E-texts or p-texts? Evidence from reading comprehension tasks for Polish teenage learners of English

ABSTRACT
Research investigating differences between reading comprehension of electronic and paper texts has so far provided conflicting evidence. Thus, the present paper aims to examine the comprehension of paper and electronic texts by Polish intermediate learners of English as well as to present their attitudes towards the two types of texts in question. In a pre-test, the participants representing a similar level of this subskill were selected and divided into two groups. In the study proper, the control group read a paper version of the text while the experimental group worked with a text displayed on a computer screen. Although the computer group scored higher than the paper group, these differences were not statistically significant.

Keywords: reading comprehension, EFL reading, paper texts, electronic texts, secondary school students

1. Introduction
Due to the unprecedented omnipresence of computers, smartphones or, broadly speaking, hand-held devices, it is common for people to substitute paper books with their electronic counterparts. Consequently, more and more reading that is taking place nowadays is not done in a traditional, that is paper way, but rather via electronic devices (e.g., Myrberg & Wiberg, 2015, p. 49; Walsch, 2016, p. 160). This is why since the arrival of the first personal computers, the differences between reading of paper and electronic texts have been thoroughly explored by reading comprehension specialists.

One of the focal and controversial issues is whether it is reading on paper or on a computer screen that is more effective (e.g., Dillon, 1992; Kong, Seo, & Zhai, 2018; Myrberg & Wiberg, 2015; Noyes & Garland, 2008; Walsch, 2016). Despite a lively discussion, no satisfactory answer to this question has been provided yet. One commonality established by 1990s research, for example, concerned

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the readers’ strong inclination to read paper texts (Meyer, Talbot, Subblefield, & Poon, 1998; Mayes, Sims, & Koonce, 2001). The research published since then, however, has not suggested any prevailing trend. While many studies confirmed previous observations that reading on paper was more effective (Chen, Cheng, Chang, Zheng, & Huang, 2014; Hosseini, Abidin, & Baghdadnia, 2014; Jeong, 2010; Mangen, Walgermo, & Bronnick, 2013; Mayes et al., 2001), supporting the general consensus that people preferred reading on paper (Myrberg & Wiberg, 2015, p. 49), other works have identified subtle differences in the subjects’ comprehension of e- and p-texts (Ackerman & Lauterman, 2012; Margolin, Driscoll, Toland, & Kegler, 2013; Mojarrad, Hemmati, Gohar, & Sadeghi, 2013; Porion, Aparicio, Megalakaki, Robert, & Baccino, 2016).

The present paper introduces a theoretical background to the problem of reading comprehension of e- and p-texts by discussing selected empirical studies devoted to that subject matter. Since the research has accumulated plentiful, yet conflicting evidence, three trends were identified:

1) traditional reading is more successful than digital reading in terms of reading comprehension;
2) digital reading is said to be more effective than its traditional counterpart;
3) the subjects, who read paper and electronic texts, achieve similar scores in reading comprehension tests.

Having studied varied data obtained from the research into reading comprehension of e- and p-texts, we designed and conducted the experimental study with an intention of discussing traditional and digital reading comprehension from the perspective of Polish students of English.

Thus, the objectives of the present paper are threefold: (1) to provide a review of the relevant literature in the area of reading comprehension of e- and p-texts, (2) to describe the experimental study undertaken with Polish intermediate students of English and, finally, (3) to draw some conclusions with regard to further research on reading comprehension.

2. An overview of research on media-related reading comprehension

The first analyses concerning the differences between reading of electronic and paper texts emerged in 1980s. A variety of factors have been considered, including the effect of age (e.g., Meyer et al., 1998; Ball & Hourcade, 2011), attention span (e.g., Schneps, Thomson, Chen, Sonnert, & Pomplun, 2013; Gudinavicius, 2016) and gender (e.g., Sun, Shieh, & Huang, 2013) on reading processes. For the purpose of the present paper, however, we will limit ourselves to an overview of research into the comprehension of texts in traditional and computer-supported reading environments.

The late 1990s research reported consistent results which demonstrated the major advantage of traditional reading over its digital equivalent (e.g., Meyer et
The studies proved that people were not willing to read on computer screens since such differences between p-books and e-books as fonts, spacing or the act of scrolling up and down instead of page turning, proved to be the reasons for readers’ tendency to disregard digital reading. Their general reluctance to read on computer screens was reflected in their lower scores achieved during reading comprehension tests.

