

DIGITAL READING VS PRINT READING: COGNITIVE DIFFERENCES

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Abstract. *This article examines the cognitive differences between digital and print reading. The study focuses on how people read, process information, and develop comprehension skills in these environments. In addition, from this article we can understand psychologists and scientists' opinions about Deep Reading, "Biliterate Brain", Memory, Attention and Concentration.*

Key words: *Digital Reading; Print Reading; Biliterate Brain; Deep Reading; Cognitive Differences; Memory; Attention; Concentration.*

Annotatsiya. *Ushbu maqola raqamli va bosma o'qish o'rtasidagi kognitiv farqlarni tahlil qiladi. Tadqiqot insonlarning ushbu muhitlarda qanday o'qishi, ma'lumotni qay tarzda qayta ishlashi va tushunish ko'nikmalarini qanday rivojlantirishiga qaratilgan. Bundan tashqari, ushbu maqola orqali psixologlar va olimlarning "Deep Reading" (chuqur o'qish), "Biliterate Brain" (ikki tomonlama savodxonlik), xotira, diqqat, va konsentratsiya haqidagi fikrlarni tushunish mumkin.*

Kalit so'zlar: *Raqamli o'qish; Bosma o'qish; Biliterate Brain; Chuqur o'qish; Kognitiv farqlar; Xotira; Diqqat; Konsentratsiya.*

Аннотация: *Данная статья рассматривает когнитивные различия между цифровым и печатным чтением. Исследование сосредоточено на том, как люди читают, обрабатывают информацию и развивают навыки понимания текста в этих условиях. Кроме того, данная статья помогает понять мнения психологов и ученых о «глубоком чтении» (Deep Reading), «двусторонней грамотности» (Biliterate Brain), памяти, вниманию и концентрации.*

Ключевые слова: *Цифровое чтение; Печатное чтение; Biliterate Brain; Глубокое чтение; Когнитивные различия; Память; Внимание; Концентрация.*

Introduction. The rapid development of digital technologies has significantly changed the way people read and process information. Today, many individuals prefer reading on smartphones, tablets, and computers instead of traditional printed books. This shift has

attracted the attention of researchers, psychologists, and educators who study the cognitive differences between digital reading and print reading. Scientists have examined how these two forms of reading influence comprehension, memory, attention, concentration, and critical thinking.

Maryanne Wolf (2018), explains that digital reading may reduce “deep reading,” which is the ability to think critically, reflect, and analyze complex ideas. Wolf (2018) argues that printed texts help readers concentrate better because paper reading involves fewer distractions than screens. Naomi Baron (2015), studies students’ reading preferences and comprehension levels. She finds that many students preferred printed texts for academic learning because they could focus more easily and remember information better. Nicholas Carr (2010), argues that constant exposure to digital media weakens attention span and encourages superficial reading habits. According to him, online reading often leads to skimming rather than careful analysis. Because much digital reading and internet use can change the way people think and read.

Main Body. Printed reading has been widely researched in the fields of education, psychology, and cognitive science. Researchers have investigated how reading physical texts influences comprehension, concentration, memory retention, and critical thinking.

Patricia Alexander (2017), printed reading improves deep comprehension and analytical thinking. Her research showed that readers usually remember information more effectively when reading physical books because printed texts help maintain concentration and reduce distractions. Alexander explained that readers interact with paper texts more carefully, as it helps long-term memory and reflective understanding. However, she also noted that printed resources may be less accessible and less convenient than digital materials for modern students and researchers.

“Print reading” refers to reading information from physical materials such as books, journals, newspapers, and academic articles. Researchers believe that printed texts support intellectual focus and cognitive engagement.

