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Чтение компьютерного текста против книжного чтения

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Аннотация. В данной статье описываются предпочтения будущих преподавателей английского языка в выполнении заданий на компьютерах и в книгах. В ней объясняется до какой степени активное использование чтения с монитора компьютера и чтение бумажных носителей влияет на скорость чтения, аккуратность и восприятие. Результат исследования доказал что будущие учителя английского языка предпочитают чтение книг и данный вид чтения является более результативным чем с монитора компьютера.

Ключевые слова: чтение с монитора, чтение книг, предпочтения будущих учителей английского языка, содержание языкового обучения.

Computer versus Paper-Based Reading

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Annotation: This article shows the preference of prospective English teachers in performing computer and paper-based reading tasks. It explains to what extent computer and paper-based reading influence their reading speed, accuracy and comprehension. The results of the research suggested that prospective English teachers prefer paper-based reading to computer version and their performance was higher in paper-based reading than computer.

Key words: computer reading, paper-based reading, prospective English teachers' choice of reading format, Language Teaching Context.

Reading is composed of various activities with several purposes. In a reading process, text may be read by skimming rapidly, be scanned for a specific piece of information, and be read for comprehension. In addition to how a text is read, the reason why a text is read also contributes greatly to these reading processes. The use of computer in comparison to paper in a reading process continues to attract research interest [8, p.53].

Bolter considers the computer as the fourth great document medium, next to the papyrus, the medieval codex, and the printed book[1, p.67].

Some predict that technological advances in computer technologies, wireless, mobile computing technology, new input techniques, the Web, new hypertext applications, digital libraries, and digital document reading devices will make books out of date. These advances can also alter the relationship between authors and readers. Moreover, they can change our concept of traditional libraries in the form of physical volumes [9, p. 200]. In spite of these improvements, recent studies prove that paper still continues to be the preferred means for reading activities.

This research aims to determine the preference of prospective English teachers in performing computer and paper-based reading tasks and to what extent computer and paper-based reading influence their reading speed, accuracy and comprehension. In this study, online reading refers to reading text from a computer screen including tablets and e-book readers whether the source is internet or the computer itself. The result of the study is important for prospective English teachers because their choice of reading format highly influences their academic success. What makes this study significant is that computer and paper-based reading are compared in English language teaching context among prospective English teachers in Russia.

Experimental comparisons of computer- and paper-based tasks date back to the emerge of computers. The majority of early studies comparing the reading of paper versus computer documents focus on outcome measures of reading, such as speed, reading accuracy and comprehension. The results of earlier studies presented below on computer and paperbased reading tasks suggested that paper-based tasks were superior to computer- based tasks in

terms of speed, accuracy and comprehension.

Dillon [4] revealed that reading was nearly 20 to 30% slower with regard to performance from a computer screen than a paper. While some studies found minimal differences, Osborne & Holton, Muter & Maurutto reported no significant difference between two formats. However, it is noteworthy that computer technology at that time was undeveloped when it is compared with today's contemporary technology [7, p. 260].

When considering reading accuracy, findings proved that paper prevailed computer. Recent literature especially after 2000s comparing computer and paper-based reading has supported the findings of early studies and favored paper-based reading. Mayes found computer-based reading significantly slower. In his study he provided a psychological and physical explanation that computer-based reading caused a greater level of tiredness and stress. These effects required an increase in cognitive demands, that is, the activation of more perceptual, executive and cognitive resources [5, p. 272]. Although Noyes [2004] found no significant difference in the comprehension scores for the two means, participants reported more workload from the computer-based tasks. Yen & Wang [2002] conducted an experiment which tested the university students' experience regarding electronic- or paper-based reading. The results showed that most people did not deal with e-based reading well. The main obstacles were the lower level of manmachine interactions and self-control during e-reading process.

Destefano & Lefevre studied the role of cognitive load in hypertext reading and results revealed that readers with low memory and background knowledge were generally disadvantaged in screen-based reading. However, low background knowledge could be advantages, if the hypertext structure were in line with the knowledge domain [3, p.1620].

Mayes D.K., Sims V.K examined subjective and objective differences between on-screen and on-paper reading in terms of a set of cognitive and metacognitive components. The results suggested that the main differences between the two study media were not cognitive but rather metacognitive [5, p. 370].

They found no significant difference between the groups in reading speed or the level of reading comprehension, examined differences between a LCD monitor and a traditional paper format in reading performances of teenagers. The results showed that teenagers scored significantly higher on the paper reading comprehension tests than on the electronic ones. Furthermore, it was reported that it took longer time to read passages and answer questions on the screen.