Even though the technological development revolutionised the digital world, the results of 1990s research were confirmed by more recent studies (e.g., Jeong, 2010; Ackerman & Lauterman, 2012; Mangen et al., 2013; Chen et al., 2014; Hosseini et al., 2014). The data have not pointed to the superiority of electronic texts over their paper counterparts, refuting the theory that the low quality of computer screens was the reason for the readers’ problems with reading e-texts.

Some researchers maintained, however, that thanks to higher quality display systems, readers were provided with the format of texts resembling the ones printed on paper (e.g., Margolin et al., 2013, p. 513). As a result, it was concluded that reading e-texts is either equivalent to reading p-texts (e.g., Dundar & Akcayir, 2012; Margolin et al., 2013; Mojarrad et al., 2013) or even more effective than traditional reading in terms of comprehension (Porion et al., 2016). Moreover, the findings revealed that not only was it the kind of medium used, but also the kind of question posed and the readers’ familiarity with the device that influenced the results of comprehension tests. For instance, Chen et al. (2014) conducted an experiment with a group of 90 college students with a view to investigating the differences between reading comprehension tests performed on paper, tablet and computer screens. To check the participants’ shallow and deep level comprehension of a text, two sets of questions were given. It was demonstrated that as far as shallow level reading and multiple choice questions were concerned, paper group got a higher score. Nevertheless, it was also argued that the participants’ degree of familiarity with the medium used was a significant factor since those subjects with high-level tablet familiarity outperformed other readers while dealing with deep level questions.

The comparison of traditional and digital reading does not only produce conflicting results with respect to reading comprehension tests, but also differing levels of attention span among readers who process a text written in their native versus foreign language. In his pilot study, Gudinavicius (2016) attempted to measure the readers’ concentration while working with p- and e-texts in their L1 and FL. He proved that the kind of media used by readers affected their levels

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1 Shallow comprehension enables readers to grasp an explicit meaning of the text. It is possible thanks to the surface code and the textbase. Deeper comprehension, on the other hand, can be developed by identifying causes of events or inferring messages of the text which are then related to the readers’ background knowledge (Davoudi, 2005, p. 108).
of attention span. Reading p-books in L1, for instance, turned out to be the least cognitively demanding activity whereas processing a FL text proved to be, as the scholar defined it, “neutral” (Gudinavicius, 2016, p. 182). On the other hand, the presence of any electronic device required the participants increased levels of attention and, hence, was described as the most engaging.

As already mentioned, no successful conclusion has been reached as to the effectiveness of reading comprehension of paper and electronic texts. By no means exhaustive, Table 1 lists the selected examples of research into the subject matter.


<table>
<thead>
<tr>
<th>STUDY</th>
<th>Country</th>
<th>Comparison</th>
<th>Subjects</th>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayes et al. (2001)</td>
<td>U.S.</td>
<td>Reading comprehension (paper vs. VDT)</td>
<td>88</td>
<td>Reading comprehension was negatively affected by video-display terminals as readers were prone to forget information more easily.</td>
</tr>
<tr>
<td>Jeong (2010)</td>
<td>South Korea</td>
<td>Reading comprehension (p- vs. e-books)</td>
<td>56</td>
<td>The students performed better in terms of reading comprehension while working with paper books.</td>
</tr>
<tr>
<td>Ball &amp; Hourcade (2011)</td>
<td>U.S.</td>
<td>Age differences (paper vs. computer)</td>
<td>84</td>
<td>The older subjects’ comprehension of the text was better than their younger fellows regardless of what kind of a medium was used.</td>
</tr>
<tr>
<td>Ackerman &amp; Lauterman (2012)</td>
<td>Israel</td>
<td>Reading comprehension (paper vs. computer)</td>
<td>156</td>
<td>The subjects who were reluctant to study on screen achieved lower scores in reading comprehension under time pressure.</td>
</tr>
<tr>
<td>Dundar &amp; Akcayir (2012)</td>
<td>Turkey</td>
<td>Reading performance, reading speed and reading comprehension (p-books vs. tablet PCs and)</td>
<td>20</td>
<td>There was no statistically significant difference in the reading speed or comprehension between the control and experimental groups.</td>
</tr>
<tr>
<td>Mangen et al. (2013)</td>
<td>Norway</td>
<td>Reading comprehension (paper vs. computer)</td>
<td>72</td>
<td>The students who read a printed version of the texts scored better on the reading comprehension test than those who read the electronic text.</td>
</tr>
<tr>
<td>Margolin et al. (2013)</td>
<td>U.S.</td>
<td>Reading comprehension (paper, e-books on dedicated readers vs. computer)</td>
<td>90</td>
<td>The students performed equally while reading e-books, paper texts and electronic texts displayed on computer screens.</td>
</tr>
</tbody>
</table>
**E-texts or p-texts? Evidence from reading comprehension tasks...**

