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The Emerging Digital-Reading Practices of EFL Learners and Their Perceptions of the Effects on Various Aspects of L2 Reading

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Abstract

Second language (L2) readers develop new screen-based reading habits as they learn in an increasingly digital world. This study examines the emerging digital-reading practices (EDRPs) of learners of English as a foreign language (EFL). The study identifies three prominent approaches that influence the digital-reading practices of EFL learners, it investigates how EFL learners perceive the effects of EDRPs on several crucial aspects of L2 reading, and it explores the actual practices of emerging digital-based patterns. In this study, which has an exploratory sequential mixed methods design, the main participants were 111 Saudi English language learners (57 males and 54 females). The triangulation strategy used for the multidimensional methods of data collection included a questionnaire, journal entries, and interviews. Thorough descriptive statistics (means and standard deviations), inferential statistics (two repeated measures of analysis of variances and multiple linear regressions), thematic framework analysis, and several phases of analysis for coding and categorizing the data were all undertaken. These analyses showed that shallower forms of digital reading, selective digital reading, and bouncing reading behavior are three approaches that shape EFL learners' digital-reading practices, and that digital reading had observable adverse effects on nine essential aspects of reading. Implications for practice are foregrounded.

Keywords: emerging digital-reading practices, perceived effect, aspects of L2 reading

Introduction

The current influx of digital texts and the overall growth of the digital reading environment have altered the ways in which language learners read digital English texts, and this has spawned new reading behaviors and patterns. In this increasingly electronic information-saturated environment, a bundle of related digital-reading practices has emerged that is nuanced, idiosyncratic, and steadily growing. Changes in reading behavior have, then, become key issues in the realm of the second language (L2) digital-reading environment, as language learners develop noticeable screen-based reading behaviors.

Today, as technology constantly improves, reading practices are evolving accordingly. Luong (2021) has maintained that, as technology develops, reading habits change daily, causing people to read digital texts differently. These are not incremental quantitative changes such as decreasing volume or frequency; they are qualitative changes. Yusof (2021) also notes that students' reading habits have

changed in line with current technological developments.

To illustrate these facts, it is important to identify developing L2 digital-reading practices and their pervasive effects on the unique aspects of L2 reading. These changes that are emerging in digital reading are attributable to the growing variety of digital reading devices, novel digital resources, and platforms, including smartphones, tablets, dedicated e-readers, laptop and desktop computers, and various forms of social media. Several factors underscore the importance of conducting a systematic and careful empirical investigation of these significant changes in L2 digital-reading patterns. Reading on a screen has now become an essential means of learning a language. Optimizing the L2 reading experience requires closer examination. It is also essential to deepen our understanding of the factors that can enhance or hamper the overall L2 experience regarding digital-reading practices and skills. L2 reading specialists currently know substantially less about the digital-reading behavior in which language learners are engaged than about reading print materials, and sound foundational concepts of L2 digital-reading practices are still limited. L2 reading specialists must gain insight into screen-based reading behavior to empower themselves to facilitate the abilities of language learners to read digital text effectively.

Therefore, the purpose of this paper is to explore the digital-reading practices of learners of English as a foreign language (EFL) and advance the knowledge of the acceleration practices EFL learners use when reading in the digital environment. The general objective of the study is to examine the digital reading behaviors practiced by EFL learners. The specific objectives are to identify three prominent approaches that frame EFL learners' digital-reading practices, investigate how they perceive the effects these practices have on essential aspects of reading, and explore EFL learners' actual reading patterns in digital-reading spaces. Through close examination of this pressing issue, I hope to demonstrate the need to develop alternative practices that support effective L2 digital-based reading and overall reading development in the digital environment. My ultimate goal is to promote reading proficiency among language learners.

Literature Review

Emerging Digital-Reading Practices

Several EDRPs have become principal practices in the digital-reading environment. These have arisen to accommodate the characteristics of digital texts, which lack inconsistency, are multi-modal, and contain hyperlinks that create non-sequential page structures (Pardede, 2019). I would classify the current digital-reading practices into three categories: shallower forms of digital reading, selective digital reading, and bouncing reading behavior.

According to Liu (2005), shallow digital reading refers to a mode of digital reading in which readers spend most of their time browsing and scanning digital texts and therefore read them in a shallower and less focused way. Shallow digital reading covers a range of reading practices including skimming, scanning, browsing, and spotting keywords, thereby reducing the time spent on reading digital texts in depth. Pae (2020) has also stated that online readers are more likely to skim than to read thoroughly.

Selective digital reading within electronic-reading spaces, as indicated by Tewksbury, Hals, and Bibart (2008), refers to readers "who focus on specific content defined by individual interests and needs" (p. 257). Readers tend to bypass certain

parts of digital texts and focus on sections that are of greater interest to them or that they consider relevant. These readers rarely read more than two pages of any digital document, opting to read numerous short digital documents such as text messages and social media posts. They also tend to scan the upper parts of the digital texts horizontally, move down several lines to read across in a second horizontal movement, and then read the first few words vertically (Pernice, 2017). Varga (2020) added that people no longer read entire digital texts but skim through them to find pertinent information.

Another form of EDRP is bouncing. Nicholas et al. (2008) describe this as involving a digital form of reading in which the reader engages in discontinuous, random, and often fragmented reading and looks at about one-to-three pages from among a vast number of digital documents. The key features of bouncing reading behavior are movement within and between texts, jumping from page to page and site to site, skipping portions of text, and jumping between different parts of the text. Baron (2015) has argued that digital reading involves short and light reading that requires no great focus. It is also less well suited to long texts that call for intensive reading, because the interactive features of digital texts distract readers' attention from the content.

Emerging L2 digital-reading practices represent a relatively unexplored area of research in the context of English as a second language (ESL)/EFL. Because of the dearth of empirical studies of L2 digital-reading practices, then, a selection of related studies involving first-language research are included in the literature review.

I-Chia Chou (2012) investigated the on-screen reading behaviors of five ESL learners in different academic disciplines. The results showed that participants tend to apply various digital-reading practices such as skimming and scanning through digital materials, printing out the relevant and important texts for further reading, and not reading the entire digital article on the screen.

Gilbert (2017) examined the online reading behaviors of ESL learners and found that participants engaged in a variety of digital-reading practices such as skimming and scanning digital texts, glancing over the main content of texts, and then pinpointing selective areas of interest. The author indicated that digital reading increased interactive reading, quick reading, browsing, scanning, spotting keywords, and selective and sequential reading, so that readers could quickly map out the content of a web page. These findings are consistent with the results a study by Divya (2018), who investigated reading behavior in a digital environment and found that participants reported engaging in several reading practices while they were reading digital texts. These readers resorted to skimming and scanning the digital text on a continual basis to obtain information that they deemed worth reading and to get through texts more quickly, along with using keyword spotting techniques and reading more selectively. Furthermore, 95% of the participants stated that superficial reading behavior increased because of digital reading and that this enhanced their reading practices so that they were more selective and sequential. A study conducted by Oh et al. (2022) of the digital reading habits of Malaysian EFL learners showed that participants often quickly skip from one text to another using a lot of skimming and scanning.

