EVALUATING THE IMPACT OF E-BOOK FEATURES ON READING COMFORT AND EXPERIENCE

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ABSTRACT

In the discussion of how features in eBooks affect readers comfort and usability as they read, this research zeroes into some of the key challenges the reader encounters in the digital readership. Some of these include eye strain while trying to read for long, sometimes without control over how bright the screen is nor about the font size and then there is no adapted mode for the screen where either night or bright are considered to enable reading, irrespective of the surrounding brightness of the light. The text becomes blurry at times for the readers, particularly when small fonts are used; the content also causes reader fatigue. Furthermore, if adjustments are not easy for the margins and zoom, focus on the content may be spoiled, and bad icon visibility often frustrates navigation and slows it up. For insights to these areas, a survey of eBook's usual readers was conducted to ascertain the kinds of uses it made, and their preference on eBooks. Key findings reveal improvements in comfort level and readability significantly based on different adjustable font size options in eBooks, available adjustable brightness level, and zoom functionality for flexibility in eye comfortability and focus throughout reading with little distortion. Rendering wider texts with several flexible screen modes may help eliminate other serious eye-straining issues, such as with unreadable icons used to provide smooth navigation. Through this consideration, it serves specific guidelines towards implementing improvements of eBook designs as a core component for improved readings for such users.

Keywords: eBook usability, Adaptive reading features, Visual ergonomics, Screenmodes, Eye fatigue.

1. INTRODUCTION

Ergonomics is the science of designing tools and environments to suit human needs and capabilities, and it plays a huge role in digital reading experiences. As eBooks have grown in popularity, so too has the need for ergonomic designs that are comfortable for the reader and easy to use. This research considers all eBook features like changing font sizes, changing brightness, changing modes, and sharp text settings and their effect on reader comfort and usability. More the world is being digitized, more becomes necessary to know how such settings would be effective on a person's comfort for the ultimate reading experience. Core belief in this research goes as it should be imperative to evolve digital reading platforms that suit varied user requirements. Many eBook readers have suffered from eye strain, difficulty to adjust between different lighting environments, and frustration when trying to navigate through texts due to bad interface designs. Although eBooks are indeed very convenient, these discomforts may hinder reading and engagement overtime. Thus, it is very important to study how major eBook features can be optimized for people to read more with enjoyment and accessibility. The matter is that, in digital reading, it does not confine its existence to one niche because it reaches every corner with its population and scenario. Now a days, eBooks have taken on the status of being incredibly popular and preferred over the print for study purposes as well as time pass for professional motives. However, eBooks may never reach its real needs of many people users without sufficient knowledge to those features which satisfy needs and make it comfortable both to eyes and brain by providing readers. Eye strain, low readability, and hard-to-read navigation are not minor hassles; they can undermine readers' comprehension, retention, and overall satisfaction of digital reading. Exploring user comfort through features of choice, such as setting personal preferences for font adjustments and screen modes, as well as brightness settings, offers scope for providing realizable, practical solutions to augment a digital reading interface. This research becomes necessary because the gap between user needs and current eBook design is deep. Much study has been done on the usage of eBooks and sometimes about digital reading in general, but almost none of these have tried to find a way to optimize certain features for reader comfort. This research bridges this gap by taking focus directly on features users interact with in reading. Nonetheless, this study also incurs some limits. One of the strong limitations is the multiplicity of devices on which eBook readers read. For a given e-reader, tablet or smartphone, the reader gets different capabilities in terms of customization and display quality so that the user's reading experience may be affected thereby. Moreover, as comfort and usability are aspects of nature, what succeeds for one reader will flop for another. Despite all these constraints, the results will reveal much-needed areas for improving eBook interfaces so that the readers can enjoy digital reading at its best and on every level.

2. PROBLEM STATEMENTS

One of the greatest problems eBook readers faces is visual strain during prolonged periods of reading. Since people increasingly read digitally, they find themselves complaining about discomforts such as eye fatigue, headaches, and difficulties concentrating. These often stem from small font sizes, poor contrast, and overly bright screens. The trouble begins when the

reader is not able to make settings suitable for different conditions such as reading in a dim room or under strong sunlight.

Since this factor directly impacts how people feel comfortable and attentive in the use of digital information, I chose to zero in on visual strain as my focal point. Whereas books in the physical paper format have comfort highly subject to the surroundings, eBooks seem to be more likely towards personalization. Yet when they are not well individualized, they will fall short of what can best be delivered by reading a book in the digital era.