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Country</th>
<th>Paper vs.</th>
<th>Reading comprehension description</th>
<th>Sample Size</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mojarrad et al. (2013)</td>
<td>Iran</td>
<td>Paper vs. computer</td>
<td>66</td>
<td>Paper- and computer-based reading comprehension resulted in the subjects’ similar performance.</td>
<td></td>
</tr>
<tr>
<td>Schneps et al. (2013)</td>
<td>U.S.</td>
<td>Paper vs. e-reader</td>
<td>103</td>
<td>Dyslectic students with high visual attention (VA) span performed better while reading a paper text. Those with low VA span achieved better reading comprehension test results while working on iPods.</td>
<td></td>
</tr>
<tr>
<td>Sun et al. (2013)</td>
<td>Taiwan</td>
<td>Paper vs. computer</td>
<td>144</td>
<td>The readers with higher education had better reading comprehension. Irrespective of print or screen reading, the younger age group also had better reading comprehension than the older age group.</td>
<td></td>
</tr>
<tr>
<td>Chen et al. (2014)</td>
<td>China</td>
<td>Paper, computer vs. tablet</td>
<td>90</td>
<td>The paper group performed better than the tablet and computer group.</td>
<td></td>
</tr>
<tr>
<td>Hosseini et al. (2014)</td>
<td>Iran</td>
<td>Paper vs. computer</td>
<td>106</td>
<td>The students scored better on paper- than on computer-based tests.</td>
<td></td>
</tr>
<tr>
<td>Gudinavicius (2016)</td>
<td>Lithuania</td>
<td>Paper vs. screen (pilot study)</td>
<td>6</td>
<td>Reading p-texts is the least cognitively engaging activity as compared with e-texts displayed on any size of computer screens.</td>
<td></td>
</tr>
<tr>
<td>Porion et al. (2016)</td>
<td>France</td>
<td>Paper vs. computer</td>
<td>72</td>
<td>The students’ performance was slightly better on computer screens than during traditional reading, however the difference was very small.</td>
<td></td>
</tr>
<tr>
<td>Hou, Rashid, &amp; Lee (2017)</td>
<td>U.S. South Korea</td>
<td>Paper vs. its digital equivalent</td>
<td>45</td>
<td>Paper texts are similar to their digital counterparts in terms of reading comprehension, fatigue or psychological immersion.</td>
<td></td>
</tr>
</tbody>
</table>

**3. The experimental study**

Below there is the description of the goals, participants, instruments and procedure adopted in the study.

**3.1 Goals**

Unlike the abundance of studies investigating reading comprehension of p- and e-texts done with L1 students, there is a dearth of available research conducted...
in EFL instructed settings. Due to the scarcity of empirical research concerning the relationship between reading comprehension assessment and the use of technology in Poland, this study aimed to determine whether the use of computer screens affected the students’ overall EFL reading comprehension performance. Two research questions guided this study:

RQ1. Which of the two groups, control or experimental, performed better in a reading comprehension test?

RQ2. Did reading on computer screens have positive, negative or neutral effect on the students’ reading comprehension?

RQ3. What is the significance of paper and electronic texts as perceived by the participants of the study?

3.2 Participants
The study was conducted at Kazimierz Wielki Secondary School in Lublin, Poland during the 2018/2019 academic year. Forty-two pre-intermediate learners of English participated in the first stage of an experiment.

3.3 Instruments
Two methods, quantitative and qualitative, were adopted for the investigation of reading comprehension of e- and p-texts. Quantitative approach was taken to investigate the subjects’ reading comprehension skills during the pre-test stage as well as the study proper. For this purpose two reading comprehension tests in English consisting of ten multiple choice questions were selected. The difficulty of the texts could be compared to reading comprehension tests approximating B1 level. In order to check the students’ shallow and deep understanding of the text, three types of questions were posed: surface, inferential and semantic ones.

The qualitative analysis was used to gain insights into the participants’ reading experiences in their L1 and FL, that is Polish and English, respectively. The questionnaire aimed to find out whether the amount of the participants’ exposure to a given medium affected their performance in a reading comprehension test. Three closed-item and two open-ended questions were asked to elicit the students’ responses.

3.4 Procedure
In a pre-test, the participants representing a similar level of reading comprehension were selected. Students were given 15 minutes to read an approximately 800 word
long narrative and choose one correct option out of four possible from a multiple choice list. Those who provided five, six or seven correct answers were to participate in the second stage of an experiment. Such a threshold, 50%, 60% and 70%, allowed to select a group of participants on a similar level of EFL reading competence.