Impact of Emerging Digital-Reading Practices on Aspects of Reading

Although the perceptions of EFL learners regarding the impacts of EDRP on aspects of reading is an important issue to investigate, it has not been examined in the ESL/EFL literature and studies remain scarce. Most of the available studies regarding these perceptions are related to learner's levels of satisfaction, enjoyment, and

comfort and the positive versus negative perceptions of digital reading.

Loan (2012) examined the impact of Internet surfing on the reading practices and choices of 676 students. The results indicated that a majority of participants found that the digital-reading environment increased their superficial reading but decreased in-depth reading. The results of a study by Gilbert (2014) demonstrated that the multitasking digital-reading habit had a profound effect on ESL learners, leading them to pay only partial attention when reading English-language digital texts. Another study, by Naseri and Noruzi (2016), revealed that digital texts reduced participants' concentrated reading (by 34%) and in-depth reading (by 28%), and a related study by Akbar et al. (2015) assessed the effects of digital texts on the reading rates and comprehension of 40 EFL learners. The findings showed that although e-reading may have accelerated the participants' reading rates, their comprehension levels of the digital texts they read were low.

Divya (2018) also conducted a study on the impact of EDRPs on various dimensions of reading and found that the practices the participants developed played a negative role in their in-depth reading and on the levels of attention they sustained. Many of the participants confirmed that the digital-reading environment negatively affected their reading habits. Bana (2020) also explored the perceptions of 43 Indonesian EFL learners with regard to using the digital-reading environment to develop their reading habits and found that 43% of the participants believed that the digital platform contributed to the development of their reading habits.

The studies reviewed above highlight important findings related to emerging L2 digital-reading practices. However, none of these studies specifically investigated the three prominent categories of current digital-reading practices. The studies also neglected to reveal the effects of the emerging L2 digital-reading practices on multifaceted aspects of reading. Therefore, this review of the relevant research emphasizes an untapped area of research regarding the EDRPs of EFL learners and the consequences or perceived impacts of these on several facets of L2 reading. The current study is designed to achieve this objective and fill this gap in the related research into L2 technology-assisted reading.

Overview of the Study

Being digital natives and users of the current convergent technologies that are increasingly embedded in contemporary EFL learners' language learning experiences and environments, EFL learners tend to approach reading digital English texts on screen with some EDRPs already established. A thorough review of the related literature failed to identify any study that has investigated EDRPs among EFL learners beyond general digital-reading habits. The results of research within the field of EFL indicate that this area of research needs further attention. Furthermore, with the surge of interest over the past few years in the continuing development of digital-reading technologies, more research is clearly required.

Therefore, this study aims to examine the EDRPs of EFL learners. It identifies three prominent approaches that shape the EDRPs of EFL learners, examines the perceptions of the learners regarding the impacts and detrimental effects of EDRPs on several essential aspects of reading, and explores actual practices relating to EDRPs. I hope that this paper will contribute to these goals by enhancing the knowledge about the faster digital-reading practices that EFL learners bring to their experiences of reading digital texts in English. My ultimate goal is to contribute to developing alternative digital-reading practices to support effective digitally-based reading.

My research has tackled three intertwined questions pertaining to the EDRPs of EFL learners and the perceived impacts these have on various dimensions of L2 reading. This study contributes to the small body of work that focuses on this essential issue within the realm of L2 technology-assisted reading research. These topics of interest are embodied in the following five research questions:

1. What are the three prominent approaches that shape the EDRPs of EFL learners?
2. Which of the three prominent approaches that shape ERDPs do EFL learners use most frequently, and which subcategory or subcategories do they use the most?
3. Are the three prominent EDRPs actually used by EFL learners when they read English-language digital texts, and do the learners perceive that the impact of these practices on their reading is firmly established?
4. What are the perceptions of EFL learners concerning the EDRPs and their effects on various aspects of reading?
5. Which overarching reading category or aspect (i.e., reading comprehension, reading engagement, and reading load) is perceived as being the most effective?

Methodology

Participants

This study was conducted in an English department in a Saudi state university, with 111 undergraduate English majors, aged from 22 to 25, with a mean age of 21.5 years, who were enrolled in the College of Languages and Translation. The accessible convenience sample included 57 males and 54 females. The participants were a homogenous group, since they attended the same undergraduate program offered by the English department, and all were native speakers of Arabic. They were also non-native speakers of English and identified as having approximately the same levels of proficiency in English by virtue of their placements in the academic levels of eight of their studies (senior year) in the English undergraduate program (a four-year program), their scores in the Test of English as a Foreign Language (TOEFL), and their instructors' evaluations. All were expected to have attained advanced proficiency TOEFL scores of 90 to 110, and it was confirmed by their instructors that they had reached advanced proficiency levels in reading. In addition, they all had adequate experience with digital reading. Table 1 (see Appendix A) summarizes the participants' demographic characteristics.

Procedures

The data collection and study were performed according to the following procedures. At the initial stage of the quantitative phase, the survey was distributed in three stages. First, all participants received a packet containing a letter describing the purpose of the study, the importance of their participation, a copy of the survey with an assigned four-digit ID code, instructions on how to respond to the survey, and an envelope for returning the completed survey. The ID codes were recorded in a specific file to track those who returned the survey.

The second stage involved sending an e-mail reminder to those who had not responded after two weeks, and the third stage, two weeks later, included a final reminder to those who had not yet responded, along with another copy of the survey.

Of the 85 EFL learners who were surveyed, 70 returned their surveys, for a return rate of 83%. All 70 participants responded to every item on the survey, so there were no missing data. I was available to the participants throughout the data-collection process to answer any questions.

For the qualitative phase, the researcher randomly selected 10 EFL learners from those who had responded to the survey to record their reading practices of digital English texts in a diary, followed by one-on-one, semi-structured interviews. The participants were asked to make daily entries over a 14-day period of every time they read digital English texts for more than 30 minutes. The participants were asked to report their digital reading behaviors and share their perceptions of the impacts of the digital format on several aspects of reading for the particular digital texts they had just read. Each interview lasted approximately 40 minutes, and any variations in the lengths of the interviews were due to the levels of the participants' speaking skills and to individual personalities.

Design Overview

The present study is based on an exploratory sequential mixed methods design. The study commenced with quantitative data collection, followed by qualitative data collection aimed at elaborating on the quantitative results that have been obtained.