This problem affects a large scope of readers, from recreation to studying or working purposes. Spending long hours over eBooks will lead to lost concentration and shorter periods of reading, if the visual strain problem persists, causing some not to read digitally anymore. This is a significant need to address in order for digital media to be easy to use and comfortable to everyone.

This paper's reason is based on the fact that it addresses one common, easy problem. eBooks come with some customization, although most are not applied, and even the ease is sometimes associated with designs creating discomfort. This research is based on how improving features such as adjustable font size and screen mode reduce eBook discomforts, which should make them comfortable to be used in various places.

Other problem statements include difficulties with adjusting to different lighting where most eBook readers have difficulties in reading comfortably under different lighting conditions, such as bright sunlight or dim rooms. Even with night or bright modes, some eBooks fail to adjust appropriately, and one finds it difficult to see the text clearly, hence discomfort. The next is, difficulty navigating and finding choices as eBook navigation can be difficult with very small or obscure icons, causing interruptions in flow, becoming frustrated, and lessening the pleasure of reading. Finally, limited zoom and margin availability for readers accessing mostly content-rich materials, such as diagrams, usually encounter problems from inadequate zoom and margin adjustments, which prevents them from reading clearly.

3. RESEARCH GAP

As eBooks gain popularity, there is a huge gap in understanding how eBook features satisfy the diverse needs of various readers. Readers come from all walks of life and have different tastes, capabilities, and problems that may significantly affect the reading experience. Most of the research, however tends to follow a one-size-fits-all approach without considering the way specific groups, such as those with visual impairments, learning disabilities, or varying literacy levels, engage with eBook technology.

It therefore implies that most of the users are missing the intended benefits provided by features tailored to enhance reading comfort and pleasure. Using such an approach, it would be possible to develop strategies for inclusion and accessibility of digital reading services.

This means understanding the needs of various users and how eBook platforms can be designed to actually enhance the reading experience - so all different users can connect with their digital content in a way they like.

Another research gap which can be considered is that the existing research on this topic which focuses on the impact of customization on reading comfort and experience remain relatively scarce, making this a valuable area for investigation.

4. LITERATURE REVIEW

Brightness of the screen affects how comfortable one can read from an e-book Screen brightness has a great impact on how comfortable people can be with reading from e-books. As far back as studies published by Shieh and Lin (2000), over brightness was identified to cause eye strain, headaches, and poor concentration. Devices even latest ones have incorporated automatic brightness adjustment based on the surrounding light for comfort.

Based on our investigation, we have observed that while these automated preferences offer many improvements, there still exists discomfort resultant from protracted reading under bright screens for most users. Until now, our findings suggest that screen brightness is crucial in making a session comfortable or otherwise, but research needs to be done to see how customized brightness levels might provide greater relief concerning eye strain.

Another feature that is crucial to e-books is the ability to change the size and style of the font, which relates directly to how well users can read. According to Bernard et al. (2003), studies indicate that bigger fonts and specific styles are used for improved reading; serif fonts are good examples of those fonts. The possibilities of font sizes and styles that

can be customizedin modern e-books generally offer better comfort in terms of providing the user's preferences with the text. From the analysis of our study, we saw that this flexibility does indeed make reading easier, yet there was little information on just how much these changes would really make in comprehension over the longer period. To date, what we've discovered is that tailoring is positive, and thus far, we have to learn more about its impact on the broader rangeof reading ease and comprehension over time periods longer than ours.

Page turning speed often gets underestimated, but it really can make a big difference as to thelevel of engagement that one can have with an e-book. According to the study of Kretzschmaret al. (2013), slow page transitions may frustrate readers by interrupting the flow of a reader. Our study agrees with this and showed that quicker page turns lead to better engagement, especially among fast readers. Still, it provides only limited information regarding visual effects of page-turn animation and their impact on the overall involvement in text. Hitherto, our findings indicate the optimization of page-turn speed does indeed increase user engagement, but further study would be needed to determine how such visual transition impacts immersion.

E-ink technology made e-reading look just like the paper, which is easier to read through thanLCD-based displays, that people associate with glare and eye fatigue. A study, for example bySiegenthaler et al. (2012), has shown how readers will prefer e-ink displays, especially when it is for long periods of reading because they become even more comfortable after a while.

