

Data Comparing Students' Experience Reading Paper Versus Ebooks

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学生の紙と電子書籍の読書体験を比較したデータ

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Abstract

The purpose of this research was to determine whether students preferred reading paper books or electronic books (ebooks) on their smartphones. The data was collected to provide the support for claims made in a recently published paper (Weinberg, 2023) outlining the hypothesized (but unproven) advantages and disadvantages of each method. The most preferred method was reading books on paper, although some students expressed an affinity for the convenience of reading on smartphones.

この調査は、学生が紙の本とスマートフォン上の電子書籍のどちらを読むことを好むかを判断することを目的とする。データは、各メソッドの仮説上の利点と欠点（未証明）を概説した、直近の発表論文（ワインバーグ、2023年）における主張を裏付けるために収集された。スマートフォンの利便性に親近感を示す学生がいたとはいえ、最も好まれた方法は紙の本であった。

Keywords : extensive reading, ebooks, paper books.

Introduction

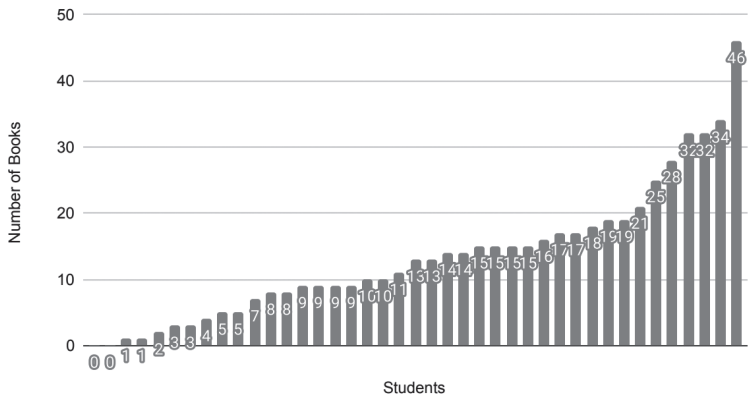
The benefits of extensive reading to assist second language acquisition have been well known and researched for many years (Grabe, 2010). Among the many benefits, Nation (2012) addresses how vocabulary is improved, while Pesce (2018) shows that confidence is also boosted through reading. As teachers become more aware of the benefits of extensive reading discussed by Weinberg (2017), more teachers are incorporating this reading assignment into their classes. At the same time, both the number of graded readers available in school libraries and the format in which those books can be read are increasing. Whether the books are printed on paper or are published in electronic form on the internet as ebooks, the quantity of titles has grown tremendously in recent years. Weinberg (2023) discusses several potential advantages and disadvantages of each format, but does not provide data to determine which format is most advantageous for students. This research paper is an attempt to provide that missing information.

At the end of the spring semester of 2023, students were surveyed in three classes (41 students) about their reading preferences and any trouble they experienced completing the reading assignments. The questions were as follows: How many paper books and ebooks did you read this semester for the extensive reading assignment? In which format were you able to read books faster? In which format were you able to stay focussed on the reading longer? What sorts of problems did you experience with each format? Which format did you prefer? In which format were you able to pass more Mreader quizzes (more about these quizzes in Weinberg, 2017). These questions were derived from the advantages and disadvantages Weinberg (2023) proposed, and were intended to validate or dispute the merits of each claim. The survey was conducted in class at the end of the semester. An online survey was created consisting of mostly multiple-choice questions in English. Short written responses were also requested for qualitative questions, and students were encouraged to use either English or Japanese in these answers. It was apparent from the survey results that the majority of students preferred reading books that were printed on paper, although a sizable minority said they liked many of the conveniences found in the ebook

option. This data will be useful to teachers when advising students about which method of reading to choose for extensive reading homework assignments.