The study incorporated standard survey methodologies to identify the EDRPs of EFL learners and the impacts these had on various aspects of reading. The survey mainly addressed three prominent approaches that shape the ERDPs. After an extensive review of the related literature, the researcher developed the survey and used a convenience sample of participants. Simple descriptive and inferential statistical analyses were conducted to examine the data, and the researcher also created a digital reading diary form to acquire more detailed information of the digital reading behaviors of the EFL learners. The digital diary entry data were analyzed using a thematic framework analysis that involved several phases. The semi-structured, post-diary interviews that were conducted with 10 participants explored EFL learners' perceptions of the EDRPs and their impacts on reading ability. These interviews related to English in general, with reference to various reading aspects to complement and ensure the accuracy of the conclusions drawn from the observational data and to verify some of the survey data. The interview data were transcribed, coded, and evaluated for emergent themes.

The use of multiple instruments and data sources provided complementary measures to examine the EDRPs and their perceived impacts on L2 reading and to mitigate the limitations of any single instrument. The triangulation of these systemic, procedural, and contextual data provided a more complete and comprehensive understanding than would have been acquired through mono-method approaches (i.e., quantitative or qualitative) to the area under investigation and hence further corroborated the findings from the different methods.

Development of Instruments

This study collected data using different instruments to examine the EDRPs of EFL learners.

Constructing the Emerging Digital-Reading Practices and the Impact Survey

EFL learners responded to a cross-sectional survey about three emerging digital-reading practices and their impacts on reading. The items were measured on a

4-point Likert scale ranging from 1 (*always* or *strongly agree*) to 4 (*never* or *strongly disagree*).

Section 1. Background Information: demographic information was collected, and participants indicated the amounts of time they spent using digital devices, how much time they spent reading digital materials available in English, and whether they enjoyed reading digital texts.

Section 2. Shallower Forms of Digital Reading: eight statements gauged the participants' views on seven shallower forms of digital-reading practices.

Section 3. Selective Digital Reading: six statements were presented to the participants regarding selective digital-reading practices.

Section 4. Bouncing Reading Behavior: five statements were designed for acquiring details regarding participants' bouncing reading behavior when reading digital texts.

Section 5. Impact of Emerging Digital-Reading Practices: nine statements queried EFL learners about their views regarding the impacts of EDRPs on various aspects of reading, including sustained, deep, focused, and reflective reading, concentration, comprehension, and speed reading.

Instrument Validity and Reliability

To assess the validity of the instrument, a panel of four experts examined it for content, clarity, and appropriateness, and it was revised according to their feedback. Reliability was assessed by calculating Cronbach's alpha for the internal reliability of each subscale. The alpha coefficient was 0.80 for the EDRP scale and 0.85 for the impact of the EDRP scale.

Piloting the Instrument

A pilot study was conducted with 10 EFL learners and six EFL instructors who closely examined the wording, order of the questions, and range of the answers to identify anything that was confusing. Follow-up interviews elicited further details. The instrument was then modified according to its intent and with guidance from the panel of experts and the EFL learners.

Digital Reading Journal

Ten randomly selected participants were given journal forms to record introspective recounts and reflections after reading digital English texts (academic and leisure texts) for more than 30 minutes. Participants were instructed to write one entry per day for 14 days.

For each entry, participants provided general information about the texts they had read, including names, reading session numbers, dates, times, locations, amounts read, text genres, and digital devices. They also logged specific information regarding the times spent reading the texts and the purposes of reading them and gave brief overviews of the texts.

In open sessions, participants were prompted to supply details about their digital-reading practices and comment on the effects these had on several aspects of reading. They were asked to identify effects that related to nine aspects in each reading session (e.g., to rate the effect on their reading comprehension, how well they engaged in reading in-depth, etc.) from 1 (low) to 5 (high). The participants were encouraged to expand on their thoughts about their digital reading habits.

Piloting Digital Reading Journal Form

A pilot test involving the digital reading journal form included four students and four EFL instructors who had strong backgrounds in technology-assisted reading. They were all asked to examine the wording, order, clarity, and feasibility of the form closely to identify anything that was confusing, note any design flaws, and indicate any difficulties they had in completing the form. Interviews were then conducted to elicit further details and feedback concerning such issues. The instrument was refined based on the feedback.

Procedure for Analyzing Digital-Reading Journals

A thematic framework analysis was performed on the journal entries. Themes were identified through a systematic, objective process and were formed through open coding, after which subthemes were connected to the main themes using axial coding. The first author handled the coding (generated from the 140 journal entries), and two independent researchers developed the themes and subthemes. They then compared their results, which improved the trustworthiness, credibility, and validity of their findings.

Interviews

The 10 participants engaged in semi-structured, one-on-one interviews to provide context for their diary data. These interviews were aimed at discovering participants' perceptions of the effects of EDRPs on several essential aspects of reading and which approaches had shaped their EDRPs. The interviews were recorded and each interview lasted approximately 40 minutes.

Pilot Testing the Interview Questions

Pilot interviews were conducted to assess the appropriateness of the interview questions and provide the researcher with suggestions regarding the validity of the research before embarking on the main study. The interview questions were modified using input from the findings of the pilot test.

Procedure for Analyzing Interviews

A textual and thematic analysis was performed after the semi-structured interviews had been recorded, transcribed, coded, and categorized. The interviews generated approximately 45,000 words. The accuracy of the transcripts was validated by comparing the recordings to the written transcripts.

An initial coding phase for the analysis involved clustering similar topics, and a focused phase included abbreviating the topics as codes and assigning those codes to the appropriate segments and then coining descriptive words for topics and translating these into categories. A grouping phase involved placing related topics together, after which a final phase included assigning the related topics or categories to the emerging themes. A colleague also examined the transcripts while following the same procedures to arrive at possible categories and themes. The researcher and colleague agreed on similar categories and themes.

Results

The following three sections delineate the study's results. The first presents the findings the data revealed about the EDRPs of EFL learners, the second reviews the journal entries, and the final section reports on the results of the interviews.

Data Analysis

The survey data for all 19 of the 4-point Likert scale items (1 = *never* to 4 = *always disagree*) and the data for the effects of the EDRPs, including nine 4-point Likert items (1 = *strongly agree* to 4 = *strongly disagree*), were imported into and analyzed using SPSS v25 (IBM Corp., Armonk, NY). Descriptive statistics (means and standard deviations) were used to summarize the survey responses and the composite scores of the subscales. The first group of survey items concerned three subscales of emerging digital-reading practices: shallower forms of reading, selective reading, and bouncing reading behavior. The composite score for each reading practice subscale was computed by averaging the scores for the associated items, and descriptive statistics were used to calculate the composite scores of each subscale. The theoretical ranges of the scores (subscales and overall) were from 1 to 4; higher scores indicated that EFL learners used shallower forms of digital reading, selective digital reading, and bouncing reading behavior more frequently. The second group of survey items included three areas regarding the effects of EDRPs: engagement, load, and comprehension. For each subscale, a composite score was computed by averaging the response scores for the associated items. The composite scores ranged from 1 to 4; higher scores indicated the more negative effects that EDRPs had on each subscale. Cronbach's alpha values were used to determine their internal reliabilities.