The cognitive influence of traditional reading environments is examined by Patricia Greenfield (2009). She argues that printed reading encourages sustained attention and thoughtful interpretation of information. According to her studies, readers of physical texts are more likely to engage in detailed analysis and careful reflection. She also explained that print reading supports imagination and cognitive development because readers process information without constant digital interruptions. The positive and negative effects of print reading were mainly explained by Patricia Alexander (2017), and Patricia Greenfield (2009):

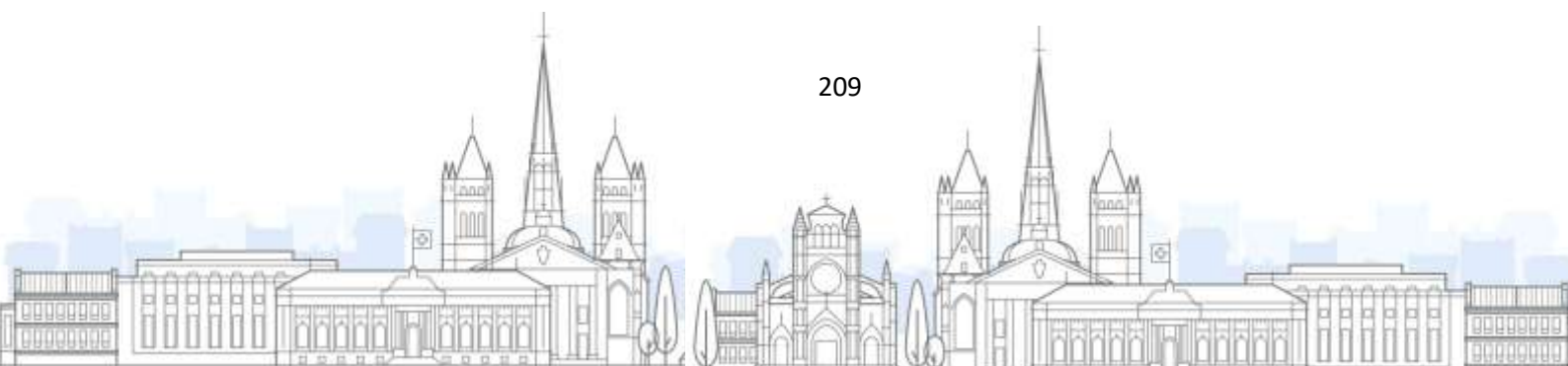


Table 1

Positive Effects of Print Reading:	Improves focus and concentration
	Supports deep understanding
	Enhances long-term memory
	Develops critical thinking

Table 2

Negative Effects of Print Reading:	Less portable than digital devices
	Difficult to search information quickly
	Requires physical storage
	Limited accessibility in some situations

Through Print Reading we can improve our concentration, deep comprehension, memory retention because readers can focus better without digital distractions. However, Print Reading is less portable and makes searching information slower compared to digital reading.

Digital reading also has become an essential part of modern education and communication. Researchers have examined how reading from screens affects comprehension, attention span, memory, and learning behavior.

Ziming Liu (2005), digital readers often engage in browsing, scanning, and selective reading rather than careful linear reading as online readers usually focus on speed and rapid information processing. He claims that digital technologies improve accessibility and make information retrieval faster and more convenient also he warns that screen reading may reduce deep comprehension and encourage superficial reading habits because readers are frequently distracted by hyperlinks and multimedia content.

“Digital reading” refers to reading information through electronic devices such as smartphones, tablets, computers, and e-books. Researchers believe that digital technologies increase accessibility and flexibility in modern learning environments.

Jakob Nielsen (1997), maintains online reading patterns and later develops research about web usability and digital readers scan webpages instead of reading every line carefully. His outlines demonstrate that readers usually search for keywords, headings, and

highlighted information while reading online. Digital Reading also improves efficiency and allows users to process large amounts of information quickly. The benefits and drawbacks associated with digital reading have been widely discussed in the scholarly works of Ziming Liu (2005), and Jakob Nielsen (1997):

Table 3

Positive Effects of Digital Reading:	Provides immediate access to information
	Supports interactive multimedia learning
	Improves communication and accessibility
	Convenient and portable

Table 4

Negative Effects of Digital Reading:	Reduce deep concentration
	Encourages skimming and scanning
	Causes eye strain and mental fatigue
	Increases distractions from notifications

From these two tables, we understand that Digital Reading is very useful in modern education since it provides fast access to information, interactive learning opportunities, and convenient communication. However, excessive screen reading may reduce deep concentration and encourage superficial reading habits such as skimming and scanning.

Conclusion. In this article, we learn according to various scholars about Cognitive Differences between Print Reading and Digital Reading. Print Reading is flexible with its long-term memory, critical thinking development and support deep understanding, while Digital Reading is convenient with its portable, modern technologies and interactive multimedia learning.

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