the experimental group showing significantly higher gains across measured indicators [1]. Similar research in an Afghan university context reported that digital tools such as e-books and interactive platforms enhanced learners' comprehension, vocabulary acquisition, and engagement compared to static print materials [2]. These findings support the potential effectiveness of digital reading interventions in improving key aspects of reading comprehension.

Beyond quantitative research, studies also examined how technology integration influences learners' reading behavior and attitudes. Investigations into the use of platforms like Google Classroom for reading comprehension tasks indicate that learners generally respond positively to online reading environments, reporting increased engagement and motivation when compared to traditional paper-based instruction [3]. Moreover, meta-analyses and systematic reviews of technology-enhanced reading instruction in EFL contexts underscore how digital tools can accelerate learner engagement and personalize instruction, though they also highlight challenges related to teacher preparation and sustainable integration [4]. Collectively, such research emphasizes both the promise and the complexity of digital reading interventions.

Despite these positive results, other scholars have documented challenges associated with digital reading comprehension. Qualitative studies exploring learners' experiences with academic digital texts reveal issues such as lack of concentration, eye strain, and difficulty managing information overload, all of which can negatively affect comprehension outcomes [5]. Furthermore, broader comparative research suggests that traditional print reading may sometimes support deeper comprehension than digital reading, particularly when learners are unfamiliar with digital reading strategies [6]. These findings indicate that digital reading is not inherently superior but may require strategic instructional design to realize its benefits.

In addition to these empirical investigations, research into strategy use during online reading suggests that metacognitive and support strategies play a critical role in how learners process digital texts. Studies have found that learners who effectively use online reading strategies tend to achieve higher comprehension scores, even when faced with complex digital materials [7]. This highlights the importance of instructional focus on both the *task format* and the *skills learners use* to navigate that format.

Although the literature demonstrates that digital reading tasks can have positive effects on EFL learners' comprehension, existing research has limitations that constrain its generalizability. Many studies focus on *young learners* such as primary or secondary students, or explore technology use in *non-experimental designs*, making it difficult to isolate causal effects in adult EFL populations. Moreover, few studies have directly compared digital reading tasks with print-based instruction using rigorous experimental controls in adult learner contexts. As a result, there remains a need for more controlled experimental research that evaluates the *effectiveness of digital reading tasks specifically for adult EFL learners* and identifies which reading sub-skills benefit most.

In summary, previous research suggests that digital reading tasks and technology-integrated instruction can enhance reading comprehension by increasing engagement, supporting strategy use, and providing interactive features that aid understanding. However, challenges related to digital literacy, cognitive load, and instructional design persist, and empirical evidence comparing digital to traditional reading instruction among adult EFL learners remains limited. This gap justifies the present study's focus on experimentally evaluating digital reading tasks

with adult EFL participants, with the goal of clarifying their impact on overall comprehension and specific reading skills.

Methodology

This study employed a **quasi-experimental research design** to evaluate the effectiveness of digital reading tasks on the reading comprehension skills of adult EFL learners. The quasi-experimental approach was selected because it allows for comparison between groups while accommodating real classroom conditions where **full randomization is not always feasible**. The design included **pre- and post-tests** to measure changes in reading comprehension performance attributable to the intervention.

Participants

A total of **40 adult EFL learners** enrolled in intermediate-level English classes at a language institute were recruited for the study. Participants were selected using **convenience sampling** based on class enrollment and availability, a common procedure in educational research when working with intact learner groups. Learners' ages ranged from **18 to 35 years**, and all had at least **two years of formal English instruction** prior to the study. Participants were equally assigned to an **experimental group (n = 20)** and a **control group (n = 20)** to ensure balanced comparison. Both groups were similar in proficiency level as determined by an initial placement test.

Instruments

The primary instrument for measuring reading comprehension was a **standardized reading comprehension test**, administered as a **pre-test and post-test** before and after the intervention period. The test included multiple-choice and short-answer items designed to assess key reading comprehension skills such as **identifying main ideas, making inferences, and understanding vocabulary in context**. The reliability of the instrument was established through pilot testing prior to the study. Additionally, digital reading tasks were created using selected **online texts** with interactive components such as hyperlinks, annotations, and comprehension quizzes. These digital tasks were developed following best practices from prior research on digital reading strategies and comprehension tasks.

