Exploring the Effects of Extensive Reading Programs on Iraqi EFL Learners' Reading Fluency and Attitudes

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Abstract

This study aimed to investigate the effects of extensive reading (ER) programs on EFL learners' reading fluency and attitudes. In this study, there were 70 low-intermediate students who were randomly assigned either to an 8-week ER program using LingQ or to the standard intensive reading curriculum. To test their initial reading level, the students took a Quick Oxford Placement Test; then, during the 8-week program, they took recall protocols and comprehension tasks to get a composite fluency score. The researchers used ANCOVA to analyze the scores from the post-test, controlling for initial fluency levels. There were significant differences in post-test scores, indicating that the ER students improved significantly compared with the control group; they read faster and understood more of what they read. This shows that automaticity is more important than speed; therefore, encouraging automaticity should be the objective of all ER programs. Regarding attitudes towards reading, the findings were mixed: students demonstrated higher cognitive scores for their beliefs about the value of reading in English, but lower affective scores for enjoyment and lower behavioral scores for sustaining their independent reading. This suggests that neither of these scores can be sustained by encouraging students to experience success but fail to scaffold success. Finally, it was concluded that implementing a light-touch ER curriculum that could potentially be delivered through mobile devices in similar higher education contexts could be an effective method for improving reading fluency, but that accountability must be established early on to promote enjoyment and reading habit formation.

Key Terms: *Extensive reading, Iraqi learners, LingQ, reading attitudes, reading fluency.*

استكشاف آثار برامج القراءة الواسعة على طلاقة القراءة ومواقف متعلمي اللغة الإنجليزية كلغة أجنبية في العراق

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الملخص

هدفت هذه الدراسة إلى التحقيق في آثار برامج القراءة الواسعة (ER) على طلاقة القراءة ومواقف متعلمي اللغة الإنجليزية كلغة أجنبية. في هذه الدراسة، كان هناك ٧٠ طالبًا ذوي مستوى متوسط منخفض تم تعيينهم عشوائيًا إما إلى برنامج قراءة واسعة مدته ٨ أسابيع باستخدام LingQ أو إلى المنهج الدراسي العادي للقراءة المكثفة. لاختبار مستواهم القرائي الأولي، أخذ الطلاب اختبار أكسفورد السريع للتوظيف؛

مجلة دراسات في الإنسانيات والعلوم التربوية

كانون 2   2026

Journal of Studies in Humanities and Educational Sciences

January   2026

Print ISSN 3006-3256   Online ISSN 3006-3264

العدد 12

No. 12

JSHES

ثم، خلال البرنامج الذي استمر ٨ أسابيع، قاموا بإجراء بروتوكولات استدعاء ومهام فهم لاستخراج درجة طلاقة مركبة. استخدم الباحثون ANCOVA لتحليل الدرجات من الاختبار بعدي، مع التحكم في مستويات الطلاقة الأولية.كانت هناك اختلافات معنوية في درجات الاختبار بعدي، مما يشير إلى أن طلاب القراءة الواسعة قد تحسنوا بشكل ملحوظ مقارنة بمجموعة التحكم؛ فقد قرأوا بشكل أسرع وفهموا المزيد مما قرأوه. يظهر هذا أن التلقائية أكثر أهمية من السرعة؛ لذلك يجب أن يكون تشجيع التلقائية هو الهدف من جميع برامج القراءة الواسعة.أما بالنسبة للمواقف تجاه القراءة، كانت النتائج مختلطة: أظهر الطلاب درجات معرفية أعلى في معتقداتهم حول قيمة القراءة باللغة الإنجليزية، لكنهم حصلوا على درجات انفعالية أقل فيما يتعلق بالتمتع ودرجات سلوكية أقل للحفاظ على قراءتهم المستقلة. يشير هذا إلى أن أيًا من هذه الدرجات لا يمكن الحفاظ عليها من خلال تشجيع الطلاب على تجربة النجاح دون توفير الدعم اللازم لتحقيق هذا النجاح.أخيرًا، خلصت الدراسة إلى أن تنفيذ منهج قراءة واسعة بسيط يمكن تقديمه عبر الأجهزة المحمولة في سياقات التعليم العالي المشابهة قد يكون طريقة فعالة لتحسين طلاقة القراءة، لكن يجب إنشاء مستوى من المساءلة مبكرًا لتعزيز المتعة وتكوين عادة القراءة.