Creed A. explored the effects of the technological interface on reading comprehension among 72 tenth graders from two different primary schools in Norway. Main findings showed that the participants' academic achievement was higher in paper-based reading than screen-based reading. The common characteristic of early and recent literature reveals that readers' performance is higher in paper-based reading and they prefer paper to computer screen [2, p. 10].

The debate over the choice of computer and paper-based tasks will probably go on and there will always be some tasks which are better performed in one form than in the other. However, the situation is changing through the technological advancements and the findings can differ from one study to another.

The research was done at North-Caucasus University with prospective English teachers. Table 1 shows the views of the participants about the advantages and disadvantages of online reading.

Table 1: Disadvantages and Advantages of Online Reading

Disadvantages		Advantages	
irritating eyes	40 (42%)	easy access to many resources	36 (38%)
tiring	22 (23%)	free of charge	10 (10%)
cannot use reading strategies	20 (21%)	more effective	5 (5%)
hard to follow on the screen	17 (18 %)	save time	5 (5%)
cannot concentrate\nnegative	motivation		14 (15%)
don't like on-line reading	10 (10%)		
forget the text easily	6 (6%)		
cannot carry the computer with me	5 (5%)		

more abstract	3 (3%)
external factors (power failure etc.)	3 (3%)

Table 1 was formed on the basis of answers given by the subjects to open-ended questions. As for disadvantages, 42% of the subjects stated online reading irritated their eyes. Next highest percentage 23% belonged to the item that online reading was tiring since they sat before a computer during the activity; 21% cited that “they cannot use reading strategies effectively like taking notes, circling and underlining during online reading”; 18% maintained that it was harder to follow on the computer screen; 15% stated that ‘they cannot concentrate or motivate while reading online’; 10% explained they did not like or prefer to read online; 6 % cited they forgot the text during the process and 5% maintained they couldn’t carry the computer with them. Finally, 3% considered online reading more abstract and external factors like power failure and setting influenced their online reading negatively.

As to advantages of online reading, 38% of the participants stated that they had easy access to many resources online; 10% found online resources free of charge. While 5 % considered online reading more effective than paper-based reading, 5% believed that they saved time and energy. Finally, 2% stated they could access to update resources. All in all, participants expressed more disadvantages of online reading than advantages.

Reading is an important skill especially for academic purposes and by means of technological advancement, readers’ choice over paper-based or online reading in reaching reading objectives has been under discussion for decades. Glancing at some research done in this field, readers favor paper-based reading to online reading especially in early literature, yet the innovations in computer and internet technology sometimes have contradicted these findings and reported no significant differences.

According to the data collected in this study, the result of the present study is consistent with the findings of the early and recent literature. Participants highly preferred paper-based reading to the computer version; therefore, they reported more disadvantages than advantages while performing online reading. The reasons for the disadvantages were mainly physical, in other words, computer screens irritated their eyes and reading from a screen was tiring for them. In addition, in terms of cognitive load, participants expressed that they could not use reading strategies effectively and could not concentrate on the screen. On the other hand, participants reported some advantages to online reading such as easy access to many resources and they considered online reading more effective in terms of practicality and free of charge. The main obstacles were the lower level of man-machine interactions and self-control during e-reading process. In their study, Wastlund provided that computer-based reading caused a greater level of tiredness and stress. These effects required an increase in cognitive demands[10, p. 380].

Destefano &Lefevre also revealed that readers with low working memory and low prior knowledge were usually disadvantaged in hypertext[3, pp.1640].

Analyzing the performance of the participants, it was observed that reading speed, accuracy and comprehension in paper-based reading and testing were better than the computer version.

In paper-based reading, reading speed was nearly 12% faster than reading on computer screen. Moreover, the rate of comprehension based on the correct answers given in the test was approximately 15 % more accurate than online reading. In other words, participants performed better in paper-based reading and there was a difference for them between paperbased and online reading. This finding is in consistent with Dillon's study. Dillon found that reading was some 20 to 30% slower in terms of reading performance from a computer screen than a paper[4, p.72].

Conclusion. In conclusion, in the light of data collected, prospective English teachers preferred paperbased reading to online version and their performance was higher in paper-based reading than online. Although paper-based reading has become a habit throughout their educational background, their approach to online reading can shift with time by means of technological advancements in computer, e-book and internet technology. It can be the focus of other studies.

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