Thirty students achieved the intended score and were divided into two random groups. The control group, or the paper group, read a paper version of the text while the experimental group, or the computer group, worked with electronic texts displayed on a computer screen. The format of the reading comprehension test proper was similar to the one from the pre-test stage. The readers did not have to switch between the text format as the participants from the paper group\(^4\) provided the answers on paper and the readers from computer group\(^5\) underlined their answers in a Microsoft Word file. They were given 15 minutes to take the test.

To supplement the data, a post-study questionnaire was administered to examine the participants’ attitudes towards traditional and digital reading in a foreign language. It took the students approximately five minutes to complete the questionnaires.

4. Results
The paper and computer tests were marked and the results were compared to assess which of the two groups performed better with regard to EFL reading comprehension. The data were analysed by means of the programme STATISTICA. Two types of operations were performed, including descriptive statistics, that is the mean, median and SD, and inferential statistics, the student t-test and the nonparametric Mann-Whitney U test.

<table>
<thead>
<tr>
<th>READING COMPREHENSION</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group</td>
<td>7.13</td>
<td>7.00</td>
<td>1.06</td>
<td>5.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Experimental group</td>
<td>7.87</td>
<td>9.00</td>
<td>2.20</td>
<td>3.00</td>
<td>10.00</td>
</tr>
</tbody>
</table>

As shown in Table 2, the mean reading comprehension levels and other statistics were calculated for the two groups. There was a slight difference between the mean and the median in the control group, that is ±1.06. The test results were balanced and the points that the subjects scored ranged from five to nine. In the control group, however, correct answers were more varied. To be more precise,

\(^4\) The control group read the paper text *The Carpet Fitter* which was characterised by the following features: the format, A4; the font type, Times New Roman and the font size, 12.

\(^5\) The experimental group read the Microsoft Word version of the paper text *The Carpet Fitter* on a computer screen, the size 21.
higher dispersion of the test results around the mean 7.87 (±2.20) as well as more extreme values, ranging from 3 to 10 points, concerned the group reading a text on a computer screen. The results indicated that the group reading an article had higher mean value of reading comprehension.

The mean score comparisons did not render any statistical differences between the control and treatment group. Although t-test performed with two independent samples ($t = -1.16; df = 28; p = 0.25$) was not relevant, the box plots presented in the figure below show that the results in the computer group were slightly higher than the ones from the paper group.

Three types of questions were asked to check the students’ understanding of the p- and e-texts. They included surface questions (Q1, Q3, Q4, Q6,
Q7), inferential questions (Q2, Q5, Q8) and semantic questions (Q9, Q10). The analysis of the answers provided by the participants from the paper and computer group indicated that the students reading on a computer screen gave more correct answers.

As shown in Figure 3 and Table 3, the paper group outperformed the computer group with regard to Q6 and Q10. What proved to be the most problematic question for the subjects reading the text on paper was Q8 (33%) and Q9 (20%). At the same time, Q6 (53%) and Q10 (53%) got the lowest number of correct answers in the experimental group. For both groups, Q3 turned out to be the easiest question since all of the students answered it correctly.

Table 3. Percentage of correct answers provided by the paper and computer group.

<table>
<thead>
<tr>
<th>Question</th>
<th>ALL</th>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>87%</td>
<td>87%</td>
<td>87%</td>
</tr>
<tr>
<td>Q2</td>
<td>80%</td>
<td>73%</td>
<td>87%</td>
</tr>
<tr>
<td>Q3</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Q4</td>
<td>90%</td>
<td>80%</td>
<td>100%</td>
</tr>
<tr>
<td>Q5</td>
<td>80%</td>
<td>73%</td>
<td>87%</td>
</tr>
<tr>
<td>Q6</td>
<td>67%</td>
<td>80%</td>
<td>53%</td>
</tr>
<tr>
<td>Q7</td>
<td>83%</td>
<td>80%</td>
<td>87%</td>
</tr>
<tr>
<td>Q8</td>
<td>53%</td>
<td>33%</td>
<td>73%</td>
</tr>
<tr>
<td>Q9</td>
<td>40%</td>
<td>20%</td>
<td>60%</td>
</tr>
<tr>
<td>Q10</td>
<td>70%</td>
<td>87%</td>
<td>53%</td>
</tr>
</tbody>
</table>
Based on the table above, it is evident that the participants from the control and experimental groups were more successful with respect to the surface questions (Q1, Q3, Q4, Q6 and Q7). Therefore, one can ask whether they were less difficult for the subjects. The answer is not straightforward. Having assumed the statistical significance of differences at 0.05, one can refute the hypothesis about the difference in reading comprehension results both in the holistic approach (Z=1.88; p=0.06) and between groups – paper group (Z=1.77; p=0.07); computer group (Z=1.15; p=0.25). In order to assess that, the nonparametric Mann-Whitney U test was used.