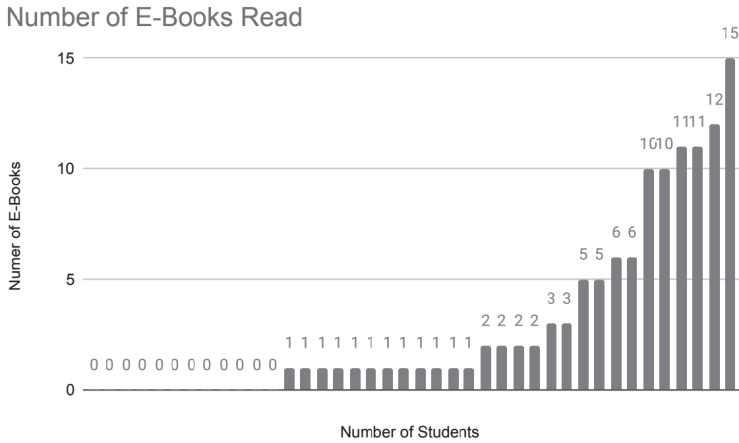
Data

Number of Paper Books Read



The first pieces of data collected were how many books of each format the students read. At the beginning of the semester the students were instructed how to borrow books from the schools' libraries, both on paper and on their electronic devices. All the students were specifically requested to attempt to read at least one book in both formats so that they could give informed responses for the end of the semester survey. All of the respondents' identities were kept anonymous. The ability level of the forty-one university students who participated in this research could be loosely categorized as high beginner to advanced. All of the students read at least one book, either in paper format or on their electronic devices as ebooks, however a few students neglected the instructions to read at least one book in each version. The highest number of paper books, 46, was read by one student. Two students read zero books in paper format. The average number of paper books was 13.46. The mode of 15 paper books was read by 4 students. When

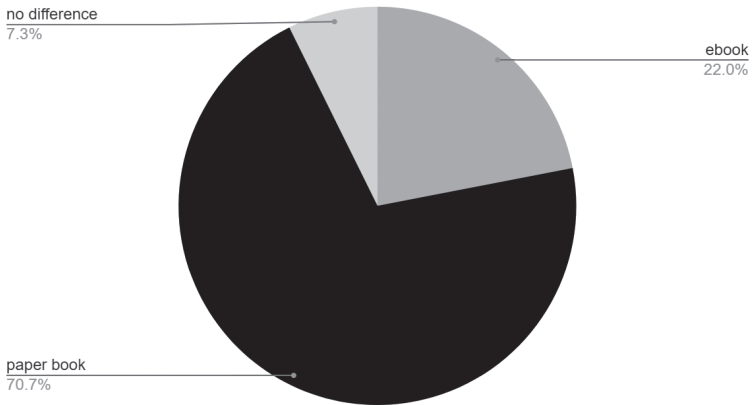
asked why they preferred reading paper books, the students provided many explanations such as the paper’s sensory appeal, the lack of technology required, and better comprehension of the text. These advantages are consistent with those proposed by Weinberg (2023). These students’ comments also align with a study by Baron (2016) which found that students considered paper-based reading to be “real reading” because the printed page allowed them to feel and smell the paper, and see where they were in the book.



The highest number of ebooks, 15, was read by one student. When asked to give reasons for her preference for ebooks, the student said she could read the books anytime she wanted, they were easy to carry, and that ebooks were easy for her to read. Twelve students read zero books on their smartphones. The average number of ebooks was 2.8. The mode of one ebook was read by 12 students. Some students mentioned that they preferred ebooks because the library’s paper books were old, dirty, and heavy. One student said that reading on ebooks was convenient when she did not understand a word because she could quickly and easily use a dictionary on her phone to find the definition. These benefits again align with the claims made by Weinberg

(2023) that students would find reading on their smartphones more convenient than paper books because they are easily accessible, easier to carry, and do not wear out over time. At the beginning of the semester, the students were shown an instructional video on how to borrow ebooks from the library using their electronic devices such as smartphones or personal computers. The video was also posted on the class's web page if the students wanted to watch it again. Nonetheless, some students found reading on their electronic devices troublesome because ebooks were difficult to access from off-campus locations, and because the selection of books was not as large online as it was in the library. These issues contributed to the low volume of ebooks read compared to paper books.