Our experiments correlate with those findings and simply prove that e-ink is generally a morecomfortable option for long reading, but it has its own downsides in e-ink. Such disadvantages include slower refreshing of a page and lack of colour, which usually bounds its use compared to LCD screens. Up until now, our research shows that, although it is more comfortable, it does not meet the multi cloud feature of an LCD display.

While being one of the best features of e-books, annotating and highlighting are not very difficult tasks involving more interactive text. For example, research suggests that such features enhance understanding and involvement too. Readers have suggested that this is so since these features allow the reader to be more active with the content. The results replicate the pattern-we established that readers, particularly students and academics, often relied uponthese tools to make reading experience more fulfilling. However, what we have learned fromour research thus far is that the immediately accessible features often distract from the flow of his natural reading rhythm. So far, what our study has indicated is that while highlighting and annotations may be useful, there must be a fine balance on how these will not interfere with the act of reading.

5. RESULT ANALYSIS

Screen Brightness and Visual Comfort:

Screen brightness was considered one of the major factors to influence visual comfort for reading. In general, participants who utilized higher brightness levels reported experiencing more eye strain and discomfort, particularly for longer reading times. This cause may be because of the intensity of light, requiring further effort from the eyes to focus in highly illuminated environments. Reportedly, those who used the auto-brightness feature, which takes in the amount of brightness depending on ambient lighting, were reportedly subjected toless stress. However, it was evident that the adaptive technology was not completely effectivein totally solving the problem, as it showed that the users still experienced fatigue after extended periods of use.

I predicted the future development of the e-reader will include better regulation of brightness.Users might be able to adjust their readings to automatic preferences in relation to external lighting. Those may well extend over time to specific comfort levels and patterns of reading on the part of users.

What I understood is that the screen brightness is an absolutely key part of the reading experience. What's used today in auto-brightness solutions is better than nothing. Maybe the focus for developers will have to be on more sophisticated, AI-based approaches in which a system can better anticipate a user's needs for comfort and therefore respond appropriately-anoptimist might hope this leads to a more dynamic system that can sustain comfort for longer periods, including very long reading sessions.

Personalization Preference in Font Size and Style:

The most frequently used feature by learners who were looking forward to making reading more comfortable was the alteration of the font size and style. For the majority of them, the font size would be larger since individuals with reading needs take a longer time to finish what they read, and the larger size is not only easier but also does not strain the eyes. In addition, the style of the font also played its role. Readers preferred certain styles over othersthat seem more natural or readable, depending upon the kind of information they look to consume.

In a future perspective, advancement in e-book technology will be given to far more detailed font customization. Hence, it will automatically adjust based on the reading material, fatigue from user use, or personal preferences. The

demand for personalization of e-books would likely require that readers expect more intelligent and adaptive systems with better conditionsto satisfy their needs without continually having to manually adjust settings.

We could infer that the adjustment of the font for personal preference is a more significant aspect of personalization in a reading experience. Even though changing the size and style ofthe text makes it more comfortable, it presents much larger opportunities for innovation.

In the future, more developed font attributes in e-books might automatically change to makethings easier on the reader without forcing them to frequently input commands to facilitate better comfort on the readers' part.

Page Turn Speed and Reader Engagement:

Behavioural impact page turn speed was an understated but very important feature that affected reader engagement. Overall, a fast and smooth page turning pace usually made for easier concentration while reading. Lagging page transitions usually caused slight temporary interruptions in the flow of reading, leading to frustration and less satisfaction. Still, these interruptions appeared to have no effect on understanding or on recall of the information--and so the effect of page turn speed appears to be mostly emotive rather than cognitive.

In the future the change of direction in future e-reader technology may be geared towards optimizing page transitions to give a smoother and a more realistic reading experience. Futuredevices will most likely be equipped with faster and more responsive transitions, and that becomes the standard feature especially for those who are more into engagement and seamless flow of reading.

hat this outcome also suggests that turn speed of pages does not affect lack of understanding, it still helps in maintaining the reader's satisfaction and engagement. So developers may include page transition responsive behaviour when writing future e-books, especially when faced with sensitive users who are very susceptible to disruption of flow in reading. It may improve a less disjointed and interrupted reading experience.