Table 4. Means, medians, SD and between-group comparisons of reading comprehension of surface, semantic and inferential questions.

<table>
<thead>
<tr>
<th>SURFACE QUESTIONS</th>
<th>Median</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>26</td>
<td>25.60</td>
<td>3.65</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Control group</td>
<td>12</td>
<td>12.80</td>
<td>1.30</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Experimental group</td>
<td>13</td>
<td>12.80</td>
<td>2.86</td>
<td>8</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INFERENTIAL AND SEMANTIC QUESTIONS</th>
<th>Median</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>21</td>
<td>19.40</td>
<td>5.27</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Control group</td>
<td>11</td>
<td>8.60</td>
<td>4.34</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Experimental group</td>
<td>11</td>
<td>10.80</td>
<td>2.28</td>
<td>8</td>
<td>13</td>
</tr>
</tbody>
</table>
Interestingly, a subtle difference in the difficulty of the questions can be noticed in the figure above, which suggests that further research could potentially prove the accuracy of the statement mentioned above.

The subjects’ answers provided to the post-study questionnaire confirmed that more and more young people tended to opt for electronic versions of texts. **Question 1** asked the participants to mark on a scale the frequency with which they read paper and electronic texts. Even though no significant differences in the number of reading p- and e-texts on a weekly and monthly basis (or less often) were found, the figure below illustrates a significant advantage of e-texts over their paper counterparts with regard to day-to-day reading.

![Figure 6. Percentage of the students from the control and treatment group reading L1 and FL paper and computer versions of texts every day, once a week, once a month, a few times a year and once a year.](image)

The subjects were also unanimous in the choice of the electronic device that they used while reading e-texts. Smartphones got the largest number of students’ responses (n=23), superseding laptops (n=11), tablets (n=3) and e-readers (2).

In **Question 2** the students (n=1) from the control group expressed complete indifference towards reading paper texts in English. The remaining subjects either preferred reading electronic texts in English (n=7) or it made no difference to them what kind of a text they dealt with (n=7). As far as the treatment group was concerned, the three options got an even number of points from the participants, that is five each.

In the following question (**Question 3**), the readers were to state whether they were satisfied with the versions of the text that they had received during the experiment under discussion. The control group was to answer if they were content with a p-text whereas the experimental group was to express their attitudes towards the e-text. The students’ answers proved that eight participants from the paper group would prefer an electronic version of a text because, according to them, it was more comfortable to read on the screen. The remaining students (n=7) liked to work with a paper version of the text. They stated that it was comprehensible.
and legible, enabling them to find easily the key extracts without unnecessary disruptions. On the other hand, the majority of the readers from the experimental group were satisfied with electronic versions of the text (n=11). To justify their choices, they stated that they spent most of their time in front of computers and hence, they were accustomed to working with e-texts.

In **Question 4** both groups demonstrated similar preferences towards the reading comprehension practice during English lessons. While ten participants from both the control (n=5) and experimental group (n=5) preferred reading paper texts, 12 students opted for electronic versions of texts (the control group = 6; the treatment group = 6). The remaining subjects (n=8) would prefer to include these two kinds of instruction in their EFL classes.

On being asked (**Question 5**) whether the medium of a text could affect one’s reading comprehension, the participants were in a difference of opinion. While nine readers from the control group were convinced that the type of medium used did have influence on reading comprehension, nine participants from the treatment group stated that there was no connection between the two.

**5. Discussion**

The purpose of the present paper was to provide some background information to the experimental study which investigated the impact of traditional, that is paper-based, and electronic, that is computer-displayed, texts on EFL teenage students’ reading comprehension. A considerable body of evidence was accumulated which proved that it was e-texts that were associated with a poorer reading comprehension performance as opposed to traditional reading (e.g., Ackerman & Lauterman, 2012, Mangen et al., 2013; Hosseini et al., 2014). Nevertheless, the current study showed that the Polish students performed slightly better with e-texts than p-texts. As opposed to the findings from early 1990s, the present study proved that the experimental group achieved slightly better results than the control group, at the same time supporting the research carried out by Dundar and Akcayir (2012) or Porion et al. (2016). The scores achieved by the group of 30 Polish students of English allowed one to claim that the use of technology had a positive effect on the subjects’ reading comprehension. These differences, however, were not statistically significant.

