



# Investigating The Impact Of Digital Vs. Traditional Reading Habits On Comprehension And Engagement Among Middle School Students

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## ABSTRACT

This study investigates the impact of digital versus traditional reading habits on comprehension and engagement among middle school students. With the increasing prevalence of digital reading formats, understanding how these modes affect students' academic performance is crucial. The research is guided by four objectives: (1) to determine the reading preferences of middle school students between digital and traditional formats, (2) to assess how these reading habits influence reading comprehension, (3) to evaluate the level of student engagement and motivation associated with each reading mode, and (4) to explore the relationship between the mode of reading and academic performance in reading related subjects. A survey methodology was used, collecting data from middle school students to measure their preferences, comprehension levels, engagement, and academic outcomes associated with digital and traditional reading. The findings reveal nuanced insights into how different reading formats cater to varying student needs, with implications for educators aiming to optimize literacy instruction in a digitally evolving educational landscape. The study concludes that while digital reading offers accessibility and interactive features that can enhance engagement, traditional reading remains more effective in supporting deep comprehension and academic performance. The results underscore the importance of a balanced approach to integrating both digital and traditional reading materials in middle school curricula to foster comprehensive literacy development.

**Keywords:** Reading, Digital Reading, Traditional Reading, Comprehension, Engagement, Middle School Students, Academic Performance.

## 1. Introduction

The advent of digital technology has significantly transformed how people consume information, particularly in the realm of reading. With the widespread availability of digital devices such as e-readers, tablets, and smartphones, traditional print reading is increasingly being replaced by digital reading. This shift is especially evident among younger populations, including middle school students, who are growing up in an environment where digital media is pervasive. However, this transition raises critical questions about the impact of digital reading habits on students' comprehension and engagement compared to traditional reading methods.

Reading comprehension is a fundamental skill that underpins academic success across all subjects. The medium through which students engage with reading materials may influence their ability to process and retain information. Additionally, student engagement with reading material is crucial for developing a lifelong love of reading, which is essential for continuous learning. Understanding the differences in how digital and traditional reading habits affect comprehension and engagement can provide valuable insights for

educators, parents, and policymakers. This study aims to investigate these differences among middle school students, a group at a pivotal stage in their educational development.

The evolution of reading habits from traditional print to digital formats has sparked considerable academic interest, particularly concerning its effects on reading comprehension and student engagement. Middle school students, who are at a critical stage in developing reading skills, are increasingly exposed to both digital and traditional reading materials. This literature review examines existing research on the impact of digital versus traditional reading habits on comprehension and engagement, focusing on middle school students.

### 1.1 Digital Reading Habits and Comprehension

Digital reading, which includes eBooks, online articles, and other web based texts, offers interactive features like hyperlinks, multimedia, and search functions that can enhance the reading experience. However, research indicates mixed results regarding its impact on comprehension. For instance, Singer and Alexander (2017) found that while students may prefer digital formats for convenience, their comprehension levels are often lower compared to traditional print materials. The study suggests that the nonlinear nature of digital texts, which encourages skimming and scanning, can detract from deep reading and understanding. Conversely, Mangan (2013) conducted a study that revealed students who read on paper performed better in terms of comprehension and recall than those who read on screens. The tactile experience of print, along with the physical layout of text, is believed to aid memory retention and understanding. This is particularly important for middle school students, who are still developing cognitive strategies for reading comprehension.

### 1.2 Traditional Reading Habits and Engagement

Traditional reading, involving printed books and materials, has been the cornerstone of education for centuries. Research by Jabr (2013) suggests that printed books may offer a more focused and immersive reading experience, reducing distractions that are often associated with digital devices. The physical act of turning pages and the absence of screen glare contribute to sustained attention and engagement, which are crucial for comprehension, particularly in younger readers. Additionally, Baron (2015) highlights that students often report feeling more connected to printed texts, as they find it easier to concentrate and comprehend complex material. The study emphasizes the importance of tactile feedback and spatial memory, which are more pronounced when interacting with physical books. This connection between engagement and comprehension suggests that traditional reading may better support the learning needs of middle school students. Traditional reading habits typically associated with printed materials such as books, newspapers, and magazines, have long been a cornerstone of literacy and education. These habits involve not only the consumption of text but also the deep engagement and cognitive processes that come with sustained reading. In the context of a rapidly digitizing world, understanding the impact of traditional reading habits on engagement is crucial for educators, policymakers, and researchers. This literature review explores the relationship between traditional reading habits and reader engagement, drawing on various studies and theoretical perspectives to provide a comprehensive overview of the current understanding.