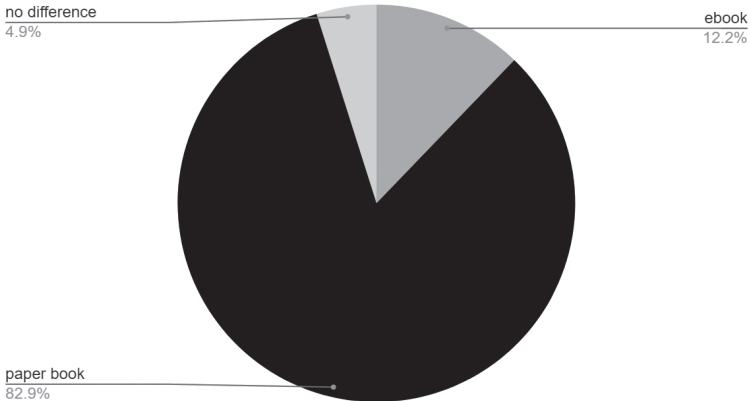
On Which Format Could You Read Faster?



One of the features that differentiates extensive from intensive reading is that the former is done at a much faster pace. Ideally students should be reading easy to comprehend books quickly (Day & Bamford, 1997). The students should not be slowed down by difficult vocabulary, subject matter, or format. If the students find one format slower than another, this would be a significant data point to track and would help teachers advise students about

best reading practices regarding the extensive reading assignment. Therefore, the students were asked which style of reading enabled them to read faster. Twenty nine students (70.7%) said they were able to read faster on paper books. Nine students (22%) were able to read faster on their smartphones. Three students (7.3%) found no difference between the two methods. Based on these results, it is clear that a significantly larger percentage of students were able to read paper books faster than ebooks.

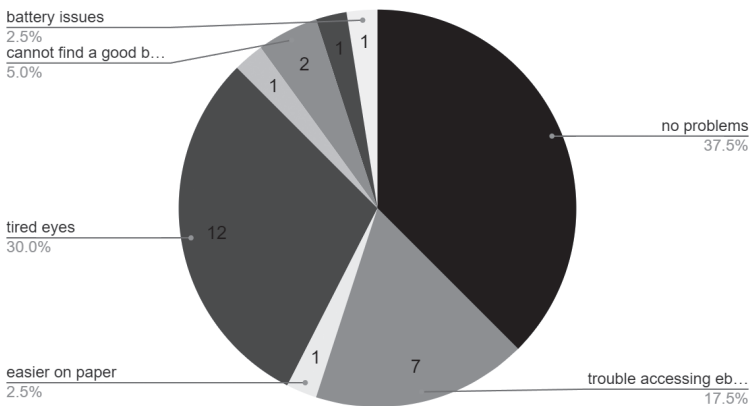
On Which Format Could You Stay Focused Longer?



Similar to the question above, it is also beneficial to know which style of book keeps the readers focused for a longer period of time. Thirty four students (82.9%) felt they were able to stay focused on the reading longer when they read paper books. Five students (12.2%) thought they were better able to stay focused when reading on their smartphones. Two students (4.9%) found no difference between the two methods. Some students said they wanted to read paper books to disconnect from their smartphones, and that if they read ebooks they were tempted to turn away from the books to look at their social media accounts or websites. This response is consistent with Weinberg's (2023) prediction that the temptation of social media's

banner updates that drop down over the screen (if enabled by the user) would prove to be a problematic distraction. Some students said that they felt eye strain and tiredness after reading their smartphone screens for extended periods of time, and therefore preferred to read paper books. Given these results, teachers would be well advised to encourage students to read paper books rather than ebooks on their smartphones. The distractions from the internet and health concerns that result from reading on their devices justify this advice.

