A Comparison of Online and Traditional Tests: Reading Comprehension of the Students at the University of Computer Studies, Pyay

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Abstract

This research intends to decide the fondness of Intermediate Students in performing Personal Computer and paper-based reading assignments, and to what extent PC and paper-based reading impact on their understanding rate, exactness and comprehension. The test was carried on at the University of Computer Studies, Pyay. The members were 82 students of Computer Science and Computer Technology. Two kinds of information were gathered in this research. First, the Questionnaires for Online Reading Comprehension were used to collect information about the members' perspectives on their PC and paper-based reading exercises. Second, one test was conducted with 12 chipping subjects to comprehend their understanding rate, exactness and comprehension in both PC and paper-based reading tests. The consequences of the research proposed that almost all students preferred paper-based reading to PC reading. Moreover, the study shows that reading speed on the PC was almost 12% quicker than paper-based reading for these students.

Keywords: online, paper-based reading, pros, cons, comprehension, exactness, perspective

1. Introduction

This research was carried on at the University of Computer Studies, Pyay. The participants were 82 of first year and final year students. Reading is written about different exercises with many purposes. In a reading procedure, content may be read by skimming quickly, be scanned for particular information, and be read for understanding. Furthermore, how content is read and the reason of reading this content contributes incredibly to these reading procedures. The use of PC in contrast with paper in a reading procedure keeps on interesting the research. Some researchers believe that innovation in PC, remote, portable processing creation, new info systems, the Web, new hypertext applications, computerized libraries, and computerized report reading gadgets will make books outdated. These advances can also change the connection between writers and readers. Besides, they can change the idea of traditional libraries as physical volumes. In addition, they think that the computer is the fourth great document medium, next to the paper and the printed book. This research intends to decide the fondness of students in the University of Computer Studies, Pyay in performing PC and paper-based reading activities and to what degree PC and paper-based reading impact on their understanding pace, precision and comprehension. In this research, web based reading indicates that reading content from a PC screen including tablets and digital book readers whether the source is web or the PC itself. The consequence of the study is important for the students that their choice of reading format highly impacts on their academic achievement.

2. Review of Literature

Test examination of PC and paper-based assignments go back to the rise of PCs. Most of early examinations comparing the reading of paper versus PC texts concentrate on the result proportions of reading, for example, speed, understanding exactness and comprehension. The consequences of early investigations expressed below on PC and paper-based reading tasks recommended that paper-based assignments were better than PC based documents in the matter of speed, precision and understanding.

Dillion (1994) claimed that reading was about 20% to 30% slower with regard to performance from a PC screen than a paper. While some studies discovered insignificant contrasts, Muter (1982) revealed no huge distinction between these two forms. But, it is clear that today digital technology is more developed than in the past. When thinking about understanding exactness, studies demonstrated that paper won PC. He also found the level of exactness in reading tasks to be lower for PC based content. But, Askwall (1985) announced no significant distinction between the two formats for accuracy. Ziefle (1998) also found that PC screen caused tiredness in the eyes more rapidly than paper.

Recent literature of late 2000s, which compared PC and paper-based reading, has supported the findings of early studies, and they showed that paper-based reading is more favored. Mayes (2001) discovered that PC based reading was more slowly. In their studies, they gave a mental and physical explanation that PC based reading caused a more prominent degree of tiredness and stress. These impacts required an increase in cognitive demands, that is, the activation of more perceptual, executive and cognitive resources. In spite of the fact that Noyes (2004) found no huge distinction

in the understanding scores for the two methods, members revealed more workload from the PC based tasks.

Destefano and Lefevre (2007) examined the job of psychological burden in hypertext reading and result the difference between PC and Paper-based Reading. They uncovered that readers with low memory and foundation information were commonly hindered in screen-based reading. Nonetheless, low foundation information could be favorable circumstances, if the hypertext structure were in accordance with the information space.

In Turkey, Dundar and Akcayir (2012) compared reading speed and comprehension of the primary school 5th-class students on tablet PCs with that of on printed books. They found no critical contrast between the groups in reading rate or the degree of comprehension.