E-Ink vs. LCD Displays

The technology used on screen-whether e-ink or LCD-mattered greatly when it came to reading comfort. E-ink displays, designed to emulate the look of paper, were easier to read for longer periods than LCDs because they also caused less eye strain. The reasons could be the absence of glare and a lower contrast level that minimizes fatigue visual. Compare to this, LCD screens with excellent color reproduction and display flexibility were said to be associated with higher perceived levels of discomfort when used for extended periods in areas of bright lighting.

Improving display technology may bring further refinement along both lines in e-ink and LCD technologies. There is every possibility that e-ink displays eventually materialize withcolour and faster refresh rates, promising much more versatility in reading experience without loss of comfort levels, and LCD screens with new features to decrease glare and minimize visual fatigue resulting from overuse.

I can conclude as of now that e-ink still holds ground as the most suitable choice for comfort- conscious readers, especially where contents are mostly in text or when reading is long.

However, LCDs remain more versatile for those who need more visual intensity. In the future, perhaps, ways will be found to harmonize these two technologies into making displaysmore applicable for reading experiences regardless of their length.

5. Annotation and Highlighting Features

E-book readers would widely use annotations and text highlighting, particularly for academic material whereby the purpose was research. Generally, such features were used because they made the engagement and readability much easier for the users to engage and remember much of the read. However, some users argue that the convenience in accessing tools tended to momentarily break their train of thought and distract them from material.

Future e-readers will likely introduce new modes of interaction with the text in ways that seem more intuitive and less obtrusive. For instance, it may come to a kind of annotation thatdoesn't distract too much or AI-based features that suggest optimal moments to make annotations so as not to break into the flow of reading.

We can infer that while annotation and highlighting tools can be used to aid comprehension,in use they often become distractions in that an overreliance on them takes away from the actual reading process. Future improvement for these features may reside in balancing interactivity with immersion, so readers are able to engage the text without losing their connection to the narrative or flow of information.

6. UNEXPECTED FINDINGS

Although comfort aspects such as font size changes, brightness control, and highlighting increase comfort, they may also introduce distraction to the flow ofthe reading and immersion and contribute to decreased engagement in some cases as the frequency of changes creates disruption and pulls out the readers from the content. In addition, adaptive

features such as auto brightness may not clearly meet the expectations of the user, leading to frustration. These findings reflect the difference in user needs and present eBook interface designs, making a plea for more responsive and friendly systems that should ensure both comfort and concentration.

The findings from this research underscore the significant impact of customizable eBook features on improving reading comfort and user experience. Visual strain, navigation challenges, and poor adaptability to different lighting conditions remain key barriers to digital reading engagement. Customizable features like font size adjustments, screen brightness controls, and flexible screen modes are essential in addressing these issues and enhancing overall usability.

Insights from user surveys reveal that readers value these customizable options, which can significantly reduce eye fatigue and make prolonged reading sessions more comfortable. However, current eBook designs often fall short in fully realizing these benefits due to inadequate implementation or limited functionality, particularly in features like seamless zoom, adaptive margins, and intuitive navigation icons.

Bridging these gaps is crucial, not only for improving the ergonomics of digital reading but also for ensuring accessibility and inclusivity for diverse users, including those with specific needs or disabilities. Future eBook designs should prioritize the development of more adaptive interfaces, tailored to varying user preferences and environmental contexts.

By focusing on these areas of improvement, eBook platforms can evolve to provide a reading experience that rivals, and even surpasses, traditional print formats in comfort, engagement, and accessibility. As the world continues to embrace digital media, optimizing these features is vital for meeting the growing demands of a diverse and expanding readership.

7. SCOPE OF RESEARCH

Future studies will research the long-term effect that eBook reading has on an individual's eye health as well as their general understanding of the material being read when they read for long periods on these electronic devices. Another study may focus on the development of new adaptive features and how AI technologies can be utilized to auto-adjust brightness and font sizes, including screen modes, based on user behaviour, environmental, and other ambient conditions. The developed eBooks will be inclusive to users with disabilities, such as the visually impaired or learning disabilities, to increase accessibility and usability of the digital reading platforms for more groups. Inclusion of new technologies, such as the e-ink with colour display or AR features, would be another chance to make reading easier.

8. CONCLUSION

The results from this study reinforce the fact that customizable features on eBooks have been a determinant of comfort when reading, further enhancing the general user experience. Visual strain and navigation continue to rank amongst those impediments as well as adaptation to multiple illuminations. In this end, customizable eBook features- include font size alteration, adjustments of brightness control, or flexible screen mode- feature as the remedy to many of these aspects and consequently usability.