Two repeated measures analyses of variance (RM ANOVAs) were conducted and used to determine whether differences existed between the scores of the three subscales of the EDRPs. The subscales measured participants' perceptions regarding how often EFL learners used these subscales. Through this process, the RM ANOVAs showed whether there were statistically significant differences in the use of the three approaches that shaped EFL learners' EDRPs. These RM ANOVAs would, then, be able to show which approach was used statistically significantly more often than the others (or if there was no statistically significant difference in their use).

The normality assumption (checked through quantile-quantile [QQ] plots) and sphericity were satisfied for the RM ANOVAs (Mauchly's tests of sphericity were not statistically significant: $p = 0.941$ for the three subscales of EDRPs; $p = 0.120$ for the three subscales of the effects of EDRPs).

Three multiple linear regressions were also conducted to determine the strength of the relationship between two or more predictor variables and one criterion variable and to help in understanding the way a criterion variable changes as the predictor variable(s) change(s). The three criterion variables were the subscales of the effects of EDRPs: engagement, load, and comprehension. The three predictors were the subscales of the EDRPs. All assumptions for the multiple linear regressions: independence of observations (Durbin–Watson statistics were 2.283, 2.027, and 2.048), linearity (checked via scatter plots), normality (checked via QQ plots), and homoscedasticity (checked via residual plots), were satisfied, and there was no multicollinearity (variance inflation factors = 1.324, 1.506, and 1.366). For all tests, a *p-value* less than 0.05 indicated significance. The *p-values* were two-sided.

Tests of the Research Questions

Results for Research Question (RQ)1

RQ1 examined the three prominent approaches that affect EFL learners' EDRPs. The composite score for each subscale ranged from 1 to 4; higher scores indicated more frequent use. Table 2 (see Appendix B) presents the descriptive statistics for the L2 EDRP. The mean score for the shallower forms of reading was calculated to examine EFL learners' use of this practice. The results suggested that

EFL learners often used shallower forms of reading (the mean response scores ranged from 2.27 to 3.01). In addition, the EFL learners frequently read digital texts more selectively than print materials (the mean response scores ranged from 2.46 to 3.05). Results were similar for bouncing reading behavior (the mean response scores ranged from 1.89 to 3.38). Furthermore, as shown in Figure 1 (see Appendix C), the participants used selective digital reading slightly more often ($M = 2.71$, $SD = 0.61$), followed by shallower forms of reading ($M = 2.65$, $SD = 0.47$) and bouncing reading behavior ($M = 2.47$, $SD = 0.54$).

Results for RQ2

RQ2 asked about which of the three prominent approaches that shape EDRPs and which subcategory (or subcategories) EFL learners used most frequently. The results of the RM ANOVAs indicated a statistically significant difference in the perceptions regarding the three approaches that shape EDRPs (Wilks' lambda = 0.841, F (2, 108) = 10.187, $p < 0.001$). Pairwise comparisons showed no statistically significant differences between shallower forms of digital reading and selective digital reading (F (1, 109) = 1.333, $p = 0.251$). However, there were statistically significant differences between shallower forms of digital reading and bouncing reading behavior (F (1, 109) = 10.908, $p = 0.001$) and between selective digital reading and bouncing reading behavior (F (1, 109) = 19.410, $p < 0.001$).

Results for RQ3

RQ3 addressed the EFL learners' perceptions of EDRPs and their effects on various aspects of reading. Table 3 (see Appendix D) presents the descriptive statistics regarding the EFL learners' perceptions of the effects of EDRPs on various aspects of reading. The results showed that participants believed they could not sustain prolonged engagement in reading, and lacked the ability to read deeply and the motivation to read reflectively when reading digital texts (the mean response scores ranged from 2.55 to 2.87). The results for the effects of EDRPs on reading load (the mean response scores ranged from 2.47 to 2.93) indicated that participants felt they were reading with less concentration and were distracted when reading digital texts. Furthermore, they strongly agreed that online reading was physically and mentally taxing, and the effects of the EDRPs on reading comprehension were apparent (the mean response scores ranged from 2.54 to 2.99).

The results showed that participants had less understanding of digital texts they read, had decreased abilities to recall information accurately from them, and read them more slowly. These findings (presented in Figure 2; shown in Appendix E) revealed that EDRPs adversely affected several aspects of reading including, in particular, reading engagement ($M = 2.70$, $SD = 0.70$), reading load ($M = 2.69$, $SD = 0.68$), and reading comprehension ($M = 2.74$, $SD = 0.69$), and that reading comprehension was perceived to be slightly more affected than engagement and load. The results of the RM ANOVAs indicated that there were no statistically significant differences in the perceptions regarding the three effects that EDRPs have on reading comprehension, reading engagement, and reading load (Wilks' lambda = 0.993, F (2, 108) = 0.356, $p = 0.701$).

Results for RQ4

RQ4 examined the overarching category or aspect of reading (i.e., comprehension, engagement, and load) that the participants perceived to be the most affected. Multiple linear regressions were performed to determine the effects of the

three subscales of EDRPs (shallower forms of reading, selective reading, and bouncing reading behavior) on the three overarching effects of emerging digital reading practices (engagement, load, and comprehension). The regression results are presented in Table 4 and shown in Appendix G.

The R^2 ranged from 0.02 to 0.10, indicating that 2% to 10% of the total variation in the criterion variables could be explained by the three subscales of EDRPs.

For reading engagement, the contribution of the predictor for bouncing reading behavior regarding the effects of EDRPs on reading engagement was statistically significant (t (106) = 2.017, p = 0.04). A statistically significant positive relationship was found between the effects of EDRPs on reading engagement and bouncing reading behavior (B = 0.27, SE = 0.14). The participants who used bouncing reading behavior more frequently were more likely to perceive that EDRPs had greater effects on reading engagement. The results for the other two predictors, shallower forms of digital reading (t (106) = −0.695, p = 0.489) and selective digital reading (t (106) = 1.511, p = 0.134), were not statistically significant regarding the effects of EDRPs on reading engagement.

With respect to the results of predictors for reading load, those for selective digital reading (t (106) = 2.132, p = 0.035) were statistically significant regarding the effects of EDRP. A statistically significant positive relationship was found between the effects of EDRPs on reading load and selective digital reading (B = 0.27, SE = 0.13). The participants who used selective digital reading more frequently were more likely to perceive that EDRPs had greater effects on reading load. The results for the other two predictors, shallower forms of digital reading (t (106) = −0.035, p = 0.973) and bouncing reading behavior (t (106) = −0.042, p = 0.967), were not statistically significant regarding the effects of EDRPs on reading load.

For reading comprehension, the results of all three predictors, shallower forms of digital reading (t (106) = −1.043, p = 0.30), selective digital reading (t (106) = 0.673, p = 0.502), and bouncing reading behavior (t (106) = 0.946, p = 0.35), were not statistically significant regarding the effects of EDRPs.