Three limitations to this study need to be acknowledged. The first of them concerned the problem of self-reported data that came from the post-study questionnaire. In spite of the fact that the majority of the answers were carefully marked by the students, there were some instances of open-ended questions being left blank. The second limitation referred to the measure used to collect the data. There were only three types of multiple choice questions asked in a reading comprehension test. These questions were to check the students’ shallow and deep understanding of the text. Nevertheless, no open-ended questions in which
students were to write their own answers were assigned. The third limitation was connected with the introduction of semantic questions. Since they were to check the students’ knowledge of lexis used in the narratives, the provision of a correct answer was not strictly connected only with the comprehension of the text, but also readers’ general linguistic competence.

Taking into account the design of the study in question and the answers provided to the questionnaire, we are fully convinced that the research on reading comprehension of paper and electronic texts ought to be further pursued in Polish EFL classroom surroundings. The students’ answers showed that, in the majority of cases, whenever they were willing to read a text in English, they opted for its electronic version. More importantly, it was not computers or tablets that they relied on while reading e-texts in English, but smartphones were their most frequent choices. Therefore, it is justified to propose that the future area of investigation could target the analysis of reading comprehension of paper and electronic texts displayed on the screens of smartphones.

6. Conclusion

The results of our experimental study cannot be generalized. Nevertheless, not only do they give a very interesting account of how the conceptualization of literacy has been changing over the years, but also they represent a gradual cultural shift from a traditional to a more modern, and hence digital view on the ability to read. In our opinion, such inconsistencies which have characterised the last twenty years of research into traditional versus digital reading comprehension seem natural since they reflect humans’ increasing familiarity with and reliance on technology which, with the omnipresence of electronic gadgets from their infancy onwards, will probably become even more considerable in the foreseeable future.

References


The Choking Dog

“Come on, come on, move it, idiot!”

Joanne beat impatiently on the steering wheel of her Mercedes sports car. How stupid to get caught up in the rush hour! She had planned to leave work early this afternoon, at three o’clock, to give herself a chance to relax and have a bath before going out to a meeting of her local tennis club. But just at ten to three a client had arrived, and it was two hours before she had finished dealing with the man. When she came out of her office, all the other staff in the Highlight Advertising Agency had already left. Now she was stuck in a traffic jam in central Birmingham at 5:30, and at 6:30 she was expected to be chairing a meeting of the tennis club. There would be no time for any hot bath.

Ahead of her, the traffic was moving at last, and she swung quickly out into the centre lane to turn right, and raced the last half-mile through the quiet suburban streets to her house. Pulling up on the driveway, she leapt out of the car and ran for the house. As she opened the door, she nearly tripped over Sheba, who was standing behind it.

“Hey, Sheba, hello,” she said, bending down to stroke the large alsatian dog’s head, “I’ve got no time for you now, but I’ll take you out as soon as I get back from the tennis club.”

It was then that she noticed something worrying about the dog. Sheba seemed to be coughing or choking, her stomach pumping repeatedly as if she was trying to vomit something up. She was obviously in real discomfort and could hardly breathe; her sad eyes gazed up at Joanne helplessly.

“Oh damn, this is all I need now,” said Joanne to herself, dropping her briefcase and bending down to take a closer look, “a sick dog, today of all days!” On closer examination, Sheba did look very sick, and Joanne realised she would have to take her down to the vet immediately. Luckily, the vet’s surgery was only a few streets away, and Joanne quickly loaded the dog, still coughing and choking, into her car for the short drive.

When she got there, the surgery was just about to close for the day. Luckily, Dr. Sterne had not left yet, and when he saw the state of Sheba, he brought her quickly into his office.

“It looks like something is stuck in her throat,” said Dr. Sterne. It shouldn’t take me too long to get it out.”

“Listen, doctor, I’m really in a rush to get to a meeting – can I leave her with you, and go and get changed? I’ll be back in ten minutes to pick her up, then I’ll take her on to the meeting with me. Is that OK?”

“Sure,” said the doctor. “You get going. I’ll see you in ten minutes.”

Joanne jumped back into her car again, and made the quick trip round to her house in a couple of minutes. As she was once more entering the hallway, the
phone on the table by the door began to ring. She picked it up, annoyed by this additional interruption to her plans.

“This is Dr. Sterne,” said an anxious voice. “Is that you, Joanne?”

“Of course it’s me,” said Joanne, surprised at the sound of his voice, “no-one else lives here.”

