Teaching University Students to Read Digital Texts in English*

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Abstract. Today, reading English texts on the screen from a digital storage medium or the Internet is one of the great ways to learn English as a foreign language. However, because of a lack of skills to manage information overload, many students have problems in reading a digital text in English. The goal of the research was therefore to identify teaching strategies which give support to student reading English digital texts in an electronic environment. Questioning and interviewing were leading methods conducted among 74 non-linguistic students. University students were taught working with a digital text in English during the Foreign Language Course. Experimental results demonstrated the benefit of the development of students' digital reading skills in English via digital technologies. After sixteen weeks of instruction support, students coped with reading digital texts more efficiently. The use of online tools enhanced the EFL teaching and learning process for reading digital texts in English. The study provided insights into the current situation how could be fostered the students' digital skills needed for English reading comprehension. Designing practice tasks aimed at impacting English learning and developing digital reading in English should be based on the teaching strategies which consist of using online tools to manage information overload.

Keywords: English as a Foreign Language, Manage Information Overload, Digital Text, Digital Reading, Innovation Skills.

1 Digitalization and Foreign Language Education

1.1 Skill for the 21st Century: Digital and English-Language Competences

Developing university students' reading comprehension of digital texts in English as a foreign language (EFL) is a priority issue in the Russian Federation. First, intending professionals have to use modern information and communication technologies to orient in multilingual global community efficiently. Then, to work in the modern age strategically they have to be able to research digital texts in their native language and more in English. Finally, English-language and digital competencies can promote intending

specialists to learn through life and achieve their professional success. As the International Literacy Association indicates, "The ability to read, write, and communicate connects people and empowers them to achieve things they never thought possible" [1]. Thus, university students should be responsible and confident users of both Internet and English to take an active role in the 21st century.

In Russia where English is not spoken, reading is one of the great ways to learn a foreign language. Working with English text students have to connect their background knowledge and experience, note key points, ask questions, and summarize ideas. Although some university students who are good digital readers in English use tools for reading with a print text which helps them to understand what they are reading, however, some being good readers with print English texts have problems in reading digital text in English [2; 3; 4].

Reading whether paper or digital is university students' independent activity, if they improve their digital reading comprehension in English, they will be able to achieve better academic success. In the current academic situation, university students face some very special needs where their English-language knowledge can help, so they should develop their reading skills and ability. EFL teachers could offer them additional linguistic support to meet their demands.

The goal of the research was therefore to identify teaching strategies which give support to student reading English digital texts in the electronic environment. The research question is: What teaching techniques can EFL educators use to teach university students to read a digital text in English more effectively? The study has relevance to current educational concerns and debates and requires investigation, selection, and discussion of sources about what a digital text is benefits and risks of the digital reading, and digital technologies integrated into reading English texts.

1.2 The notion of a Digital Text

In the digital era, a new kind of text has appeared. It is e-text or a digital text or hypertext. The Vocabulary.com Dictionary defines e-text and hypertext. So, "e-text is a text that is in a form that computer can store or display on a computer screen" [5], and "hypertext is a machine-readable text that is not sequential but is organized so that related items of information are connected" [5]. Hypertext or un-linear writing as the way to connect textual material throughout interconnected trails or links was first used by T. Nelson in 1965 in his work "A File Structure for the Complex, the Changing and the Indeterminate" [6].

Beach and Castek (2016) write that "a digital text is a text including images, sounds, videos, and other multimodal features read on a screen, can be on website or text read on a downloadable PDF document" [7].

Mantei, Lipscombe, Cronin, Kervin (2019) suggest that "digital texts are resources created in written, oral, visual, and/or multimodal modes that are produced through digital or electronic technology" [8].

Thus, a digital text accessed from the Internet, and kept in a laptop, a computer, and a phone or hand-handled devices is made of e-texts without pagination, hyperlinks, videos and/or audios, interactive elements, and other interactive features which make a

reader navigating and surfing explore it in various directional choices to lead and suit he/she interests the best.

2 Digital Reading Across Learning EFL

2.1 Benefits and Risks of Reading Digital Texts

Reading of a digital text is a non-linear one and differs from reading a printed text. Thus, students can face some reading challenges. Chernigovskaya, the neurolinguist and the professor at St. Petersburg State University, in her book "The Internet, the Brain and the Liquid World" defines reading a digital text: "A hypertext system is not sequential reading, and, in most cases, it is gliding over texts linked by links with other texts and information resources. This way of reading can impair and narrow a person's capabilities and abilities to perceive (read) a lot of information" [9]. A range of studies indicates that students get relevant information better when engaged with print [10; 11; 12].

Meanwhile, Ben-Yehudah and Brann (2019) observe: "understanding a digitally displayed text is more challenging for students with attention deficit hyperactivity disorder than their peers, particularly when the conditions of the comprehension task favor good self-regulation of learning skills" [13]. The higher-level of computer literacy skills and competence provides students to evaluate online information better, and they show performance in the digital reading above and beyond reading skills measured with linear texts [14]. The investigating of a general effect of memory updating on digital reading over and above linear reading shows that understanding a digital text depends on cognitive reading operations and individual reader behavior [15]. Then readers' goals affect success in digital reading [16].