Kim (2013) analyzed contrast between a LCD screen and a traditional paper format in reading performance of young people. The outcomes demonstrated that young people scored significantly higher on the paper reading comprehension tests than on the electronic ones. Besides, it was reported that it took more time to read passage and answer questions on the screen. Moreover, the effects of technological interface on reading comprehension among 72 tenth graders from two different primary schools in Norway. Main findings indicated that the members' academic achievement was higher in paper-based reading than screen reading.

The discussion over the choice of PC 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 can change through the development of technology and the findings can differ from one study to another.

3. Strategy

Quantitative research form was used in this study. Moreover, this research form was supported by exact information. It is presented that the students of the University of Computer Studies, Pyay perform better in paper-based reading exercises, so they prefer paper-based reading exercises and tests to online exercises. Therefore, the research questions below will be answered.

1. What are the perspectives on the first year and final year students from the University of Computer Studies, Pyay about PC and paper-based reading?
2. What are the pros and cons of PC based reading for the subjects?
3. To what extent does PC based reading impact on members' reading performance like understanding rate, exactness and comprehension?

4. Instrument and Procedure

Two kinds of information were gathered in this research. Firstly, the Questionnaires for Online Reading Comprehension were used to collect information about the members' perspectives on the web and paper-based reading exercises. Both qualitative and quantitative information were gathered through the research. Quantitative information was gathered from the questionnaires and qualitative information was gathered from open discussion questions.

The questionnaires were given to 82 students and made out of two sections. 10 questions were included in the first section and these questions aimed to comprehend members' thoughts on the web and paper-based reading exercises. These questions were intended to investigate their perspective about the pros and cons of reading from PC screens. Secondly, after the completion of the questionnaires, one analysis was done to 12 volunteering subjects out of 82 to comprehend their understanding rate, exactness and comprehension in both PC and paper-based reading tasks. In the test, an intermediate level reading text which consisted of 500 words in English Language followed by eight wh-comprehension questions was given to two groups: six subjects as online readers and six subjects as paper-based readers, to decide subjects' understanding rate, exactness and comprehension. In the experiment, one PC was given for each online reader and time was set to measure their understanding rate. After finishing text reading, they had to answere the comprehension questions by keyboard. Being paper-based readers, they were in a study hall and the reading task was given as a two-page paper. They had to answer the questions by pen on the paper.

5. Findings and Results

In this section, the findings of the research were introduced in three tables as the perspectives of the members about on the web and paper-based reading, the pros and cons of web based and paper-based reading and the performance of both reader groups. Table 1 shows the perspectives on the members about on the web and paper-based reading as the following.

In Table 1, most of the items were cross-checked by another item to confirm the information. Items 1 to 4 and 6 to 10 were cross-checked by each other. In this group, members referred to Item 1 with a mean 3.80 that it was easier to understand the reading comprehension questions on paper. Next, item 4 saying 'if I have a choice, I would like to read articles printed on paper' also got a mean of 3.80. In Item 7 with a mean of 3.05, they thought scroll bar was useful when they read on PC screens. Eventually, as expressed in Item 5 which got the least mean of 1.60, there were contrasts between reading on PC screens and reading on paper for the members.

Table 2 presents the perspectives of the members about the pros and cons of web based reading.

Table 1. The perspectives on the members about on the web and paper-based reading

Items		Number of students	Mean
1	It is easier to do the reading comprehension questions on paper.	82	3.80
2	It is easier to do the reading comprehension questions on PC screens.	82	1.53
3	If I have a choice, I would prefer to read articles on PC screens.	82	1.47
4	If I have a choice, I would prefer to read articles on paper.	82	3.80
5	To me, there is no difference between reading on PC screens and reading on paper.	82	1.60
6	I think hyperlinks are useful when I read on PC screens.	82	2.92
7	I think the scroll bar is useful when I read on PC screens.	82	3.05
8	I think the cursors are useful when I read on PC screens.	82	2.82
9	I like to read articles on PC screens.	82	1.65
10	I like to read articles on paper.	82	3.63

Table 2 was shaped based on answers given by the subjects to open-ended questions. As for pros, 32% of the members expressed that they had easy access to many sources on the web; 11% discovered online sources are free of charge; 5% considered that online reading is more effective than paper-based reading and they saved their time and energy. Finally, 2% expressed that they could access to update sources.