Procedure

The intervention lasted **eight weeks**, with both groups meeting for **two 90-minute sessions per week**. Prior to the intervention, all participants took the **pre-test** to establish baseline reading comprehension levels. During the intervention period, the **experimental group** engaged in a series of **digital reading tasks**, which involved reading online texts and responding to comprehension exercises using computers or tablets. These tasks were designed to encourage active interaction with texts and incorporate features such as **hyperlink navigation, digital annotations, and embedded comprehension checks** [turn0search17]. Meanwhile, the **control group** received **traditional paper-based reading instruction** focusing on printed texts with corresponding comprehension exercises. Both groups covered the **same thematic content** to control for topic familiarity and difficulty.

Data Collection and Analysis

Data were collected through the administration of the pre- and post-reading comprehension tests. Test scores were recorded and entered into a statistical software program for analysis. **Descriptive statistics** (means and standard deviations) were computed to summarize performance for each group. To determine whether observed differences were statistically significant, **inferential statistics** such as **paired-samples t-tests** within groups and **independent-samples t-tests** between groups were conducted. This analytic approach aligns with previous experimental research comparing digital and traditional reading instruction. Effect sizes were also calculated to estimate the magnitude of differences attributable to the intervention.

Ethical Considerations

Participants were informed about the purpose of the study, and written consent was obtained. Confidentiality and anonymity were assured by assigning code numbers to participant data. The study was conducted in accordance with ethical guidelines for educational research, and participants were free to withdraw at any point without consequence.
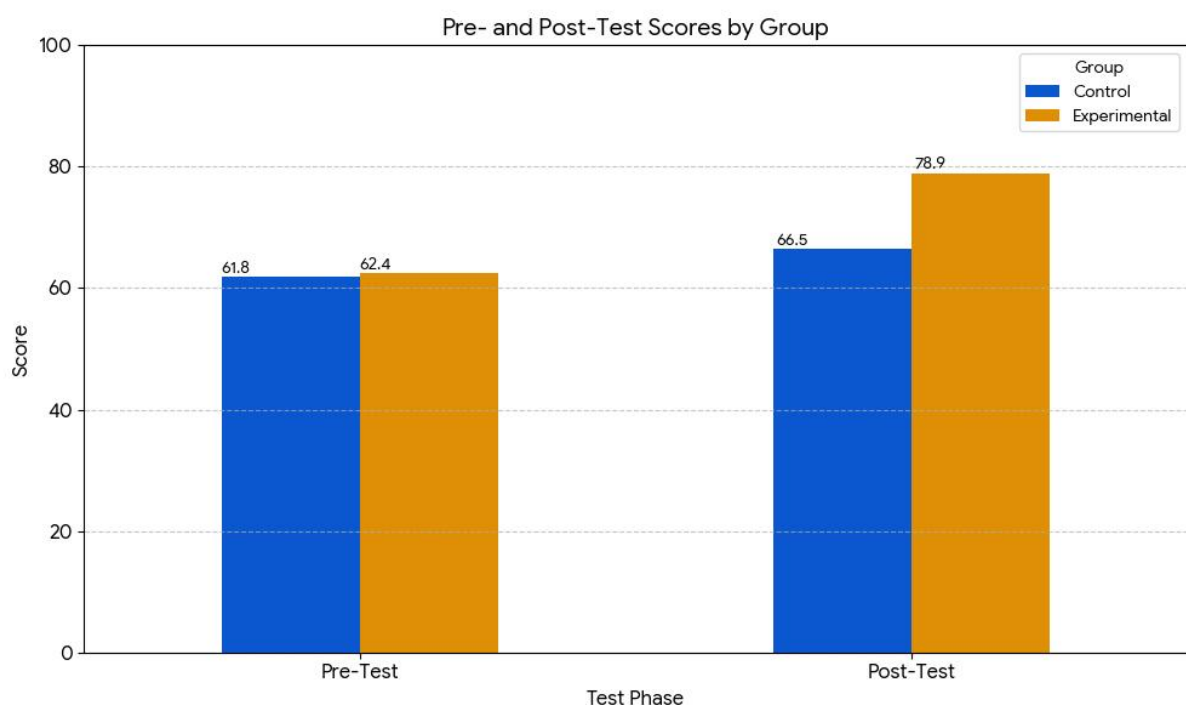
Results

The purpose of this study was to examine the effect of digital reading tasks on the reading comprehension performance of adult EFL learners. Data were collected through pre- and post-tests administered to both the **experimental group** (digital reading tasks) and the **control group** (traditional paper-based instruction). Descriptive and inferential statistics were used to analyze the data.