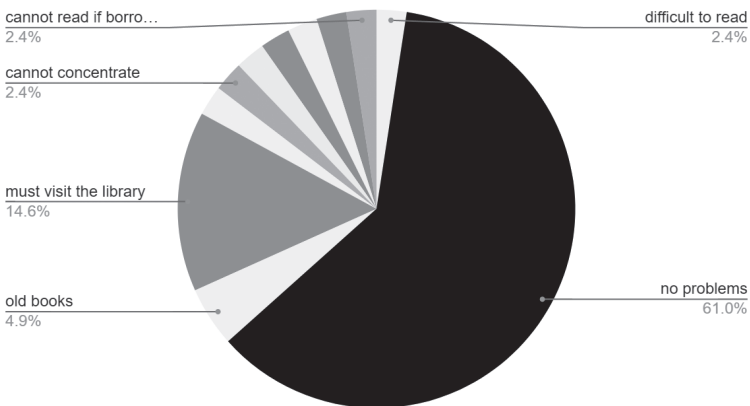
Problems With Ebooks



A variety of issues were given when the students were asked what problems they faced when reading ebooks on their smartphones. The most reported problem (seven students, 17.5%) was the difficulty in accessing the ebooks on the library's web page. This problem occurred because the university requires the students to access the library using a virtual private network (VPN) when they are not on campus. Several steps were required to access the books, and the instructions were not clear enough for some of the students to follow. This additional burden on the students was either too much trouble, or many students did not understand this requirement. Two

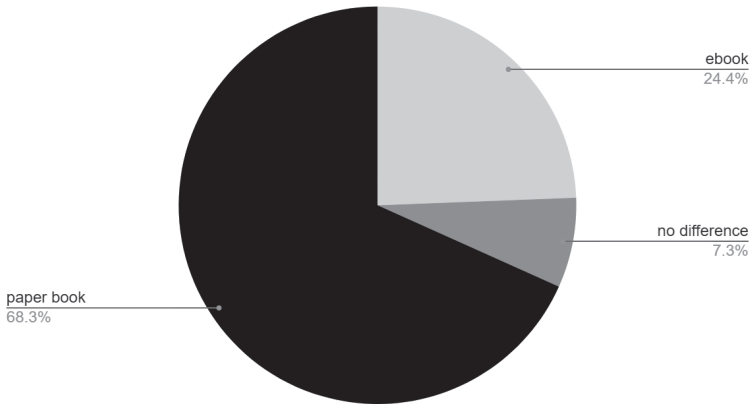
students (5%) said they were unable to find many good books from among the choices in the online catalog, indicating that the online collection of books was not as interesting or extensive as those on the shelves in the library. Students seemed to prefer holding the actual books in their hands, looking at the cover picture, and turning the books' paper pages. Twelve students (30%) complained of tired eyes and headaches after reading books on their smartphones. One student (2.5%) complained about the toll that reading on his smartphone took on his battery. One student (2.5%) was unhappy that he could not see the picture that accompanied the text while he was reading on his smartphone. One student (2.4%) mentioned experiencing "screen sickness" but did not give an explanation about the symptoms she felt. One student (2.5%) experienced trouble sleeping after reading on his smartphone and wondered if the reason was not attributable to the blue light emitted from his screen. Finally, one student (2.5%) simply commented that reading on paper was easier than reading on the phone's screen, although he did not provide an explicit description of what was easier. Fifteen students (37.5%) reported experiencing no trouble reading on their smartphones.

Problems With Paper Books



Similar to the previous question, there were many responses to the question asking about problems students had when reading books on paper. Six students (14.6%) complained about the inconvenience they felt by going to the library to borrow or return books. They felt that this took too much of their free time and cut into their ability to pursue other things like club activities or socializing with their friends in between classes or after school. Two students (4.9%) felt that the books were old and tattered and needed to be replaced with newer editions. One student (2.4%) mentioned that it took more time to borrow the books (i.e. visiting the library, selecting the books, the checkout process, etc.) compared to borrowing books directly onto his smartphone. One student (2.4%) complained that the paper books were cumbersome and one student (2.4%) said paper books were heavy compared to ebooks. One student (2.4%) said that the paper books were "difficult to read" but did not provide any context to understand what he had trouble with. One student (2.4%) was frustrated by the reality that if a different student borrowed a book he wanted to read, he was unable to read it until it was returned to the library. One student (2.4%) had trouble finding good books to read on the library's shelves. One student (2.4%) found that reading paper books was slower than reading on his smartphone and one student (2.4%) found it more difficult to concentrate on reading paper books compared to ebooks. When asked why they chose to read in the ebook format, several students responded that they appreciated the convenience of being able to access the books from anywhere, and the fact that they didn't need to physically visit the library to borrow or return the books.