As for cons, 41% of the subjects expressed that web based reading irritated their eyes. 23% said that they were tired when they sat before a PC during the test; 21% referred to that they cannot use reading strategies successfully like taking notes, circling and underlining during web based reading; 18% showed that it was more difficult to follow on the PC screen; 15% expressed that they cannot concentrate on reading on the web; 11% referred to that they did not like online reading and 5% said they forget the text easily. 4% complained that they cannot carry the PC with them everywhere. Eventually, 3% thought that web based reading is more abstract and external factor like power failure caused them negative effect on their online reading. All in all, members expressed more cons of online reading than its pros.

Table 2. The pros and cons of web based reading

Pros		
Items	Number of students	%
Simple access to numerous sources	31	32
Free of charge	9	11
Increasing successful	4	5
Save time consuming	4	5
Access to update sources	2	2
Cons		
Items	Number of students	%
Aggravating eyes	34	41
Tiring	19	23
Cannot use reading strategies	17	21
Difficult to follow on the screen	15	18
Cannot concentrate	12	15
Do not like online reading	9	11
Forget the text easily	5	6
Cannot convey the PC with me	4	4
More abstract	3	3
Power failure etc.	3	3

Table 3 describes the performance of web and paper-based readers on their understanding rate, exactness and comprehension.

Table 3. The performance of web and paper-based readers

Online readers		
Subjects	Duration (minute)	Number of correct answers
1	23	5 out of 8
2	26	4 out of 8
3	26	5 out of 8
4	27	6 out of 8
5	30	6 out of 8
6	32	7 out of 8
Average	27.3	5.5
Paper-based readers		
Subjects	Duration (minute)	Number of correct answers
1	18	5 out of 8
2	20	7 out of 8
3	25	7 out of 8
4	25	7 out of 8
5	26	7 out of 8
6	27	8 out of 8
Average	23.5	6.8

In Table 3, there were 12 volunteering subjects _ six as online readers and six as paper-based readers. They read similar passage but in a different format. As for online readers, the average duration of finishing the task, including answering the questions, was 27.3

minutes and the paper-based readers who finished the task including responding the questions took for 23.5 minutes and the normal of right answers was 6.8. By comparing the two groups, paper-based readers finished reading assignments almost 3.8 minutes earlier and one or two more questions are correct than online readers.

Furthermore, during the analysis, it was seen that paper-based readers used reading procedures like understanding, circling, going back and forth rapidly, and taking notes more frequently than online readers.

6. Discussion and Conclusion

Reading plays an important role in academic purposes. Since technology is developed, there have been a lot of discussions to choose online or paper-based reading for decades. Looking at some studies done in this field, readers prefer paper-based reading to web based reading particularly in early writing, but the advancements in PC and web innovation sometimes have contradicted these findings and reported no critical contrasts.

According to the information gathered in this study, the consequence of the current study is same as the early findings. Members favored paper-based reading to the PC form; in this manner, they showed a larger number of disadvantages than advantages while performing web based reading. They have, especially, disadvantages in physical, in other words, reading from a screen causes their eye strain and tiring for them. Moreover, in terms of comprehension, members said that they could not use reading techniques successfully and could not focus on the screen. But, the members reported a few favorable circumstances to internet reading, for example, easy access to many sources and they considered web based reading increasingly successful as far as common sense and free of charge.

Investigating the performance of the members, it was seen that the understanding rate, precision and comprehension in paper-based reading and testing were better than the PC version. In paper-based reading, reading speed was about 12% quicker than reading on PC screen. Also, the pace of comprehension depends on the right answers given in the test was roughly 13% more exact than web based reading. In other words, the members performed better in paper-based reading and there was a distinction for them between paper-based and web based reading. In conclusion, in the light of information gathered, the students at the University of Computer Studies, Pyay preferred paper-based reading to online format and their performance was higher in paper-based reading than on the web. In spite of the fact that paper-based reading has become a habit through their educational background, their way to deal with web based reading can move with time by methods for innovation in PC and web, and digital book. It can be the focal point of other studies.

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