From the user surveys, insights reveal that readers appreciate the customization options and can significantly help in reducing eye fatigue and thus make reading for long hours much more comfortable. However, the eBook designs are often insufficient in completely utilizing these benefits as the implementation is often inadequate or limited in functionalities, especially seamless zoom, adaptive margins, and intuitive navigation icons.

Bridging these gaps is important not only for the improvement of digital reading ergonomics but also to ensure accessibility and inclusiveness to diverse users, including those with specific needs or disabilities. Future eBook designs should focus more on the development of more adaptive interfaces tailored to varying user preferences and environmental contexts. By focusing on these areas of improvement, eBook platforms can evolve to provide a reading experience that rivals, and even surpasses, traditional print formats in comfort, engagement, and accessibility. As the world continues to embrace digital media, optimizing these features is vital for meeting the growing demands of a diverse and expanding readership.

9. REFERENCE

[1] Woody, W. D., Daniel, D. B., & Baker, C. A. (2010). E-books or textbooks: Students prefer textbooks. Computers & Education, 55(3), 945– 948. https://doi.org/10.1016/j.compedu.2010.04.005

[2] Blummer, B. (2006). E-Books revisited. Internet Reference Services Quarterly, 11(2), 1– 13. https://doi.org/10.1300/j136v11n02_01

[3] Shieh, K., & Lin, C. (2000). Effects of screen type, ambient illumination, and color combination on VDT visual performance and subjective preference. International Journal of Industrial Ergonomics, 26(5), 527–536. https://doi.org/10.1016/s0169-8141(00)00025-1

[4] Bernard, M. L., Chaparro, B. S., Mills, M. M., & Halcomb, C. G. (2003). Comparing the effects of text size and format on the readability of computer-displayed Times New Roman and Arial text. International Journal of Human-Computer Studies, 59(6), 823– 835. https://doi.org/10.1016/s1071-5819(03)00121-6

[5] Kretzschmar, F., Pleimling, D., Hosemann, J., Füssel, S., Bornkessel-Schlesewsky, I., & Schlesewsky, M. (2013). Subjective Impressions Do Not Mirror Online Reading Effort: Concurrent EEG-Eyetracking Evidence from the Reading of Books and Digital Media. PLoS ONE, 8(2), e56178. https://doi.org/10.1371/journal.pone.0056178

[6] Siegenthaler, E., Schmid, L., Wyss, M., & Wurtz, P. (2012). LCD vs. E-ink: An Analysis of the Reading Behaviour. Journal of Eye Movement Research, 5(3). https://doi.org/10.16910/jemr.5.3.5

[7] National Library & Documentation Services Board. (2019). Proceedings: library, information & documentation in a context of transformation. https://diglib.natlib.lk/bitstream/handle/123456789/26276/3rd%20NATIONAL%20LIBR ARY%20RESEARCH%20SYMPOSIUM%20%E2%80%93%202019.pdf?sequence=1&i sAllowed=y#page=231

[8] Fojtik, R. (2015). eBooks and Mobile Devices in Education. Procedia - Social and Behavioural Sciences, 182, 742-745.doi: 10.1016/j.sbspro.2015.04.824

[9] Maxim, A., & Maxim, A. (2012). The Role of e-books in Reshaping the Publishing Industry. Procedia - Social and Behavioural Sciences, 62, 1046-1050. doi: 10.1016/j.sbspro.2012.09.178

[10] Zhang, T., Niu, X., & Promann, M. (2017). Assessing the User Experience of E-Books in Academic Libraries. College & Research Libraries, 78(5). https://doi.org/10.5860/crl.78.5.578

[11] National Library & Documentation Services Board. (2019). Proceedings: library, information & documentation in a context of transformation.

[12] https://diglib.natlib.lk/bitstream/handle/123456789/26276/3rd%20NATIONAL%20LIBR ARY%20 RESEARCH%20SYMPOSIUM%20%E2%80%93%202019.pdf?sequence=1&isAllowed=y#page=231

[13] Bennett, L., & Landoni, M. (2005). E-books in academic libraries. The Electronic Library, 23(1), 9–16. https://doi.org/10.1108/02640470510582709

[14] National Library & Documentation Services Board. (2019). Proceedings: library, information & documentation in a context of transformation.