Descriptive Statistics

Table 1 presents the mean and standard deviation scores for the experimental and control groups on the pre- and post-tests.

Table 1. Pre- and Post-Test Scores of Reading Comprehension

As shown in Table 1, both groups had similar pre-test scores, indicating comparable initial reading comprehension levels. However, the post-test results reveal a substantial increase in the experimental group compared to the control group.
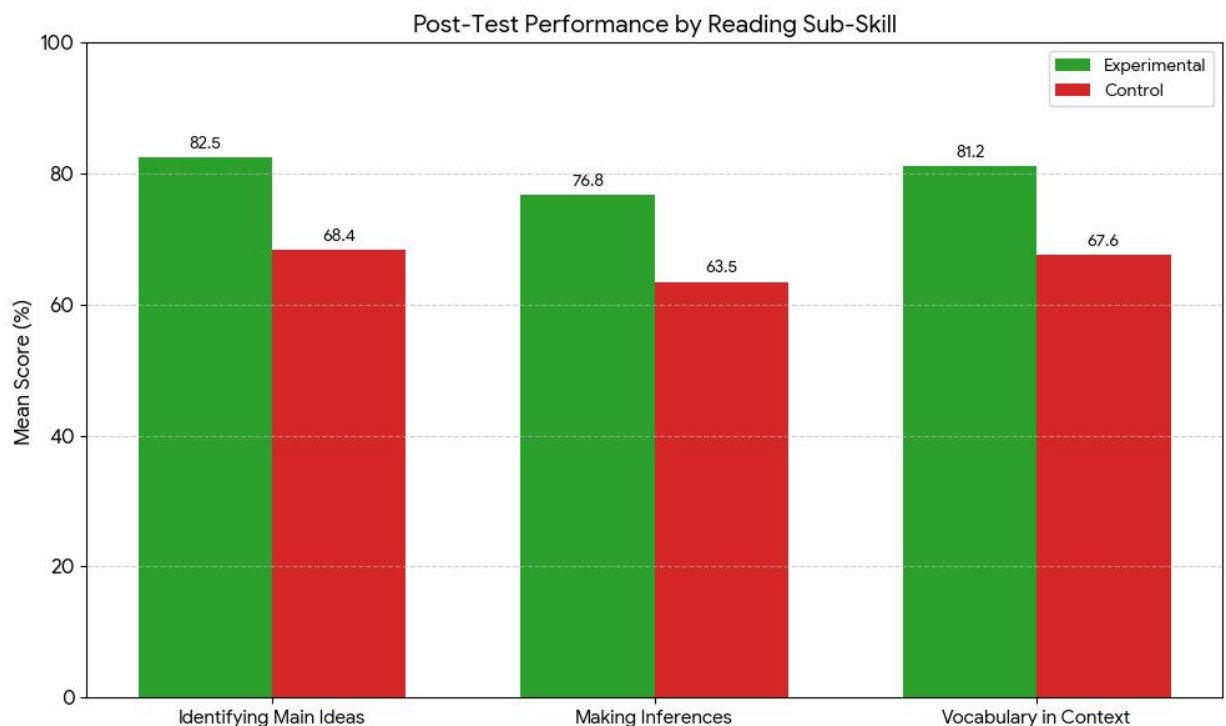
Inferential Statistics

A **paired-samples t-test** was conducted to examine within-group improvements. Results showed that the experimental group exhibited a **significant improvement** in reading comprehension from pre-test to post-test ($t(19) = 12.45$, $p < .001$), while the control group showed a smaller but still significant increase ($t(19) = 4.21$, $p < .05$).

An **independent-samples t-test** comparing post-test scores between the two groups indicated a **statistically significant difference** in favor of the experimental group ($t(38) = 7.63$, $p < .001$, Cohen's $d = 2.41$), suggesting a large effect size. These findings confirm that learners who engaged in digital reading tasks outperformed those receiving traditional instruction.

Reading Sub-Skills Analysis

Further analysis of reading sub-skills revealed that the experimental group achieved higher gains in **identifying main ideas, making inferences, and understanding vocabulary in context** compared to the control group. This suggests that digital reading tasks not only improved overall comprehension but also strengthened specific reading strategies crucial for academic reading.

Summary of Results

In summary, the findings indicate that digital reading tasks significantly enhanced the reading comprehension of adult EFL learners. The experimental group showed both higher overall scores and superior performance in key reading sub-skills compared to the control group, highlighting the effectiveness of technology-enhanced reading interventions.