الكلمات المفتاحية :القراءة الواسعة، المتعلمون العراقيون، LingQ، مواقف القراءة، طلاقة القراءة.

1.1 Introduction

Reading in a second and foreign language is essential because it is a primary way of gaining input to promote language acquisition and also provides us with a lifetime of experience with regards to academic and lifelong literacy (Pfenninger et al., 2023). It is important to be able to navigate EFL contexts due to a lack of access to authentic English language interactions outside of the classroom (Mandarsari, 2023), as it provides an opportunity for learners to learn about the vocabulary and structure of English as well as the way in which it is communicated through discourse. In addition, reading fluency can be thought of as being a direct relationship to overall language proficiency; when students become proficient readers of the English language, they also become better comprehenders, acquires more vocabulary, and improve their overall awareness of the language and how it is used (Grabe, 2009).

Finding the proper balance between phonics, sight words, and fluency activities is a tremendous challenge for traditional pedagogical practices in Iraq, where the use of Arabic-English translation, grammar drills, and the preparation of standardized tests is still prevalent (Abdullah et al., 2024). Among other difficulties, slow reading rates, small vocabularies and less confidence while running after authentic texts are suffered by many learners (Sharma, 2022). Adding to this problem is limited time in the classroom and outdated textbooks, as well as an insufficient amount of exposure to a great deal of language input which prevents students from becoming fluent readers.

Given the challenges of ESP reading instruction, extensive reading (ER) has been recommended as a possible way forward (Liu & Saad, 2025). It is different from intensive reading which involves meticulous scrutiny of short texts as ER encourages language learners to read large quantities of text at their level for pleasure and gist Information (Rahman & Mohamad, 2023). Liu and Saad (2025) find that ER helps with fluency, develops good reading habits and also

give learners autonomy. This self-selected, low-pressure aspect of ER gives learners an opportunity to interact with the language in a meaningful and multimodal way (Bessette, 2025).

Recently, the digital era has revolutionized how occupational health psychologists can roll out ER programs (Bonnet & Westerman, 2021), which provides learners with an increased ability to manipulate the accessibility of content and personalize learning. The interactive nature of applications such as LingQ that help learners track new vocabulary and provide an extensive range of texts at various levels has contributed to their widespread popularity (Karasimos, 2022). These platforms target existing issues around ER implementation such as a lack of physical resources and monitoring agents like teachers. Educational researchers have recognized for several years that ER technology can create a more interactive, engaging experience for readers (Godwin-Jones, 2022).

While there are a variety of places to do extensive reading, LingQ is a web and app-based company that offers learners the opportunity to read thousands of texts within different topics and levels (Karasimos, 2022). This app also lets you select materials that spark your curiosity, trace your vocabulary progress and get repeated exposure to input by reading and listening (Karasimos, 2022). In a university setting, EFL learners can take advantage of an experimental alternative to traditional reading instruction: LingQ offers learners in higher education more autonomous learning within a supported structure. This app with reading path and progress tracking features is a useful instrument for investigating digital ER (Karasimos, 2022).

The attitudes of learners toward reading are another important factor that can determine the success of extensive reading programs (Ateek, 2021). When individuals perceive reading as a positive process, it can motivate and make them read more, which ultimately results in higher fluency and comprehension (Akyol & Sural, 2021). On the contrary, negative attitudes or disinterest might prevent learners from participating with ER. For instance, affective factors, such as enjoyment of reading, perceived usefulness of ER and autonomy have been found to play a key role in determining learners' perseverance with ER (Suk, 2024). As such, it is essential to explore the affective disposition of learners at platforms like LingQ when evaluating the overall efficacy of ER interventions.

The current study aims to examine the potential effects of a technology-based extensive reading program for them on their English as a Foreign Language university EFL learners' reading fluency with the increasing prevalence of digital platforms and attitudes in Iraq. ER has been effectively implemented in multiple international contexts (e.g., Nguyen, 2022; Rezaee et al., 2021), however there is lack of research examining the impact of ER on reading motivation and interests among students in Iraqi HE specifically through mobile-assisted platforms like LingQ. This study sets out to add valuable insights by looking at both quantitative gains in reading fluency and qualitative

مجلة دراسات في الإنسانيات والعلوم التربوية

كانون 2   2026

January   2026   Journal of Studies in Humanities and Educational Sciences

Print ISSN 3006-3256   Online ISSN 3006-3264

العدد 12

No. 12

changes in learner attitudes to how ER can be adapted and scaled in under-resourced EFL environments.