[15] https://diglib.natlib.lk/bitstream/handle/123456789/26276/3rd%20NATIONAL%20LIBRARY%20RESEARCH %20SYMPOSIUM%20%E2%80%93%202019.pdf?sequence=1&isAllowed=y#page=231

[16] Szapkiw, A., Holder, D., & Dunn, R. (2011). Motivating Students to Learn: Is There a Difference between Traditional Books and e-Books? Global Learn, 2011(1), 235–239. https://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1207&context=educ_fac_ pubs

[17] Jones, T., & Brown, C. (2011). Reading Engagement: A Comparison between E-Books and Traditional Print Books in an Elementary Classroom. International Journal of Instruction, 4(2), 5–22. http://files.eric.ed.gov/fulltext/ED522678.pdf

[18] Uygarer, R., & Uzunboylu, H. (2017). An Investigation of the Digital Teaching Book Compared to Traditional Books in Distance Education of Teacher Education Programs. Eurasia Journal of Mathematics Science and Technology Education, 13(8). https://doi.org/10.12973/eurasia.2017.00830a

[19] Gibbons, S. (2001). eBooks: Some Concerns and Surprises. Portal Libraries and the Academy, 1(1), 71–75. https://doi.org/10.1353/pla.2001.0010

[20] Nelson, M. R. (2008). E-Books in Higher Education: Nearing the End of the Era of Hype?. Educational Review, 43(2), 40–42. https://er.educause.edu/~/media/files/article-downloads/erm0822.pdf

[21] Staiger, J. (2012). How E-books Are Used. Reference & User Services Quarterly, 51(4), 355–365. https://doi.org/10.5860/rusq.51n4.355

[22] Gibson, C., & Gibb, F. (2011). An evaluation of second-generation ebook readers. The Electronic Library, 29(3), 303–319. https://doi.org/10.1108/02640471111141061

[23] Martinez-Estrada, P. D., & Conaway, R. N. (2012). EBooks. Business Communication Quarterly, 75(2), 125–135. https://doi.org/10.1177/1080569911432628

[24] Richardson, J. V., & Mahmood, K. (2012). eBook readers: user satisfaction and usability issues. Library Hi Tech, 30(1), 170–185. https://doi.org/10.1108/07378831211213283

[25] Williams, C., Wright, B., Callaghan, G., & Coughlan, B. (2002). Do Children with Autism Learn to Read more

Readily by Computer Assisted Instruction or Traditional Book Methods? Autism, 6(1), 71–91. https://doi.org/10.1177/1362361302006001006

[26] Bloom, H. (1995). The western canon: the books and school of the ages. Choice Reviews Online, 32(06), 32–3145. https://doi.org/10.5860/choice.32-3145

[27] Christensen, C. M. (2013). The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail. http://catalog.lib.kyushu-u.ac.jp/ja/recordID/1001598268

[28] Elley, W. B., & Mangubhai, F. (1983). The Impact of Reading on Second Language Learning. Reading Research Quarterly, 19(1), 53. https://doi.org/10.2307/747337

[29] What Do We Expect Storybook Reading to Do? How Storybook Reading Impacts Word Recognition. (2003). In Routledge eBooks (pp. 363–383). https://doi.org/10.4324/9781410607355-24

[30] O'Reilly, T., & McNamara, D. S. (2007). The Impact of Science Knowledge, Reading Skill, and Reading Strategy Knowledge on More Traditional "High-Stakes" Measures of High School Students' Science Achievement. American Educational Research Journal, 44(1), 161–196. https://doi.org/10.3102/0002831206298171

[31] Daneman, M., & Carpenter, P. A. (1980). Individual differences in working memory and reading. Journal of Verbal Learning and Verbal Behavior, 19(4), 450–466. https://doi.org/10.1016/s0022-5371(80)90312-6

[32] Gough, P. B., & Tunmer, W. E. (1986). Decoding, Reading, and Reading Disability.