#### 1.2.1 Traditional Reading Habits: Definition and Characteristics

Traditional reading habits are characterized by the use of physical, printed materials. These habits often involve more than just the act of reading; they include the tactile experience of handling books, the ability to annotate and highlight text, and the absence of digital distractions (Mangan, 2014). Reading in print has been linked to deeper cognitive engagement, as it requires sustained attention and often facilitates a more immersive experience (Baron, 2015).

The physicality of books and other printed materials plays a significant role in traditional reading habits. Studies have shown that readers often have a stronger emotional connection to physical books compared to digital texts (Mangan, 2013). The multisensory experience of handling a book, turning pages, and even the smell of paper contributes to this connection, making traditional reading a more engaging activity for many individuals.

#### 1.2.2. Engagement in Traditional Reading

Engagement in reading is generally understood as the depth of involvement and interest a reader has with the text. Traditional reading habits are believed to foster higher levels of engagement due to several factors:

- i. **Cognitive Engagement:** Printed materials require more focused cognitive effort, which can lead to better comprehension and retention of information (Delgado, 2018). The lack of hypertext and multimedia distractions in printed texts allows readers to immerse themselves more fully in the material.
- ii. **Emotional and Aesthetic Engagement:** Traditional reading often involves a deeper emotional and aesthetic connection with the text. According to Rosenblatt's (1994) transactional theory of reading, readers bring their own experiences and emotions to the text, creating a unique and engaging reading experience. This process is often more pronounced with printed materials, where the reader's focus is less fragmented.
- iii. **Tactile and Physical Engagement:** The physical act of handling a book, marking pages, and writing notes in the margins can enhance a reader's engagement with the text. Research by Baron, (2015) suggests

that these tactile interactions contribute to a more profound connection with the material, which is often missing in digital reading environments.

### **1.2.3. Comparative Studies: Traditional vs. Digital Reading Engagement**

Several studies have compared engagement levels between traditional and digital reading formats. Mangen, (2013) found that participants who read a short story in print were more emotionally engaged and retained more information than those who read the same story on a Kindle. This study highlights the potential advantages of traditional reading in fostering deeper engagement.

Another study by Delgado, (2018) conducted a Meta analysis of research comparing reading comprehension between print and digital formats. The results indicated that comprehension was generally better when reading printed texts, particularly for longer and more complex materials. This suggests that the cognitive engagement required for traditional reading may lead to more effective learning outcomes.

### **1.2.4. The Role of Distraction and Multitasking**

One of the key differences between traditional and digital reading is the potential for distraction. Digital devices often come with notifications, hyperlinks, and multimedia elements that can disrupt the reading process (Carr, 2010). These distractions can reduce engagement by fragmenting the reader's attention and making it more difficult to maintain focus on the text.

In contrast, traditional reading typically occurs in environments with fewer distractions. The absence of hyperlinks and other interactive elements in printed texts allows readers to engage in a more linear and sustained reading process, which can enhance comprehension and retention (Mangen, 2014). This uninterrupted focus is crucial for deep reading, a concept popularized by Wolf (2018), which refers to the immersive and reflective reading experience that is often associated with print.

### **1.2.5. Traditional Reading and Educational Outcomes**

The educational benefits of traditional reading habits have been widely documented. Printed materials have been found to support better academic performance, particularly in the context of standardized testing and complex comprehension tasks (Singer, 2017). This is likely due to the increased cognitive engagement and deeper processing that traditional reading fosters.

Moreover, traditional reading habits are often associated with a love of reading and lifelong learning. A study by Scholastic (2019) found that children who are frequent readers are more likely to read printed books and that these children report higher levels of enjoyment and engagement with reading. This suggests that fostering traditional reading habits from a young age can lead to more sustained and meaningful engagement with literature throughout life.

### **1.2.6. Challenges to Traditional Reading in a Digital Age**

Despite the documented benefits of traditional reading, these habits are increasingly challenged by the rise of digital media. The convenience, accessibility, and interactive nature of digital content have led to a decline in traditional reading practices, particularly among younger generations (Twenge, 2019). This shift poses challenges for educators and parents who wish to encourage deeper engagement with reading.