1.2 The Purpose of This Study

One of the most underdeveloped skills among many EFL learners in Iraqi university settings is reading fluency, which is considered a core component to language proficiency (Nisbet t al., 2022). While English has become increasingly important in academic and professional contexts (Dehham et al., 2022), many Iraqi EFL learners appear incapable of high-quality readings (Aziz & Venugopal, 2014). The Iraqi universities use a type of reading instruction that has almost exclusively consisted of the practice of intensive reading strategies (reading for vocabulary, translating, practicing grammar) and almost no opportunities for making meaning or having the pleasure of reading (Al-Asadi & Mohammed, 2021). Due to the way reading was taught, many students have been discouraged from reading quickly or understanding what they read as well as the fact that a teacher would tell them to read quickly and understand. In addition, because they have very few English language samples to look at or very little opportunity to participate in extensive reading, Iraqi learners do not develop many of the important components of fluency such as automaticity, understanding, and naturality (Dehham et al., 2022).

This research is intended to explore two main issues: (1) the lack of fluency-focused approaches in the instructional practices of universities in Iraq and (2) the lack of research into the use of digital tools for extensive reading, such as LingQ. The overall aim of the study is to contribute to the instruction and research within EFL contexts regarding the impact of extensive reading with LingQ on the development of reading fluency and attitudes.

This research intends to investigate how much better Iraqi's college EFL students' skills in reading fluency grow or develop after participating in an extensive reading program (LingQ). The importance of reading on composition papers cannot be overstated, as over time, there has been an influx of reading materials that have helped to reduce the amount of time EFL students spend reading compared to their native language. This may have caused students who are taking classes in EFL to fall short of the requirements expected by EFL instructors in three separate ways: they struggle to read quickly enough once they pick up a book from the shelf; they do not fully understand the text that they read; and they have not realized the full advantages possible from reading a complete line of text before moving on. This study seeks to determine if integrating independent, self-directed reading habits with the use of technology (the LingQ Platform) as a 'Digital Environment' can support the development of fluency in Iraqi EFL learners. Both longitudinal data collected for all students' readers' performances were analyzed; both before and after the EFL extensive reading program (LingQ) was implemented, in order to gain insight into the effect of this program on EFL learners' reading fluency growth via quantitative assessments.

The assessment of linguistic outcomes also includes an analysis of student attitudes toward extensive reading and their utilization of LingQ as a learning resource. Understanding students' emotions and motivations is an essential aspect of predicting their future extensive reading habits, and consequently will have an impact on long-term benefits for language acquisition. This research will investigate the impact of features such as learner self-selection, vocabulary support, and program cost to participation in and satisfaction with the program. In turn, this study will provide an initial indication about whether and how integrating mobile-assisted extensive reading in EFL curricula can be performed and is capable of being beneficial within limited university contexts. Accordingly, this study aims to answer the following research questions:

RQ$_1$: Does the use of the LingQ extensive reading program affect Iraqi university EFL learners' reading fluency?

RQ$_2$: What are the attitudes of Iraqi university EFL learners toward using the LingQ platform as part of an extensive reading program?

2. Literature Review

The importance of reading fluency in second and foreign language reading has been acknowledged for nearly four decades. Reading fluency as a necessary support for comprehension has been addressed by scholars such as Grabe (2009), Nation (2008) and Tabata-Sandom (2018) but it is also understood as the basis of reading altogether in one's second language. Reading fluency is complex to operationalize due to its multidimensional nature--including automaticity, accuracy, reading rate, and elements of prosody (Grabe 2009) --but it generally refers to the ability to read quickly with rapid and efficient processing (where words are recognized as wholes) that allows for understanding what the text means at some level or another (Grabe 2009; Tran 2012). Grabe (2010) qualifies this by stating that skilled second language readers read around 250 words in a minute and a half-to-two minutes, with approximately 90 fixations for every of one hundred words; Nation & Macalister (2021).