[33] Remedial and Special Education, 7(1), 6–10. https://doi.org/10.1177/074193258600700104

[34] Littau, K. (2008). Theories of reading: books, bodies, and bibliomania. Choice Reviews Online, 45(08), 45–4165. https://doi.org/10.5860/choice.45-4165

[35] Öztürk, B. K. (2021). Digital Reading and the Concept of Ebook: Metaphorical Analysis of Preservice Teachers' Perceptions Regarding the Concept of Ebook. SAGE Open, 11(2). https://doi.org/10.1177/21582440211016841

[36] Troseth, G. L., Strouse, G. A., Flores, I., Stuckelman, Z. D., & Johnson, C. R. (2019). An enhanced eBook facilitates parent–child talk during shared reading by families of low socioeconomic status. Early Childhood Research Quarterly, 50, 45–58. https://doi.org/10.1016/j.ecresq.2019.02.009

[37] Lam, P., Lam, S. L., Lam, J., & McNaught, C. (2009). Usability and usefulness of eBooks on PPCs: How students' opinions vary over time. Australasian Journal of Educational Technology, 25(1). https://doi.org/10.14742/ajet.1179

[38] Szapkiw, A., Holder, D., & Dunn, R. (2011b). Motivating Students to Learn: Is There a Difference between Traditional Books and e-Books? Global Learn, 2011(1), 235–239. https://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1207&context=educ_fac_pubs

[39] Staiger, J. (2012b). How E-books Are Used. Reference & User Services Quarterly, 51(4), 355–365. https://doi.org/10.5860/rusq.51n4.355

[40] Gilbert, R. J. (2015). E-books: A Tale of Digital Disruption. The Journal of Economic Perspectives, 29(3), 165–184. https://doi.org/10.1257/jep.29.3.165

[41] Littman, J., & Connaway, L. (2004). A Circulation Analysis of Print Books and E-Books in an Academic Research Library. Library Resources and Technical Services, 48(4). https://doi.org/10.5860/lrts.48n4.8259

[42] Widdowson, P. (1982). Re-reading English. http://ci.nii.ac.jp/ncid/BA60616837

[43] Elley, W. B., & Mangubhai, F. (1983b). The Impact of Reading on Second Language Learning. Reading Research Quarterly, 19(1), 53. https://doi.org/10.2307/747337

[44] Ahmadi, M. R. (2017). The Impact of Motivation on Reading Comprehension.

[45] International Journal of Research in English Education, 2(1), 1–7. https://doi.org/10.18869/acadpub.ijree.2.1.1

[46] Connelly, S. L., Hasher, L., & Zacks, R. T. (1991). Age and reading: The impact of distraction. Psychology and Aging, 6(4), 533–541. https://doi.org/10.1037/0882-7974.6.4.533

[47] Thornton, A. (2006). Reading history sideways: the fallacy and enduring impact of the developmental paradigm on family life. Choice Reviews Online, 43(07), 43–4357. https://doi.org/10.5860/choice.43-4357

[48] Freire, P. (1983). The Importance of the Act of Reading. Journal of Education, 165(1), 5–11. https://doi.org/10.1177/002205748316500103

[49] Sadiku, L. M. (2015). The Importance of Four Skills Reading, Speaking, Writing, Listening in a Lesson Hour.

European Journal of Language and Literature, 1(1), 29.https://doi.org/10.26417/ejls.v1i1.p29-31

[50] Dutta, S. (2019). THE IMPORTANCE OF "ENGLISH" LANGUAGE IN TODAY'S WORLD. International Journal of English Learning & Teaching Skills, 2(1), 1028–1035.https://doi.org/10.15864/ijelts.2119

[51] Morris, M., & Maxey, S. (2014). The Importance of English Language Competency inthe Academic Success of International Accounting Students. Journal of Education for Business, 89(4), 178–185. https://doi.org/10.1080/08832323.2013.819315

[52] Benedetto, S., Drai-Zerbib, V., Pedrotti, M., Tissier, G., & Baccino, T. (2013). E-Readersand Visual Fatigue. PLoS ONE, 8(12), e83676. https://doi.org/10.1371/journal.pone.0083676

[53] Kang, Y., Wang, M. J., & Lin, R. (2008). Usability evaluation of E-books. Displays, 30(2), 49–52. https://doi.org/10.1016/j.displa.2008.12.002

[54] Takahira, H., Ishikawa, R., Kikuchi, K., Shinkawa, T., & Yamada, M. (2014). Analysis of Gaze Movement while Reading E-Books. IEICE Transactions on Fundamentals of Electronics Communications and Computer Sciences, E97.A(2), 530–533. https://doi.org/10.1587/transfun.e97.a.530