Analysis of Journal Results

The analysis of the general information that participants provided in their journal entries revealed that they read digital English texts primarily on weekends, at home, and in the evenings. Participants read a variety of genres of digital texts. They also used an array of devices, such as laptops and iPads, followed by mobile phones, and, least often, desktop computers.

The key findings from the journal entries were a set of digital-reading practices. The participants reported skimming over digital texts to get the main ideas, reading the first parts and skipping to the last parts, browsing rather than reading all of the content, and switching back and forth between screens or digital pages.

With respect to their perspectives regarding the effects of digital reading on different aspects of reading, the participants overwhelmingly indicated that their in-depth reading had decreased, and they had difficulty maintaining their concentration while reading on digital devices. They also noted that reading digital texts reduced their abilities to read reflectively and limited their recall of information. The participants also reported eye strain

Table 5 (see Appendix F) illustrates the participants' ratings, from 1 (low) to 5 (high), of the effects that reading digital texts had on their abilities in each of the nine aspects of reading during each reading session they performed. The table shows that,

on average, 1.95 of the rated responses indicated that they could sustain reading digital texts, and only .90 could concentrate. The results were the same regarding the participants' abilities to comprehend (1.97), engage in in-depth reading (1.60), use reflective reading (2.00), and recall what they had read (2.00). The participants were also very distracted when reading on digital screens (4.90), felt taxed (4.90), and read more slowly (4.70). Overall, participants indicated lower confidence in reading performance when reading digitally.

Analysis of the Interview Results

Participants indicated that they read digital texts quickly instead of intensively—primarily browsing, scanning, and skimming—with decreased concentration and engaged in more selective reading practices. They also reported adopting power-browsing behavior that reduces the time spent on reading. One participant commented, "I often browse pages rapidly and only read about 20% of the content on an average page." Another said, "I tend to skim-read and scan most digital texts in order to get through it fast." Participants reported habits such as reading the first part and skipping to the end, engaging in cross-reference reading, devoting less to reading onscreen, and focusing on stationary chunks of the digital text. A participant said, "I read only the content that interested me and also, I read the first part and skip to the last part."

The participants' answers identified various concerns or subtle distinctions that induced a preference for digital texts or vice versa. Availability, accessibility, and portability were highlighted. One participant explained, "I like reading digital texts because I can carry digital texts around and read them anytime I want." That digital texts are easy to locate and searchable were other factors in participants' preference. Digital formats also offer readers the ability to adjust font sizes, change background color or typeface, take notes, copy and paste content, access a built-in dictionary, hear audio translations, and consult glossaries. Interactive features and other responsive capabilities are unique advantages for reading on screens. Participants also pointed to other non-linguistic factors that enhance the digital reading experience, including the physical environment, context, and even reading position.

However, the participants also noted potential drawbacks to digital reading. Their greatest concern was the distractions caused by apps, emails, games, websites, social media posts, and pop-up advertisements, all of which interrupt reading. Participants also stated that reading on screens resulted in visual fatigue and discomfort, which made them appreciate reading paper texts. They repeatedly reported that the nonlinear structure and fragmentation of digital texts can disorient them, which made finding their place while reading digital texts difficult. Moreover, the absence of any tactile experience afforded by reading a paper text is a major concern. One participant indicated: "When reading digital texts, I can't touch, fold, or turn the paper or flip back and forth." Another participant criticized current digital reading practices: "I think that the new reading habits that some English learners apply when reading digital texts detract them from their ability to read deeply, decrease their ability to concentrate, and lead to the tendency to skim-read and hop from one source to another without much understanding of what they're reading digitally."

Most participants commented that such digital reading habits are not favorable to quality reading practices. Some indicated that such reading behaviors are acceptable only when the purpose is to locate specific information, when they read short documents (e.g., emails), or when they read casually (e.g., news and

entertainment). However, those digital reading habits should be avoided when the reading task requires deep concentration or when reading academic texts, schoolwork, or long texts for pleasure reading. Some participants added that digital reading habits will make shallow reading the norm. Those habits reportedly also interfered with the development of deep reading skills, including critical analysis and inferential thinking.

The participants were divided into three groups based on their responses regarding how digital reading affected their general reading ability. Some indicated that they perceived no effects, while others stated that digital reading negatively impacted their overall reading abilities. The third group indicated that their reading abilities had improved because of the availability of authentic digital texts, and that this helped them to enhance their knowledge of English vocabulary and structure.

The participants also reported that digital reading decreased their in-depth, concentrated, and reflective reading, the amounts of attention they sustained, and their information retention and recall and made them feel exhausted but also increased their reading speeds. They attributed their inability to sustain prolonged engagement to several factors, including distraction, eyestrain, discontinuous reading, the fragmentary nature of digital texts, and boredom. One participant remarked that, "I found it difficult to sustain my attention while reading digital texts on a screen because of distracting features that are simply entertainment." According to another, "I can't spend more than 15 minutes reading a text on a screen, and I always skip lines when reading texts on computer screens."

The same was true with respect to concentration. Additionally, approaching digital reading in a low-effort mode caused participants to concentrate more shallowly. One participant noted that, "I can't concentrate while reading a text on a tiny screen" and another that, "I often don't put much effort into reading digitally." Navigational difficulties also subtly inhibited their reading comprehension.

The participants overwhelmingly affirmed that digital reading had sharply decreased their in-depth reading and attributed this mainly to browsing, scanning, and hunting for keywords, and scrolling through lengthy texts. Other potential issues were the unreliability of digital texts and slipping into a shallow-reading mindset while reading through them.

With respect to retaining what they read digitally, participants reported that it was slightly more difficult for them to remember what they had read for the following reasons: the pages seem infinite, there is no physical reference point, and smaller screens make digital texts less memorable. One participant said that, "I find it difficult while using digital reading platforms to recall important facts fast and effortlessly."

In terms of reflective reading, the participants reported two different perspectives. One group said digital reading encouraged reflective reading because they could share the information and consult other related sources, and because it forced them to reread, analyze, and evaluate sources and make constant connections to their progress in the text. The other group indicated that digital reading did not invite them to reflect on content. When reading digitally participants tended to adopt an entertainment mindset that could not be overcome.

Participants also found that screen-based reading exhausted them and resulted in negative health effects, including eyestrain or screen fatigue, headaches, and blurred vision, all due to lighting and screen glare, which make it more cognitively taxing.

However, participants agreed on the positive impact of digital texts on their reading speed rates because they do not read the entire texts because the sheer volume

of information online invites fast reading. Reading speed is also enhanced by the effortlessness of browsing and moving between pages.

Discussion

The findings of this study provide considerable insight into L2 EDRPs and also verify the rather sparse literature on L2 reading practices on digital devices and suggest themes that indicate several new dimensions of and directions for EDRPs. Because of space constraints, this section presents a consolidated view of the major findings.