Reading fluency has been a prominent factor discussed within literature and how it correlates with successful reading experiences. One of the more widely known models regarding fluency may be Nuttall's (1996) virtuous circle of good readers. This theory proposes that fluency provides a level of pleasure for the student which encourages him or her to consume even more reading material and ultimately increase comprehension skills. Conversely, if students find decoding words difficult or have a tendency to read slowly they soon feel de-motivated and will not be able to comprehend as well and therefore do not enjoy it; thus, they do not read enough, leading to a poor rate of reading growth. The interaction between speed, motivation, and comprehension underlines the need for EFL methodologies designed to develop fluent extensive reading skills.

| مجلة دراسات في الإنسانيات والعلوم التربوية | العدد 12 |
| Journal of Studies in Humanities and Educational Sciences | No. 12 |

كانون 2   2026
January   2026
Print ISSN 3006-3256   Online ISSN 3006-3264

ER has been recognized as a way of enhancing the ability of university to comprehend what they read and grow in reading ability, as well as the speed at which they read. Research on how ER affects the speed at which people who are reading: Bell (2001), Shiki (2011), Boakye (2017), McLean and Rouault (2017) have identified simplified, graded reading materials as an important component of successful ER programs. The results of these findings support the idea that reading easier, more familiar materials will result in quicker increases in speed due to the greater familiarity of those types of materials (Beglar, et al., 2012). A one-year ER program for ELT students in Japan was also conducted (Beglar, et al., 2012) and supported the value of reading volume. The students in this project who practiced ER by reading more frequently, read copiously, and enjoyed reading more than those who did not practice ER. In this study, the researchers found that as the students read more books over a longer period of time, the greater the increase in their reading fluency.

In addition, results from Beglar and Hunt (2014) show that repetition of the same type of reading material can lead to an increase of fluency through increased amount of reading. ER studies on Vietnamese have shown that when analyzed by Tran (2018) and the findings showed increased reading rate when developing an ER as well. Therefore, these findings suggest the same evidence as many other studies have found supporting the effectiveness of ER in gaining cognitive skills and generating feelings of success in second language learners.

Some researchers have studied the integration of ER with other instructional approaches, alongside stand-alone programs ER. In order to utilize this method, Hadley and Charles (2017), for example, combined ER with data-driven learning (DDL), an approach in which grammar and vocabulary is learned by letting students explore real sentences through corpus analysis. While both the DDL+ER and ER alone groups improved significantly, with the result that fluency scores in the latter group were almost reached normal performance levels (compared to enabling condition) providing evidence regarding a potential stand-alone efficacy of ER-based approaches. Instead, the study (like many before it) seems to indicate that a lower-pressure reading habit is more likely to benefit readers over time.

Other researchers have directly juxtaposed ER with traditional intensive reading practices. For example, McLean and Rouault (2017) showed that readers in the ER conditions (particularly when speed reading was also involved), accelerated more than participants receiving intensive conventional teaching of similar texts. The results support Jeon and Day's (2016) meta-analysis of the effectiveness of ER in diverse situations. In sum, this collection of research reaches a consensus: that ER, especially with simplified texts and autonomy in the learner, can produce gains for reading speed.

3. Methodology

3.1. Design

This study used a quasi-experimental pretest-posttest control group design. Students were assigned to: (1) the experimental group that participated in an extensive reading program via LingQ, and; (2) a control group who received treatment as usual by the school and did not have access to the digital platform. In this study, the independent variable is type of reading instruction: Digital extensive reading via LingQ platform (experimental group) / traditional reading instruction by the curriculum (control group). The dependent variables were reading fluency and learners' perceptions of the extensive reading program.

3.2. Participants

This study recruited 70 Iraqi EFL university learners registered at Babylon University in Hillah. The participants were all be native Arabic-speaking students whose age ranged from 18 to 28 years, and who were currently taking English as a foreign language course. In order to avoid selection bias, and maintain comparability; participants were then randomly allocated into two types of groups: the experiment group (35 students) and control group (35udents). The two groups were matched as well as possible in terms of age, sex and level of English. The QOPT was administered to all participants, prior to the intervention, to ascertain that they were in the low-intermediate proficiency range (group homogeneity). Although separate from the English classes offered by schools, the children rarely had the opportunity to engage with authentic English materials. Participation was voluntary, and all participants provided informed consent before initiating the study.