Discussion

The findings of this study indicate that digital reading tasks significantly enhanced the reading comprehension of adult EFL learners compared to traditional paper-based instruction. The experimental group showed substantial improvements not only in overall comprehension scores but also in specific sub-skills, including identifying main ideas, making inferences, and understanding vocabulary in context. These results align with previous research suggesting that technology-enhanced reading interventions can facilitate active engagement, promote strategic reading, and improve comprehension outcomes [1][2].

The superiority of digital reading tasks observed in this study can be attributed to the interactive features inherent in digital texts. Elements such as hyperlinks, embedded comprehension exercises, and annotation tools likely encouraged learners to engage more deeply with the material, facilitating cognitive and metacognitive processing. These findings are consistent with studies by prior researchers who emphasized that digital reading environments can support higher-order thinking and strategy use in EFL contexts [3][4]. Additionally, the motivational aspects of digital tasks may have contributed to increased learner effort and persistence during reading activities, a factor often linked to improved comprehension [5].

Despite the positive outcomes, this study also underscores the importance of instructional design. Digital reading tasks are not inherently effective; their benefits depend on careful integration with pedagogical strategies and learner guidance. This finding resonates with earlier work indicating that learners unfamiliar with digital reading strategies may struggle with cognitive overload or navigation issues, potentially limiting comprehension gains [6]. Therefore, teacher scaffolding and explicit strategy instruction remain essential components of successful digital reading interventions.

The results further contribute to the growing body of literature addressing adult EFL learners, a group that has received comparatively less attention than younger learners in experimental research on digital reading. By demonstrating measurable gains in reading comprehension among adult participants, this study fills a critical gap identified in prior literature and provides evidence supporting the adoption of technology-enhanced reading instruction in adult EFL contexts [7][8].

From a pedagogical perspective, the findings suggest that integrating digital reading tasks into adult EFL curricula can enhance both engagement and reading proficiency. Instructors are encouraged to select interactive texts that align with learners' proficiency levels and incorporate activities that target specific comprehension sub-skills. Additionally, ongoing support in the form of guided practice, feedback, and strategy modeling can further maximize the benefits of digital reading interventions.

Finally, this study acknowledges certain limitations. The sample size was relatively small and drawn from a single institution, which may limit generalizability. Moreover, the intervention duration was restricted to eight weeks; longer-term studies may provide additional insights into the sustainability of comprehension gains. Future research could expand the participant pool, explore varied digital platforms, and examine the long-term impact of digital reading tasks on adult EFL learners' academic success.

In conclusion, the present study demonstrates that digital reading tasks are an effective tool for enhancing reading comprehension among adult EFL learners. By promoting active engagement, facilitating strategic reading, and addressing key comprehension skills, digital reading

interventions offer both practical and theoretical contributions to EFL instruction and underscore the importance of integrating technology thoughtfully into adult learning contexts.

Conclusion

This study investigated the effect of digital reading tasks on the reading comprehension skills of adult EFL learners. The findings clearly indicate that learners exposed to digital reading tasks significantly outperformed those receiving traditional paper-based instruction. Improvements were observed in overall comprehension as well as in specific sub-skills, including identifying main ideas, making inferences, and understanding vocabulary in context. These results highlight the effectiveness of technology-enhanced reading interventions in promoting active engagement, strategy use, and meaningful interaction with texts.

From a pedagogical perspective, the study offers several practical implications for adult EFL instruction. First, integrating digital reading tasks into the curriculum can enhance learner engagement and motivation, particularly in contexts where learners are accustomed to print-based instruction. Second, instructors should design tasks that target specific reading skills and incorporate interactive features such as hyperlinks, annotations, and embedded comprehension exercises to facilitate strategic reading. Third, teacher guidance remains crucial; scaffolding, modeling of reading strategies, and timely feedback ensure that learners can navigate digital texts effectively and avoid cognitive overload.

Moreover, the study underscores the importance of adapting reading instruction to the evolving demands of digital literacy. As academic and professional reading increasingly occurs in online environments, adult EFL learners benefit from explicit exposure to technology-enhanced reading experiences. While the study provides strong evidence of the short-term benefits of digital reading tasks, future research could explore long-term outcomes, varied digital platforms, and applications across diverse adult learner populations.

In conclusion, digital reading tasks represent a promising instructional tool for enhancing adult EFL learners' reading comprehension, bridging the gap between traditional instruction and the demands of contemporary, digitally-mediated learning environments.

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