The results of the survey suggest that participants in the study often used shallower forms of reading for digital texts, frequently read these more selectively, and engaged in habitual bouncing reading behavior. The participants used selective digital reading slightly more often, followed by shallower forms of reading and bouncing reading habits. The findings also revealed that EDRPs adversely affected several aspects of reading, particularly reading engagement, load, and comprehension.

The journal entries and interviews also revealed that the three approaches that shaped the EDRPs among EFL learners who participated in the study were shallower forms of digital reading, selective digital reading, and bouncing reading behavior. Availability, accessibility, portability, and various textual affordances were identified as unique characteristics that led participants to prefer digital reading environments. However, distractions, visual fatigue, the fragmentation of digital texts, and reduced tactile experience were among the distinct features that made them uncomfortable with reading digital texts.

The new forms of digital-reading patterns that have been found to be associated with the three approaches mentioned above may stem from several factors. First, EFL learners, as part of the larger group of new digital natives who are well-versed in emerging technologies, might not exert as much mental effort while reading on digital screens. Second, the EDRPs that are identified are used as a way to cope with information overload or massive reading load. Hooper and Herath (2014) observed that having a large amount of digital information available resulted in skim reading, scanning, browsing, and hopping between texts. These behaviors also increased reading speeds and promoted more selective and discerning reading. Third, EFL learners may view reading digital texts as less serious than reading print materials. Fourth, as Divya and Haneefa (2016) pointed out, language learners view reading digital texts as part of searching rather than of engaging in thoughtful reading, and they therefore become viewers instead of readers. These findings corroborate those of I-Chia Chou (2012), Gilbert (2017), and Divya (2018) who all found that ESL and EFL learners engaged in several reading practices while reading digital texts, including skimming and scanning the texts, selecting areas of specific interest to them, and reading more sequentially.

Some participants indicated that digital reading had no effect on their general reading abilities, while others pointed to either negative or positive effects of digital reading. Their perceptions of how EDRPs affect several essential aspects of reading overwhelmingly suggest that digital reading adversely affects the nine essential aspects of reading. Texts in digital spaces may also prevent EFL learners from intuitively navigating and mentally mapping the texts, and this may impede cognitive processing because screen-based reading is more physically and mentally demanding. Schwabe et al. (2022) argued that as readers perceive digital reading devices as

platforms for superficial reading they might not mobilize the cognitive resources needed to read these texts in sufficient depth. Furthermore, according to Lange (2019), splitting attention between different modes of presenting information in a digital reading environment may hinder the process of reading digitally.

Implications

The study's findings have important pedagogical implications. To optimize the reading of digital texts and help EFL learners develop effective digital reading behaviors, training programs must be developed for both EFL teachers and EFL learners. EFL teachers need to become familiar with the nature of digital reading, the characteristics of second-language digital reading environments, and the capabilities and features of digital text. Furthermore, to be able to engage EFL learners with digital texts, teachers should acquire knowledge about digital reading tools, how digital reading devices operate, and the necessary techniques, such as navigating and surfing, reading strategies, and dispositions that are unique to reading in digital environments. Teachers should also have a firm grasp of the best practices for teaching digital reading strategies and integrating digital reading into their instruction. They must also be able to model digital reading and demonstrate the skills that are necessary for reading digital content effectively. Pardede (2019) asserted that EFL teachers need to be adequately trained to be able to facilitate EFL learners' screen-reading behaviors. Coiro (2020) also emphasized that students require different kinds of training to excel in today's increasingly digital reading environment and to interact with multimodal features

Teachers need to provide models, guidance, and plenty of time for learners to practice each new skill that is unique to digital reading. Doing so will equip EFL learners with the tools they need to develop strategic digital reading behaviors that will become second nature to them. Learners should also be trained to take full advantage of the capabilities of digital texts. The successful implementation of a training program for EFL learners is expected to result in better reading comprehension and increased focus along with deeper engagement with digital text and improved deep-reading strategies and self-control for maintaining focus in the digital reading environment. Adequate training is also expected to help learners get rid of various ineffective screen-based reading patterns such as skipping around, rapid browsing, scanning, one-time reading, keyword spotting, more selective reading, less concentrated reading, and deficits in sustained attention.

Lim (2020) asserted that digital reading skills are not developed incidentally, and Al-Seghayer (2020) has also observed that EFL learners lack the knowledge and awareness of how to read effectively in screen-based environments. They are unaware of the numerous best practices of digital reading, of their potential and limitations, and of the skills required in the digital space. Therefore, they must be taught to apply specific skills.

Another pedagogical implication is that EFL teachers need to provide learners with numerous opportunities to spend time reading English-language digital texts, to facilitate their digital-reading practices and an understanding of the nuances of digital reading. Reiber-Kuijpers et al. (2021) argued that the more people read in a digital environment in a second language, the more quickly they develop effective digital reading habits in that language. According to Delgado et al. (2018), difficulties in digital reading may be reduced when readers gain sufficient experience with digital technologies.

Equally important is developing digital reading assessments that provide

accurate information about learners' levels of development and pinpoint their strengths and weaknesses in the context of digital reading.

Limitations and Considerations for Future Research

In spite of the best of attempts to minimize all limitations that might creep in during the course of the research, the study has certain constraints. It did not consider some sets of variables, such as age, gender, language, profession level, educational level, and types of text, that are connected specifically to reading in the digital environment and that might have contributed to the EDRPs. The study also took a holistic view of digital-reading practices and their impacts on reading, without entertaining specific platforms of digital devices. The current study focused only on the emerging reading practices of digital English texts without any examination of the process and consequences of reading on the digital screen. This study was also limited to identifying the EDRPs among Saudi adult EFL learners, and it is, therefore, difficult to discern whether its findings are applicable and able to be generalized to other age groups and EFL contexts.

This study opens up many potential directions for future research, which can investigate possible extraneous factors that may have contributed to the EDRPs of the EFL learners and to those that led to changes in reading behaviors in the L2 digital-based reading environments. These factors might relate to variations in readers, texts, task dimensions, EFL digital readers' experiences and awareness of digital texts, reading purposes, lengths of the digital texts under study, and the nature of the tasks. New research can also focus on how the cognitive, psychological, or mental processes involved converge to influence the development of digital-reading practices. It would also be fascinating to find out whether the most recently developed digital reading devices influence EFL learners' digital-reading practices. Future research should explore and compare the feasibility of digital reading devices in fostering more effective digital-reading practices and helping EFL learners read English digital texts effectively and efficiently.

Conclusion

This study addresses the untapped research area of EDRPs and the effects that these practices are perceived to have on L2 reading. The study provides valuable new insights into three prominent forms of digital reading that shape EFL learners' digital-reading practices. Furthermore, it reports on how learners perceive the critical effects these practices have on several crucial aspects of L2 reading and identifies the actual practices involved in participants' emerging digital-based reading patterns.