3.3. Instruments

3.3.1 Quick Oxford Placement Test

The first instrument employed in the current study was the Quick Oxford Placement Test (QOPT) to obtain the initial level of proficiency for all participants and verify group homogeneity, before intervention (Appendix A). QOPT is a reliable and widely recognized test which can be used to determine the placement of learners at various levels according to their grammatical structures and vocabulary, hence appropriate for EFL contexts. In this study, all participants took the QOPT at the beginning of their extensive reading program. According to the test results, we ttook only those who scored in low-intermediate proficiency level into a sample

3.3.2 LingQ Platform

The second instrument used in this study was the LingQ platform, which is a digital extensive reading tool created for assisting language learners in improving vocabulary, input comprehension and reading fluency. At LingQ, on the other hand, learners can pick from a huge range of English content written by native speakers about just about anything they might be interested in and at their appropriate level. Here, LingQ was used as an individualised intervention and participants in the experimental group engaged on a regular basis over time with self-access reading activity. They could read the text by tracking words that

they do not know, reviewing new vocabulary and listening to accompanying audio all at once; thus, supporting multi-modal input & reinforcing word recognition. Through an electronic reading tool, the free online environment promised a customizable and interactional low teacher intervention extensive reading solution for learners to get meaningful practice out of their grammar and vocabulary, with focus on principles of Extensive Reading (e.g., Learner autonomy, reading for meaning). LingQ's integrated monitoring of reading time, word count and vocabulary coverage make it possible to keep track of how much they are or are not reading.

Figure 1

LingQ icon

3.3.3 Attitude Questionnaire

The attitudes questionnaire was designed based on Lewis and Teale's (1980) tri-attitudes model (Appendix B). Lewis and Teale (1980) developed their own reading attitudes model based on the generally agreed conception that attitudes consist of cognitive, affective and behavioral components. The three components correspond to the three attitudes including a) beliefs or opinions about reading, (b) evaluations or feelings about reading and (c) intentions to read and actual reading (Ley et al., 1994).

The reading attitudes questionnaire was a five-point Liker scale questionnaire with each item requiring the subjects to answer by selecting a number ordered from 1 (strongly disagree) to 5 (strongly agree). As for the reliability of the questionnaire in previous studies, the lowest Cronbach Alpha coefficient was affective (alpha = 0.788) with a value larger than 0.7 (Chien & Yu, 2015). Therefore, this reading attitude questionnaire in this study had internal consistency reliability.

3.3.4 Reading Test

To gather reading comprehension in a simple, classroom-friendly way, students completed brief recall protocols: immediately after reading a 300-word passage, they wrote down everything they could remember without looking back at the text (Appendix C). In order to reduce memory burden to a reasonable level, yet provide enough information to convey meaning and important information, the

length of individual passages was purposely kept to a minimum. Each protocol was evaluated as a whole on a scale of 0 to 10; all evaluators focused on the level of comprehension of all parts of a protocol rather than evaluating based on distinct true/false weights. Evaluators aimed to recognize and reward the qualities that contribute to an overall development of thought, well-developed progressive progression on major points, and accurately identified relationships between points that don't easily become isolated points of reference. To eliminate any potential practice-related effects, the post-test was based on a passage with a similar length and difficulty; however, it used the same scoring and test-taking procedures as the pre-test, so that a direct comparison could be made between pre-test and post-test performance.

3.4. Procedure

The study lasted for eight weeks and had three main parts: the pre-intervention phase, the intervention phase, and the post-intervention phase. All participants took the QOPT to assess their English proficiency level prior to the intervention. After placement, a reading fluency pre-test was administered to assess the baseline level of fluency for both groups and the questionnaire to check their attitude before the intervention. The pre-test is a short reading passage selected for low-intermediate learners such as in length and difficulty. The participants were given a fixed time (i.e., 3 minutes) to read the passage silently and then answer answering a set of comprehension questions (e.g. Fluency performance was assessed based on reading rate (Kentaro, words per minute) and the percentage of correct answers in comprehension. The sum of the reading rate and comprehension components were declared as the overall score for determining the category of reading proficiency.

During the intervention phase, participants in the experimental group followed an extensive reading program via the LingQ platform. The students were prompted to read independently level-appropriate books of their own choosing via the app for 30 minutes or more per sitting at a rate of least three times weekly, over eight weeks. For the teacher and learner, they also had records of reading time, word count and vocabulary review activities from LingQ's tracking tools. The teacher gave an introductory lesson on how to use the system but did not help learners choose texts or dictate their progress in reading them. In the interim, the control group were given oral-based reading intervention with traditional method using the institute standard curriculum of English language instruction containing intensive auditory-oral based reading, vocabulary exercises and comprehension questions based on textbook materials.