Which Format Did You Prefer?

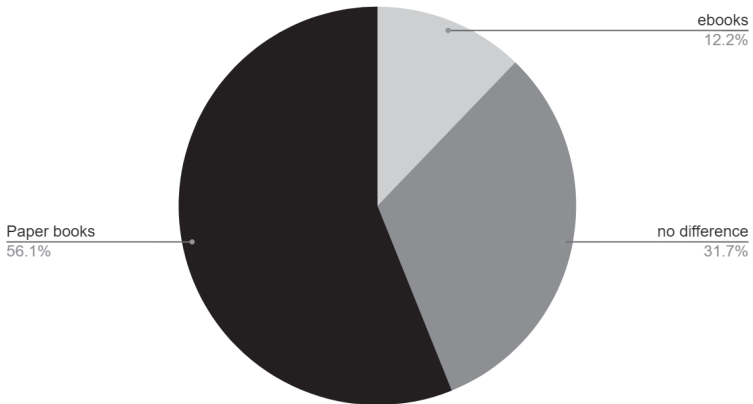


Twenty eight students (68.3%) said that they preferred reading books on paper. These students found it better to concentrate when they are not distracted by other functions on their phones. Some students mentioned that they wanted to save their phone's battery life for activities that could only be accomplished on their phones, and reading books could be done without draining their batteries. Paper books were easier to understand and produced less eye strain than reading on the small smartphone screen. One student mentioned that she felt a greater sense of accomplishment when she finished a paper book than when she read an ebook. A few students mentioned they liked the tactile feel of holding a paper book, and one student mentioned enjoying the smell of the paper.

Ten students (24.4%) preferred reading books on their smartphones. These students said they appreciated the convenience of reading on their phones and the fact that they didn't need to physically visit the library to borrow or return the books. They also liked reducing the amount of items they had to carry in their backpacks. Three students (7.3%) felt there was no difference between the two formats. When asked to explain why they liked paper books better, some students responded that they chose paper

books because they thought that reading books in English looked cool, or that they wanted to project a scholarly image to other people around them. All of these aspects of reading paper books were described by Weinberg (2023) and were predicted to promote more paper book reading.

On Which Format Did You Pass More Mreader Quizzes?



Students are required to read between 80,000 and 150,000 words per semester, depending on their ability level. An efficient way to keep track of how much students are reading is to use Mreader.org, a quiz website that rewards the students with the word count of the books when they pass the books' quizzes. Therefore, determining which style of reading helped the students to more easily pass the Mreader quizzes was of significant interest. A valuable conclusion of this research has proved to be that paper books were easier to understand than ebooks, and therefore the Mreader quizzes were easier to pass. Twenty three students (56.1%) found it easier to pass Mreader quizzes if they read a paper book, while just 5 students (12.2%) found the reverse to be true. Meanwhile, 13 students (31.7%) said they found no difference between the two styles. From these results, it can be concluded that more students will have better success passing the Mreader quizzes if they read

their books on paper versus on their smartphone.

Conclusion

The results of this research found that the majority of students preferred reading paper books over ebooks. Students who held this opinion concluded that paper books are easier and faster to read, easier to find in the library, easier to understand, less distracting than reading on their smartphones, and they were more successful passing the Mreader quizzes after reading books in paper format. A minority of the students involved in this research liked reading ebooks on their smartphones more than paper books because they were easier to carry and read, they were more convenient to borrow online compared to physically visiting the library, and the paper books were old and dirty by comparison. These opinions are consistent with the expected results predicted by Weinberg's (2023) "What are the advantages and disadvantages of Ebooks versus paper books?" Teachers can assist their students who are participating in extensive reading by informing them of the conclusions outlined in this research. Finding the best format to conduct extensive reading should help students improve their reading ability and improve their overall English learning experience.

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