There is still much to learn about L2 onscreen reading behavior in all of its complexities and with regard to numerous related aspects. The findings of this study should serve as a springboard for L2 practitioners and, in particular, for those who seek to formulate efficient practical digital-reading practices that will assist language learners in their efforts to read English digital texts efficiently. As a baseline study, this research opens potential avenues for future research on emerging L2 digital-reading practices.

REFERENCES

Akbar, R., Taqi, H., Dashti, A. and Sadeq, T. (2015). Does E-reading enhance reading fluency? *English Language Teaching*, 8 (5), 195–207. DOI:10.5539/elt.v8n5p195

Al-Seghayer, K. (2020). Investigating the adequacy of EFL learners' l2 digital literacy skills, consistency of self-assessed competence, and actual performance. *International Journal of Computer-Assisted Language Learning and Teaching*,10 (2), 1–22. DOI: 10.4018/IJCALLT.2020040101

Bana, A. (2020). Students' perception of using the Internet to develop reading habits: A case study at the English education department of Universitas Kristen Indonesia. *Journal of English Teaching*, 6 (1), 60–70.

Baron, N. (2015). *Words onscreen: The fate of reading in a digital world*. New York, NY: Oxford University Press.

Coiro, J. (2020). Toward a multifaceted heuristic of digital reading to inform assessment, research, practice, and policy. *Reading Research Quarterly,* 56 (1), 9–31.

Delgado, P., Vargas, C., Ackerman, R., & Salmerón, L. (2018). Don't throw away your printed books: A meta-analysis on the effects of reading media on reading comprehension. *Educational Research Review*, 25, 23–38. doi.org/10.1016/j.edurev.2018.09.003

Divya P. (2018). Reading behavior in digital environment: a study among students of universities in Kerala. Unpublished doctoral dissertation. The University of Calicut, Kerala, India.

Divya, P. and Haneefa, M. (2016). Reading behavior of youth in digital environment. *Communication and Journalism Research*, 5 (1), 101–107.

Gilbert, J. (2017). A study of ESL students' perceptions of their digital reading. *The Reading Matrix Journal*, 17 (2), 179–195.

Gilbert, J. (2014). Exploring ESL Students' Perceptions of Their Digital Reading Skills. Unpublished doctoral dissertation, University of Nottingham., Nottingham, United Kingdom.

Hooper, V. and Herath, C. (2014). Is google making us stupid? The impact of the Internet on reading behavior. BLED 2014 Proceedings. 1–12. Bled, Slovenia. Association for Information Systems.

I-Chia Chou, A. (2012). Understanding on-screen reading behaviors in academic contexts: a case study of five graduate English-as-a-second-language students. *Computer Assisted Language Learning,* 25 (5), 411–433.

Lange, S. (2019). *Enhanced E-Books: eine empirische Studie zum immersiven Erleben*. Springer.

Lim, F. V. & Toh, W. (2020). How to teach digital reading? *Journal of Information Literacy*, 14 (2), 1–20.

Liu, Z. Reading behavior in the digital environment: Changes in reading behavior over the past 10 years. (2005). *Journal of Documentation*, 61(6), 700–712.

Loan, F. (2012). Impact of the Internet surfing on reading practices and choices. *Webology*, 9 (1), 1–9.

Luong, (2021). Developing reading culture in the digital environment. *International Education & Research Journal*, 7 (3), 23–24.

Naseri, Z. and Noruzi, A. (2016). The effect of digital age on youth reading habits and practices. *Research on Information Science and Public Libraries*, 22 (2), 213–227.

Nicholas, D, Huntington, p, Jamali, H. Rowlands, I., and Dobrowolski, T. (2008) "Viewing and reading behavior in a virtual environment. The full-text download and what can be read into it". *Aslib Proceedings: New Information Perspectives* 60 (3), 185–198.

Oh, C., Krish,P. and Hamat, A. (2022). Reading on smartphones: Students' habits and implications for reading skills. *Computer Assisted Language Learning Electronic Journal*, 23 (1), 259–277.

Pae, H. (2020). *Script Effects as the Hidden Drive of the Mind, Cognition, and Culture*. Cham, Switzerland. Springer Nature Switzerland.

Pardede, P. (2019). Print vs Digital Reading Comprehension in EFL. *Journal of English Teaching*, 5 (2). 77–90.

Pernice, K. (2017). F-shaped pattern of reading on the web: Misunderstood, but still relevant (even on mobile). Retrieved from https://www.nngroup.com/articles/f-shaped-pattern-reading-web-content/

Reiber-Kuijpers, M, Kral, M. and Meijer, P. (2021). Digital reading in a second or foreign language: A systematic literature review. *Computers & Education*, 163, 1–26.

Schwabe, A., Lind, F. , Kosch, L. and Boomgaarden, H. (2022). No negative effects of reading on screen on comprehension of narrative texts compared to print: A Meta-analysis. *Media Psychology***,** 5 (2), 1–18.

Tewksbury, D., Hals, M. L., & Bibart, A. (2008). The efficacy of news browsing: The relationship of news consumption style to social and political efficacy. *Journalism & Mass Communication Quarterly*, 85 (2), 257–272.

Yusof, A. (2021). Reading habits among students in the digital era: changes of trends and behaviors. *Journal of Academic Library Management*, 1, (1), 43–54.

Varga, E. (2020). How does the Internet influence the readers' behavior. Procedia Manufacturing 46, 949–956.

Appendix A

Table 1.
Participant information

Gender	Male	Female			Total
	57	54			111
	51%	49%			
Age	19-17	22-20	23-25	26-28	29-31
		62	49		
		56%	44%		
Hours spent reading digital texts on digital devices daily	Less than one hour	1-2	3-4	More than 4 hours	
	52	34	13	12	
	47%	31%	12%	11%	
Types of reading when using digital platform:					
Email	7	6%			
Articles	6	5%			
Reading news	5	4%			
Books	3	3%			
Stories	7	6%			
Social media posting	67	60%			
Other things	16	14%			
Do you enjoy reading digital texts?	Yes	No	Sometimes		
	60	12	39		
	54%	11%	35%		

Appendix B

Table 2.