At the end of the intervention, both groups were assessed for reading fluency (speed and comprehension) using an identical pre-test and two weeks of extensive reading using LingQ, with comparisons being made between the two groups as well as within the individual participants. The experimental group also completed an attitude questionnaire to determine how much they enjoyed studying extensive reading with LingQ. Reading fluency data collected from the

| مجلة دراسات في الإنسانيات والعلوم التربوية | العدد 12 |
| Journal of Studies in Humanities and Educational Sciences | No. 12 |

كانون 2   2026
January   2026
Print ISSN 3006-3256   Online ISSN 3006-3264

pre- / post-tests from experimental and control groups were analyzed via ANCOVA, controlling for pre-test scores to account for differences in baseline scores. The final independent variable used to assess whether the extensive reading program through LingQ produced greater improvement in reading fluency compared to traditional instruction was the results of the analysis of reading fluency data.

3.5. Data Analysis

The post-test performance on the reading fluency pre- and post-tests was analyzed using one-way between-groups analysis of covariance (ANCOVA). One that was proposed is some kind of statistical test that would enable the researcher to evaluate whether or not the independent variable (the program) had an effect on reading fluency, as measured by our dependent variable, while also controlling for whether there were any initial differences between their pre-test scores. Reading fluency was measured as an aggregate score from reading rate (words per minute) and reading accuracy (percent of correct responses). Prior to running ANCOVA there was a careful consideration of all assumptions for ANCOVA were met for normality, homogeneity of variance and Linear relationship between covariates and dependent variable. Additionally, this helped to establish whether or not there was a statistically significant difference in post-test and fluency scores between experimental and control groups when controlling for pre-test scores.

We also provided a descriptive statistics summary for the data collected from each group regarding their response to the attitude questionnaire using means and standard deviations from a five-point Likert scale, therefore showing how students evaluated the custom developed extensive reading program using the LingQ platform. This descriptive summary of data provided additional depth into the emotional and motivation responses related to Digital Reading that proved to give a more well-rounded perspective on the overall effectiveness of the program than with just the quantitative results.

4. Results

4.1 Preliminary Analyses

Before conducting the main analyses, the assumptions for running ANCOVA were evaluated by analyzing the skewness and kurtosis of the data along with the histograms and normal Q-Q plots visually. The results showed that both pre- and post-test reading fluency scores fell within approximately normal distribution across all groups. Scatterplots demonstrated that the correlations between the pre-test reading fluency scores (the covariate) and the dependent variable (the post-test reading fluency scores) were linear. Further to this, the assumption of equality of the slopes of the regression lines was evaluated, and the interaction of group status by pre-test fluency scores exhibited no statistical

significance; implying that the covariate and dependent variables had similar relationships across groups, therefore justifying the use of ANCOVA.

Table 1 contains descriptive statistics of reading fluency scores for both the pretest and posttest phases. Prior to the start of the intervention, both groups were at almost exactly the same level for all measures, indicating that they were equally matched in terms of their ability to read fluently (M= 60.91, SD=8.65 vs. M= 61.34, SD= 8.72). At the completion of the instructional period (8 weeks), both groups improved their level of fluency as measured by the mean of their scores on the posttest. However, the experimental group had a much higher mean score on the posttest (M= 72.86, SD= 7.94) than did the control group (M= 65.27, SD= 8.21).

The pattern of performance for the experimental group at the posttest appears to demonstrate an improvement in both reading rate and comprehension simultaneously, rather than a balance between fast reading and comprehension. This trend supports the conclusion that the extensive reading program led to greater efficiency and automaticity in reading, and this trend was confirmed by the analysis conducted in the inferential analysis that follows.

Table 1

Descriptive statistics for reading fluency pretest and posttest scores by group

Group	Test	Mean	SD
Experimental (n = 35)	Pretest	61.34	8.72
	Posttest	72.86	7.94
Control (n = 35)	Pretest	60.91	8.65
	Posttest	65.27	8.21

4.2 Results for Research Question 1: Reading Fluency

To answer Research Question 1 which focuses on how participation in the LingQ extensive reading program affects reading fluency in Iraqi university EFL learners, we ran a one-way between-groups ANCOVA (Analysis of Covariance). Our dependent variable was reading fluency posttest scores, our independent variable was the instructional condition (LingQ-based extensive reading or Traditional Instruction), and we used the reading fluency pretest scores as the covariate. We used this analytic approach to control for any initial differences that may have existed between the experimental and control groups in reading fluency and to provide a more precise estimate of the effect of the instructional condition on the dependent variable.