A significant role of a support students' reading and engagement of digital texts belongs to a teacher [17]. According to research, "training to approach digital texts to achieve the best learning outcomes should encompass areas of knowledge such as general familiarity with the devices, allowing for personal preferences between e-text and printed text, teaching students and staff about the modes of navigation and how to take full advantage of the additional features e-text provides" [18]. Mantei et al. (2019) demonstrate the importance of the educators' support of learners of all ages while they are examining digital literacy practices [8]. Melentieva (2019) points out that studying "the person's ability using new digital resources and technologies, new media writing, and understanding hypertext can reveal as traditional reading possibilities as digital reading possibilities and risks" [19].

There is no answer to the question about whether reading printed texts or digital texts is easy for university students. Wolf (2008), the cognitive neuroscientist and the child development expert at Tufts University writes in her book "Proust and the Squid": "Human beings were never born to read" [20]. Even though most students use likely printed text features to support comprehension during learning a foreign language, nevertheless they prefer using tablets [21]. Outside of the classroom students using different web-sites, blogs, forums, as well as other technologies, find a way to learn. According to this fact, Berg (2013) writes: "Although most of our students are digital natives

who grew up using computers and cell phones and other types of technology, most are not technologically literate" [22].

Therefore, reading digital texts is different than reading texts in print. Importantly, students' digital reading comprehension depends on readers' goals, their computer skills, individual reader behavior, good self-regulation of learning skills; and a teacher has an important role in supporting students reading digital texts effectively.

2.2 English Digital reading for EFL students

Reading is a complex cognitive activity where English-language literacy is supplemented by digital competence. Digital reading skills are essential for English language learners. On the other hand, English reading comprehension is across the university students' learning. Reading digital texts in English means reading in a way that university students locate, understand, evaluate, synthesize, reflect, and communicate English information. In Russia, an integrated approach is widespread in teaching English as a foreign language [4]. According to this approach, a goal of learning a foreign language is a means of gaining knowledge for other disciplines. To acquire information efficiently university students should improve their skills through digital reading in English.

In the current EFL teaching and learning process, the following types of augmented reality are used, such as "learning applications (addition of teaching visualized information), books with the use of augmented reality" [23]. Digital texts are suitable for achieving and scaffolding the development of digital-literary competencies via changing roles and relationships between readers and texts [24]. Students are empowered "as media producers as well as critical viewers, who develop their English proficiency as well as self-identity in the collaborative, contextualized, and culturally inclusive learning environment" [25]. Depending on the specific learning aims authentic digital texts can be used both in the classroom and extracurricular time, individual and group-work activities [3]. Thus, technological devices change the teaching way to engage university students to learn English.

There are many ideas for teaching digital reading to elementary or secondary students, but only a few ones for teaching university students connect with English texts on screen. Research comparing the effect of reading digital texts versus printed texts during EFL courses shows different results. As Pardede (2019) writes, that only in a smaller number of studies printed reading has the advantage, after 2010 some studies show digital reading superiority. Factors causing this inconsistency are: "the advancement level of the technology employed as the tools for reading, participants' familiarity with the technology, participants' mastery of digital reading strategies, and participants' perception of digital reading" [26]. In yearly research Shirin (2016) found that if a teacher integrates print and digital reading, the students' reading comprehension increases [27].

Consequently, understanding the nature and features of digital texts as well as teaching strategies can help an educator develop EFL university students' online reading speed and digital reading comprehension.

3 Teaching Strategies to Help University Students to Read Digital Texts in English

Transforming EFL teaching and learning processes leads to introduce a concept of the educator's innovative competence. The modern digital text consists of hyperlinks, videos, interactive features aimed at helping enhance and understand given information; however, in many ways, students should relearn to read an English text. Through the implementation of informational and communicative technology reading, digital text in English has become an important aspect of EFL teaching. Although the teaching reading strategies that include tasks aimed at developing the student's skills before, during, and after reading in English are the most important things, hence strategies developing digital reading via online tools are appreciable to be noticed. Accordingly, the efficient use of websites, applications, and devices in reading digital methodology is an essential part of teaching skills, acquired already in EFL teacher training.

Since reading digital texts in English can be interpreted as a complex information-processing task, in the rest of this paper teacher strategies can be suitably adapted to students' needs, and which are mainly aimed at manage information overload and development of the reading digital text will be outlined.

The JSTOR librarians created a training online course to help students manage information overload [28]. It is named Research Basic: An Open Academic Research Skill Course. The course helps university students get a handle on information overload for success in their studies. It contains three modules. Each module has three lessons and three sets of practice quizzes and ends with an assessment to test student's knowledge. After the course, students become familiar with basic research concepts to manage information overload.

Julian (2018), a librarian, recommends online tools, such as speed reading apps, e.g. Spreeder, Spritzlet, Beeline Reader. They can be used to help university students eliminate distractions and assist in focusing on the text. Annotation and mind mapping tools, e.g. Google Docs, Adobe Acrobat, Hypothesis.is, Lucidchart, Freemind, help university students take a note and summarize main ideas. Students can use the software Quizlet to recall information after reading a text. This program is free and available as a mobile app and online program. Julian (2018) says that "effective online tools can enhance a student's ability to learn from any type of text" [29].