*Descriptive Statistics for the e*merging digital reading practices *Three Scales and their Component Items*

Statement	*M*	*SD*
Shallower forms of digital reading	2.65	0.47
1. I skim digital texts or Web pages in search of pertinent information or information that is most interesting to me, without stopping to ponder my thoughts.	2.81	0.81
2. I scan digital texts or sites and read only the content that interests me.	3.01	0.88
3. I often browse and glance over online texts, rather than getting involved with content.	2.27	0.87
4. I tend to just pick up some small pieces, rather than reading intensively or reading digital texts in full.	2.36	0.89
5. When reading digital texts, I tend to employ keyword spotting as a strategy to locate needed information and to ascertain the text's relevance to my search, rather than settling in for a long read.	2.98	0.86
6. When I read digital texts, I spend little time on in-depth or effortful, engaged, and concentrated reading with sustained attention.	2.75	0.96
7. I try to absorb and recall as quickly as possible large amounts of the digital texts available.	2.70	0.97
8. When reading digital texts, I do not return to explore material in greater depth; I engage in one-time reading.	2.31	0.96
Selective digital reading	2.71	0.61
9. While read digital texts on screens, I read more selectively, while ignoring longer and irrelevant content in digital reading spaces.	2.63	0.92
10. When reading digital texts, I pinpoint select areas of the digital text that are of interest to me.	2.92	0.90
11. I rarely read more than two pages of any digital document.	2.46	0.94
12. I do not read everything on screen; I purposely skip substantial parts or portions of text.	2.61	1.02
13. I do not engage in sustained linear reading of medium to long documents.	2.60	1.04
14. I prefer to read large numbers of short digital documents such as text messages and social media posts, rather than longer digital documents or texts.	3.05	0.97
Bouncing reading behavior	2.47	0.54
15. I do not read articles from the beginning to the end in online environments. Instead, I read the first part and skip to the last part.	1.89	0.92
16. I tend to cross-reference when reading online materials; as such, I move rapidly between pages or various sections and spend less time on each.	2.46	0.88
17. I tend to read the first screen of digital text from among the vast numbers available on a site.	2.24	0.90
18. I jump around digital pages, while skipping some content and backtracking to scan what I skipped.	2.35	0.94
19. I bounce between digital texts or leave them very quickly after concluding that they are not relevant to me.	3.38	0.90

Appendix C

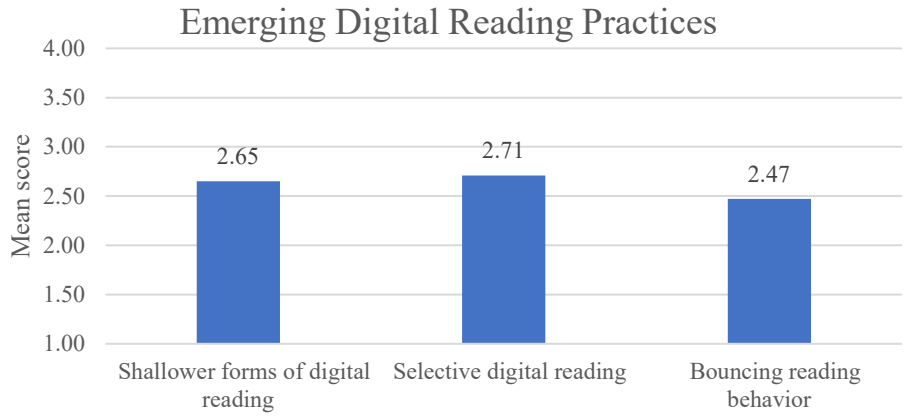

Figure 1: Mean scores of the 3 sub-scales of emerging digital reading practices

Appendix D

Table 3

Descriptive Statistics for the Effect of Emerging Digital Reading Practices

Statement	*M*	*SD*
Reading engagement	2.70	0.70
1. While reading digital texts, I am unable to sustain prolonged engagement in reading.	2.87	0.88
3. While reading digital texts, I feel that I lack the ability to read deeply.	2.67	0.93
5. While reading digital texts, I feel that I am not encouraged to do reflective reading.	2.55	0.79
Reading load	2.69	0.68
2. While reading digital texts, I feel that I am reading with less concentration.	2.67	0.92
4. When reading digital texts, I feel that I am distracted and unfocused.	2.47	0.93
8. I think that online reading is physically and mentally taxing.	2.93	0.79
Reading comprehension	2.74	0.69
6. When reading digital texts, I feel that I comprehend less than I do when reading traditional text.	2.68	0.99
7. When reading digital texts, my ability to accurately recall information from text is decreased.	2.54	0.94
9. When reading digital texts, my reading speed is slower.	2.99	0.86

Appendix E

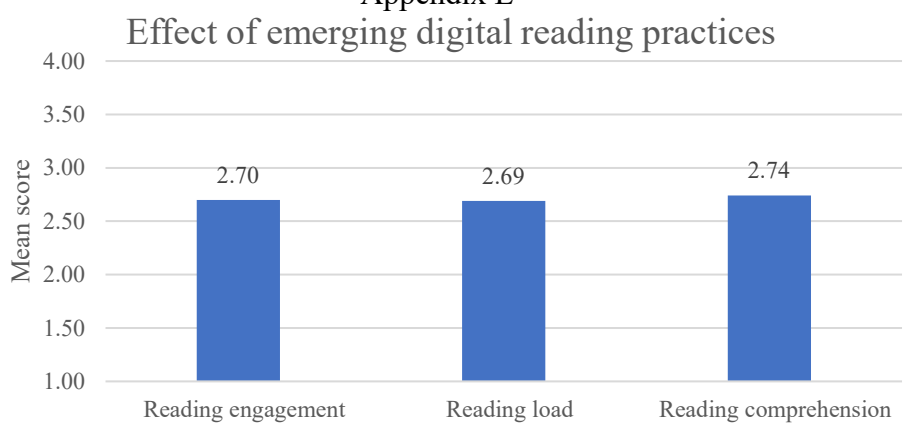

Figure 2. Mean scores of the 3 sub-scales of the effect of emerging digital reading practices

Appendix G

Table 4

Regression Results for Effects of Emerging Digital Reading Practices on Reading Engagement, Reading Load, and Reading Comprehension

Model / Predictor	*B*	*SE*	*t*	*p*
Reading engagement (R^2 = 0.10, Adjusted R^2 = 0.07).				
Constant	1.78	0.41	4.35	< 0.001
Shallower forms of digital reading	-0.11	0.16	-0.70	0.49
Selective digital reading	0.20	0.13	1.51	0.13
Bouncing reading behavior	0.27	0.14	2.02	0.05
Reading load (R^2 = 0.06, Adjusted R^2 = 0.03)				
Constant	1.98	0.41	4.86	< 0.001
Shallower forms of digital reading	-0.01	0.16	-0.04	0.97
Selective digital reading	0.27	0.13	2.13	0.04
Bouncing reading behavior	-0.01	0.14	-0.04	0.97
Reading comprehension (R^2 = 0.02, Adjusted R^2 = 0.01)				
Constant	2.61	0.42	6.22	< 0.001
Shallower forms of digital reading	-0.17	0.16	-1.04	0.30
Selective digital reading	0.09	0.13	0.67	0.50
Bouncing reading behavior	0.13	0.14	0.95	0.35

Note: *B* = unstandardized regression coefficient; *SE* = standard error of unstandardized regression coefficient; *t* = t-statistic; *p* = p-value.

Appendix F

Table 5

The average rating of the participants on the effect of reading digital texts on their abilities in each of the nine reading aspects

Sustained reading	Concentration	Deep reading	Distracted & unfocused	Reflective reading	Reading comprehension	Recall	Taxing	Reading speed
1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
1.95	1.90	1.60	4.9	2	1.97	2.	4.9	4.70

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