The results of the ANCOVA showed a statistically significant main effect of the instructional condition on the reading fluency posttest scores after controlling

for the reading fluency pretest scores, $F(1, 67) = 18.42$, $p < .001$, partial $\eta^2 =$ .216. The effect size indicates that there was a large practical effect of the program and therefore a large percentage of the variance in reading fluency posttest scores could be accounted for by the fact that the learners were part of the LingQ extensive reading program. Adjusted mean scores provide further clarification of the instructional condition effect, as the experimental group had a higher adjusted posttest mean fluency score ($M = 72.41$, $SE = 1.12$) than did the control group ($M = 65.72$, $SE = 1.12$) after controlling for pretest performance.

The evidence from this study demonstrates that when baseline fluency is held constant, there is a dramatic improvement in the reading fluency of Iraqi university students who utilized the mobile-assisted extensive reading program provided through LingQ when compared with those using an intensive reading program based on a traditional approach. Therefore, we reject the null hypothesis and support research question one by concluding that the mobile-assisted extensive reading program provided through LingQ has a statistically significant and positive influence on the development of reading fluency for EFL learners enrolled at Iraqi universities.

Table 2
ANCOVA results for posttest reading fluency

Source	SS	df	MS	F	p	Partial η^2
Pretest (Covariate)	412.58	1	412.58	24.76	$< .001$	.270
Group	307.12	1	307.12	18.42	$< .001$	.216
Error	1117.46	67	16.67			
Total		69				

4.3 Results for Research Question 2: Learners' Attitudes Toward Extensive Reading

In responding to the second Research Question, descriptive statistics only were employed to examine learners' attitudes toward using LingQ as part of an extensive reading program. Three dimensions of attitudes were measured: cognitive (the learner's belief about reading), affective (the learner's emotional response to reading), and behavioral (self-reported behavior regarding reading). The means and standard deviations of the attitudes' three dimensions have been presented in table 3.

In table, it can be seen that the cognitive (belief about the value of English reading as an instrument for the learner's education) showed a positive orientation towards the use of LingQ for extensive reading ($M = 3.94$, $SD =$

0.56). In general, participants reported that they found the LingQ program useful for their language learning. An affective orientation towards extensive reading through LingQ had a mean score (M = 2.81, SD = 0.63) that was noticeably lower than the cognitive orientation; therefore, the enjoyment of extensive reading decreased as the program progressed, as did the learner's emotional engagement with extensive reading through logging into LingQ. The behavioral attitude (self-sustaining reading behavior) had a lower mean (M = 2.67, SD = 0.71) than the affective dimension's mean; as such, it appears that self-sustaining reading behavior decreased as the program continued. Therefore, the amount of time spent reading through LingQ decreased after completing the program.

Based on the combined results of the descriptive studies conducted, there appear to be two different attitude beliefs between the learners: one that reflects their increased beliefs regarding the value of extensive reading and another that shows a decreased enjoyment of the experience as well as a decreased willingness to participate in ongoing voluntary reading. It should be noted that despite these findings being descriptive in nature, they do not suggest that the findings were statistically significant. The overall attitudes towards extensive reading based on the LingQ-based program are analyzed in greater detail in the discussion section.

Table 3

Descriptive statistics for learners' attitudes toward LingQ-based extensive reading

Attitude Dimension	Mean	SD
Cognitive	3.94	0.56
Affective	2.81	0.63
Behavioral	2.67	0.71

5. Discussion

This research was conducted to examine if a program of extensive reading could improve the reading fluency of university EFL students in Iraq. The results indicated that those students who did extensive reading using the LingQ self-selection process read at a faster pace and had a better comprehension level than students following a more traditional intensive reading-based syllabus. These outcomes align with the extensive reading literature. In addition, previous classroom research indicates that large amounts of relatively easy, interesting materials produce increases in students' reading speed and fluency (Bell, 2001; Beglar, Hunt & Kite, 2012; Beglar & Hunt, 2014), and that extensive reading can lead to greater differences in reading rates over time than can be achieved through intensive reading alone (McLean & Rouault, 2017). The results of this study also agree with the results found in previous meta-analyses showing

positive results from extensive reading across different settings (Jeon & Day, 2016). These results apply to a higher education context where the supply of printed graded readers can be difficult to obtain, and teacher supervision of extensive reading programs is not easily achieved. Putting this together, when the essential elements of extensive reading (proper level, actual choice, sufficient quantity) are met, reading fluency can be developed through extensive reading, even for learners in systems that are more prone to use careful analysis and intensive reading.