“I want you to get right out of that house immediately,” said the doctor’s voice. “Right now. I’m coming round right away, and the police will be there any time now. Wait outside for us.” The phone went dead. Joanne stared at it. She was confused, but she was also a little frightened by the obvious fear in the voice of the doctor. She replaced the receiver, then quickly backed out of the door and ran into the street.

At that moment, a police car with its lights flashing swung round the corner and screeched to a stop outside the house. Two policemen got out. After briefly checking that she was the owner of the house, they ran into the house through the still open door, without explaining anything. Joanne was by now completely confused and very frightened. Then the doctor arrived.

“Where’s Sheba? Is she OK?” shouted Joanne, running over to his car.

“She’s fine, Joanne. I extracted the thing which was choking her, and she’s OK now.”

“Well what’s this all about? Why are the police in my house?”

Just then, the two policemen reappeared from the house, half-carrying a white-faced figure, a man in a dark grey sweater and jeans, who, it seemed, could hardly walk. There was blood all over him.

“My God,” said Joanne, “how did he get in there? And how did you know he was there?”

“I think he must be a burglar,” said the doctor. “I knew he was there because when I finally removed what was stuck in Sheba’s throat, it turned out to be three human fingers. I don’t think he’s a very happy burglar.”

READ THE QUESTIONS BELOW AND CHOOSE ONE CORRECT ANSWER:

1. **Where did Joanne work?**
   A. an advertising agency
   B. a vet’s surgery
   C. a Mercedes dealer’s office
   D. the text does not say

2. **Why was she angry at the beginning of the story?**
   A. She was lost.
   B. She had lost a client at work.
   C. She was stuck in a traffic jam.
   D. Her dog was sick.
3. Why did she take the dog to Dr. Sterne’s surgery?
   A. It was time for Sheba’s checkup.
   B. The dog couldn’t breathe properly.
   C. She wanted to get her out of the house.
   D. The doctor had asked to see her.

4. Why did she leave the dog at the surgery and drive home again?
   A. She wanted to catch a burglar.
   B. The dog was too sick to come home.
   C. The doctor wanted to keep her.
   D. Joanne wanted to change her clothes.

5. How long did it take Joanne to drive home from the surgery?
   A. two minutes
   B. ten minutes
   C. an hour
   D. the text does not say

6. What happened as she arrived home for the second time?
   A. The police arrived.
   B. The phone rang.
   C. The dog died.
   D. A burglar was just escaping.

7. Why did the doctor tell her to get out of the house?
   A. There was a dangerous dog in there.
   B. It was on fire.
   C. He knew there was a burglar inside.
   D. He wanted to meet her outside.

8. Why did the burglar look very sick?
   A. The police had caught him, and he would probably have to go to prison.
   B. He had caught a disease from the dog.
   C. He hadn’t found any valuable things to steal.
   D. The dog had bitten off his fingers.

9. The story says that the dog “gazed up at Joanne helplessly”. “Gazed” means:
   A. stared
   B. cried
   C. barked
   D. laughed

10. A “vet’s surgery” is probably:
    A. a serious operation
    B. a minor operation
    C. an animal doctor’s office
    D. a police station
Appendix 2

The Carpet Fitter

Eddie was a carpet fitter, and he hated it. For ten years he had spent his days sitting, squatting, kneeling or crawling on floors, in houses, offices, shops, factories and restaurants. Ten years of his life, cutting and fitting carpets for other people to walk on, without even seeing them. When his work was done, no-one ever appreciated it. No-one ever said “Oh, that’s a beautiful job, the carpet fits so neatly.” They just walked all over it. Eddie was sick of it.

He was especially sick of it on this hot, humid day in August, as he worked to put the finishing touches to today’s job. He was just cutting and fixing the last edge on a huge red carpet which he had fitted in the living room of Mrs. Vanbrugh’s house. Rich Mrs. Vanbrugh, who changed her carpets every year, and always bought the best. Rich Mrs. Vanbrugh, who had never even given him a cup of tea all day, and who made him go outside when he wanted to smoke. Ah well, it was four o’clock and he had nearly finished. At least he would be able to get home early today. He began to day-dream about the weekend, about the Saturday football game he always played for the local team, where he was known as “Ed the Head” for his skill in heading goals from corner kicks.

Eddie sat back and sighed. The job was done, and it was time for a last cigarette. He began tapping the pockets of his overalls, looking for the new packet of Marlboro he had bought that morning. They were not there.

It was as he swung around to look in his toolbox for the cigarettes that Eddie saw the lump. Right in the middle of the brand new bright red carpet, there was a lump. A very visible lump. A lump the size of – the size of a packet of cigarettes.