To navigate a digital text effectively students can use GoodReader and Diigo. Applying GoodReader students can read PDFs, annotate and highlight a text. It provides a simple reading text on tablets as well. Students can import and export files through web storage tools, e.g. Google Drive and Dropbox, and then revised documents can be sent to others via email.

Reading the complex texts which were assigned is always difficult for the freshmen. Diigo is a web tool that allows the reader to annotate information and then save it in an online library. Students can create several libraries based on topics of their interest. Using Diigo they can create a community of readers and develop their libraries.

Therefore, teachers can employ the manage information overload strategy to assist students to increase online reading speed and improve comprehension. A common fea-

ture of teaching strategies outlined is that they should be implemented under the oversight, guidance, and coordination of the educator. Then students need to have independent practice reading digital texts in English. The productiveness of the given instruments depends on the EFL teacher's communication, collaboration, and information and communication technology competencies [30].

Actively developing an online education environment is changing the nature of the interaction between student and teacher; hence, innovative teaching reading strategies can be adopted. Sometimes educators do not have the time or interest to incorporate online tools to develop digital reading into learning content. Nevertheless, they should adapt to the changing patterns in EFL teaching and learning models to strive for excellence in teaching English.

4 Methodology

4.1 Methods and Participants

To reach the study goal the empirical research was conducted at Humanities and Education Science (Branch) Academy of V.I. Vernadsky Crimea Federal University in Yalta in the 2018–2019 academic years. The research involved 74 university freshmen of 17–18-years old. At the beginning of the study, they were A2 English-language level and trained on educational training programs of 44.00.00 Education and Pedagogical Science (non-linguistic field, bachelor level). The participants were enrolled in sixteen weeks of instruction as an experimental part by training during the Foreign Language Course.

Quantitative research methods, such as questioning and interviewing, were employed in survey research.

4.2 Procedures

In the empirical research, all participants received the same instructions, time limits. Students had to complete a reading comprehension English task via e-materials from the Cambridge Assessment English. An excellent digital reader was a reader who completed reading tasks and spent less time. A good digital reader was a reader who completed reading tasks and spent more time than a previous one, and so on. Then we grouped participants according to the time-spending task. After taking a training course aimed at teaching students to manage information overload strategies participants took a reading comprehension English task again.

5 Findings

The findings shown while reading a digital text in English, students encountered some difficulties that were identified. The readers were disappointed with three facts. First, 31% of the readers had to be concerned about their English-language competence, concentrate on the content language elements and complex images. Second, 42% of the

freshmen could not immediately identify the size of the given digital text. Finally, 49% of the participants constantly had to forecast for other parts of a linked text, the size and content of which also remained unknown. Before the training course, only 4% of the students were familiar with online tools for reading and could use a set of programs that supported to manage to learn web content.

After grouping participants according to the time-spending task, the results showed that they were excellent readers, good readers, not bad readers, and who failed the test. So, students' scores had three types: excellent, good, not bad, and fail. Totals were expressed as a percentage of the maximum achievable score. The results of students' scores completed the digital reading comprehension task before and after training are indicated in Table 1.

Table 1 Comparison of the students' scores.

Scaled Score	Percent of the students before training	Percent of the students after training	Difference
Excellent	8%	9%	+1%
Good	23%	31%	+8%
Not Bad	45%	52%	+7%
Fail	24%	8%	-16%

As shown in Table 1, before the experimental training program, 8% of the university students were excellent skilled readers of a digital text. After training, the figure amounted to 9% of the participants. While 23% of the university students completed English reading tasks with a good score before training, this figure amounted to 31% of the participants after the training. Before training, 45% of the students had not a bad score, and after training 44% of the ones had this score. There were 24% of students who could not complete a reading comprehension English task. After taking the training program, they were 8% failed.

So, we found that after the experimental training program readers coped with their online reading task better. This led us to believe that university students used some supported reading strategies. With respect that the students' experience of performing reading tasks, it was ascertained that English digital reading strategies are based on both students' literacy in English-language learning and their digital competencies.

Experimental results show that most of the students' digital reading skills are successfully developed via teaching them how to use reading strategies dealing with a digital text in English during the Foreign Language Course.

6 Conclusions

Thus, it can be concluded that the students' developing comprehension of digital texts in English is a priority subject for EFL educators. Students have to exploit the digital platform to collect, evaluate and adapt the information in English to their learning purposes. To develop digital reading in English and make forward progress students should

be taught to manage information overload. The study provides insight into reading strategies supported.

Based on the findings of the empirical research, teaching students to read digital texts in English should be rooted in their English-language competence and information and communication literacy skills. English-language and information and communication literacy skills being the important 21st-century ones can be enhanced through teaching students to read digital texts in English. Designing EFL practice tasks aimed at impacting digital learning and developing digital reading in English should be based on the teaching strategies which consist of using online tools to manage information overload.

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