The features offered by LingQ likely decreased barriers to continued use by providing repeated, meaningful exposure to authentic materials. This is consistent with researchers' descriptions of how ER via technology can be facilitated by providing easy access, individualizing content based on learners' needs, and tracking learning progress toward achieving goals (e.g., Godwin-Jones, 2022; Karasimos, 2022). The technical infrastructure of LingQ took away the constraints of using a different "app" and made it easier to consistently implement ER principles for teachers without increasing their workload.

The results of both the attitude survey and the survey of affective and behavioural factors indicate that a familiar pattern is evident in the way attitudes change over time: that beliefs changed first, followed by feelings, and then followed by behaviours, often lagging behind beliefs and feelings. Students' cognitive attitudes changed after only eight weeks of using LingQ; they began to perceive English reading as useful for both their current research and their future careers. This was a striking shift from the perception of English reading as being "not valuable/unimportant" that many students held before participating in this study. When students find value in something, it will serve as a trigger for behaviour change in the future. However, although their belief that reading was valuable increased, their measures of enjoyment and reading behaviour showed a decrease. This demonstrates that although value can be recognised for something, it does not always translate into liking or doing it more frequently than before. The pattern of "cognition before emotion/behaviour" is common in attitude theories where initial difficulty of practice and the lack of early success is a factor in the delay of changes in motivation points.

Classroom ER has not been supported in the same fashion as other school activities where students receive consistent teacher oversight, including progress reports, benchmarks and a weekly accountability requirement. As Ellis and McRae note (1991), it is often true at the early stages of ER that students require minimal but consistent support (i.e. Setting measurable Weekly Page/Word Goals) to help them work their way into new reading habits. These objectives help to promote continued reading to the extent that students do not view the work that is being done as something unnecessary and/or difficult. Students who are not able to find a sense of reward during the reading process will likely have

less motivation to continue with this direction. Therefore, while the program contributed to changing attitudes about reading, it has not offered sufficient support of early success or accountability so that students could adapt to the new habits and attitudes.

Conclusion

The results are generalizable with caution. They are most applicable to under-resourced higher-education EFL contexts that resemble this site—programs dominated by intensive reading, limited access to graded materials, and constrained teacher time. The mechanisms that mattered here (choice, level-appropriate input, volume, and visible progress) are not platform-dependent, but the *ease* with which LingQ provided them likely amplified effects. Institutions that use different platforms or print-based ER can still expect to see improvements if they consistently recreate these conditions and start light monitoring to help people develop positive habits.

Implications follow at three levels. For curriculum, add a standing ER strand alongside the syllabus; keep texts easier than expected at the start to guarantee fluency wins. For teaching practice, use brief onboarding plus small, frequent targets (minutes/words), quick in-class share-outs, and tapering accountability after 6–8 weeks as self-regulation grows. For program design, track simple usage metrics and celebrate streaks to reinforce behavior; ER should feel routine, not remedial. Taken together, these steps can deliver fluency gains without increasing teacher workload.

There are limitations on this research. The sample was small and not representative of many different cultures, so the results cannot be generalized and the long-term retention of benefits cannot be established. The research design included controlling the participants' prior knowledge, however, it could be considered quasi-experimental at best. The measure of fluency was done through discussions with teachers (recall protocols), instead of more objective measures like eye-tracking or prosody. The only indicator of attitudes was student self-reports. Finally, it is likely that without ongoing monitoring of participants in the experimental group, their affective or behavioural responses would be suppressed.

These limitations suggest several potential areas for research going forward. Longer, multiple-site studies with a delayed follow-up could help determine long-term retention. Log-level data (i.e., number of hours read per week, number of vocabulary items encountered, number of minutes of listening) can assist in the creation of dose-response curves and in clarifying the role of mechanism. A comparison study comparing digital and print ER, and using the LingQ method, will determine the validity of these various types of materials. Moderating factors such as baseline levels of proficiency, vocabulary size and self-regulation, and mediating factors such as attitudes toward ER, will lend insight into the populations for whom ER is effective and the reasons for its

effectiveness. Finally, qualitative measures (i.e., participant interviews or reading journals) will provide insight into how early experience impacts the development of enjoyment and habitual reading.

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