“Blast!” said Eddie angrily. “I’ve done it again! I’ve left the cigarettes under the blasted carpet!”

He had done this once before, and taking up and refitting the carpet had taken him two hours. Eddie was determined that he was not going to spend another two hours in this house. He decided to get rid of the lump another way. It would mean wasting a good packet of cigarettes, nearly full, but anything was better than taking up the whole carpet and fitting it again. He turned to his toolbox for a large hammer.

Holding the hammer, Eddie approached the lump in the carpet. He didn’t want to damage the carpet itself, so he took a block of wood and placed it on top of the lump. Then he began to beat the block of wood as hard as he could. He kept beating, hoping Mrs. Vanbrugh wouldn’t hear the noise and come to see what he was doing. It would be difficult to explain why he was hammering the middle of her beautiful new carpet.

After three or four minutes, the lump was beginning to flatten out. Eddie imagined the cigarette box breaking up, and the crushed cigarettes spreading out
under the carpet. Soon, he judged that the lump was almost invisible. Clearing up
his tools, he began to move the furniture back into the living room, and he was
careful to place one of the coffee tables over the place where the lump had been,
just to make sure that no-one would see the spot where his cigarettes had been lost.
Finally, the job was finished, and he called Mrs. Vanbrugh from the dining room
to inspect his work.

“Yes, dear, very nice,” said the lady, peering around the room briefly. “You’ll
be sending me a bill, then?”

“Yes madam, as soon as I report to the office tomorrow that the job is done.”
Eddie picked up his tools, and began to walk out to the van. Mrs. Vanbrugh
accompanied him. She seemed a little worried about something.

“Young man,” she began, as he climbed into the cab of his van, laying his
toolbox on the passenger seat beside him, “while you were working today, you
didn’t by any chance see any sign of Armand, did you? Armand is my parakeet.
A beautiful bird, just beautiful, such colors in his feathers... I let him out of his
cage, you see, this morning, and he’s disappeared. He likes to walk around the
house, and he’s so good, he usually just comes back to his cage after an hour or so
and gets right in. Only today he didn’t come back. He’s never done such a thing
before, it’s most peculiar...”

“No, madam, I haven’t seen him anywhere,” said Eddie, as he reached to start
the van. And saw his packet of Marlboro cigarettes on the dashboard, where he
had left it at lunchtime.... And remembered the lump in the carpet.... And realised
what the lump was.... And remembered the hammering.... And began to feel rather
sick....

READ THE QUESTIONS BELOW AND CHOOSE ONE CORRECT ANSWER:

1. **Why did Eddie hate being a carpet-fitter?**
   A. The pay was too low.
   B. He didn’t like working alone.
   C. No-one appreciated his work.
   D. He couldn’t smoke on the job.

2. **What did Eddie think of Mrs. Vanbrugh?**
   A. She was a kind, thoughtful lady.
   B. She was rich and selfish.
   C. She was always losing things.
   D. She had good taste in furniture.

3. **Why was Eddie called “Ed the Head” by his friends?**
   A. Because he was such an intelligent carpet-fitter.
   B. Because he had a large head.
   C. Because he was very proud and self-important.
   D. Because of his footballing skills.
4. What did Eddie want to do when he had finished fitting the carpet?
   A. have a cigarette
   B. hammer the carpet flat
   C. look for Mrs. Vanbrugh’s lost bird
   D. start work in the dining room

5. Why didn’t Eddie remove the carpet to take out the thing that was causing the lump?
   A. He couldn’t take the carpet up once he had fitted it.
   B. He didn’t need the cigarettes because he had some more in the van.
   C. It would take too long to remove the carpet and re-fit it.
   D. He intended to come back and remove the lump the next day.

6. What did Eddie do with the hammer?
   A. hammered nails into the lump
   B. fixed the coffee table
   C. left it under the carpet
   D. flattened the carpet

7. What was Mrs. Vanbrugh worried about?
   A. Her bird was missing.
   B. She thought the carpet was going to be too expensive.
   C. She thought Eddie had been smoking in the house.
   D. She couldn’t find her husband, Armand.

8. What was really under the carpet?
   A. the cigarettes
   B. Eddie’s toolbox
   C. nothing
   D. the missing bird

9. “Eddie was determined....” means that he:
   A. had no idea
   B. decided for sure
   C. felt very angry
   D. couldn’t decide

10. “Peculiar” in the sentence “He’s never done such a thing before, it’s most peculiar...” means:
    A. normal
    B. like a bird
    C. difficult
    D. strange