However, some researchers argue that traditional reading and digital reading can coexist and complement each other. For instance, mixed format reading strategies that combine the strengths of both print and digital media might offer a balanced approach, allowing readers to engage with text in multiple ways depending on the context and purpose (Barzillai, 2018). Traditional reading habits remain a vital aspect of literacy and education, fostering deep cognitive, emotional, and tactile engagement. The literature consistently shows that printed materials support better comprehension, retention, and emotional connection with the text compared to digital formats. While the digital age presents challenges to maintaining traditional reading habits, it also offers opportunities for integrating diverse reading formats in a way that enhances overall engagement. Educators and policymakers should consider strategies that preserve the benefits of traditional reading while also embracing the advantages of digital media, ultimately creating a balanced and enriching reading environment for all learners.

## **1.3 Comparative Studies on Engagement**

Comparative research on student engagement with digital versus traditional reading materials presents varied outcomes. Jeong (2012) found that while digital texts can engage students through interactive elements, they often lead to fragmented attention due to the multitasking nature of digital devices. This can negatively impact deep engagement with the text, leading to superficial processing of information. However, Huang, (2012) argue that digital reading can enhance engagement when properly integrated into the learning environment. Their study suggests that the use of eBooks and other digital texts, when combined with interactive and adaptive learning technologies, can cater to diverse learning styles and promote active

engagement. This is particularly relevant in middle schools, where students' engagement levels can significantly influence their academic outcomes.

#### **1.4 Impact on Academic Performance**

The relationship between reading habits and academic performance is a critical area of study, especially for middle school students. De Jong, (2002) found that students who regularly engage with digital reading materials may develop better digital literacy skills, which are increasingly important in modern education. However, they also caution that overreliance on digital texts could hinder the development of traditional literacy skills, such as deep reading and critical analysis. On the other hand, Wright, (2013) suggest that students who primarily read printed materials tend to perform better academically in reading related subjects. This is attributed to the deeper comprehension and better retention associated with traditional reading, which is crucial for mastering complex texts and concepts in middle school curricula.

The influence of reading formats, particularly digital and printed mediums, on academic performance has become a critical area of research in educational psychology and pedagogy. As digital content becomes increasingly prevalent in education, understanding how it compares to traditional printed materials in terms of supporting students' academic outcomes is essential. This literature review explores the existing research on how these formats impact comprehension, retention, engagement, and overall academic performance.

##### **1.4.1. Theoretical Background**

The foundation of this review is rooted in cognitive load theory, which suggests that different mediums of information delivery can affect cognitive processing. According to Sweller (1988), the way information is presented influences the cognitive load placed on learners, which in turn impacts learning efficiency and academic performance. Printed texts are often considered to impose a lower cognitive load because they typically offer a more linear and less distracting reading experience (Jabr, 2013). In contrast, digital texts, with hyperlinks, multimedia, and other interactive features, may increase cognitive load and potentially hinder comprehension and retention (Mangen, 2013).

##### **1.4.2. Comprehension and Retention**

Research consistently shows that printed materials tend to support better comprehension and retention compared to digital formats. Mangen, (2013) conducted a study that found students reading printed texts performed better on reading comprehension tests than those reading on screens. The study attributed this difference to the tactile and spatial nature of printed texts, which can aid memory through the physical placement of text on a page. Similarly, Delgado, (2018) conducted a meta-analysis that revealed a significant advantage for print over digital texts in terms of reading comprehension, particularly for longer and more complex texts.

##### **1.4.3. Engagement and Motivation**

While printed materials may enhance comprehension, digital texts are often found to increase engagement and motivation, especially among younger students who are more accustomed to interacting with digital devices. According to a study by Zhang, (2014), the interactive and multimedia features of digital texts can make reading more engaging, which can lead to improved motivation to complete assignments. However, the same study also noted that this increased engagement does not always translate into better academic performance, particularly when digital distractions interfere with focus and comprehension.

##### **1.4.4. Academic Performance**

The impact of reading formats on overall academic performance is complex and varies depending on the context and the student population. A study by Wolf, (2020) found that while digital texts can be useful for certain tasks, such as quick information retrieval and collaborative learning, they may not support the deep, reflective reading required for academic success. In contrast, printed texts were more likely to support the kind of sustained attention and deep processing that are necessary for higher-order learning and academic achievement.

Moreover, a longitudinal study by Subrahman, (2001) found that while increased use of digital media was associated with higher levels of general knowledge, it was also correlated with lower performance in subjects that require deep reading and comprehension, such as literature and history. This suggests that while digital reading may enhance surface learning and factual recall, printed materials are more effective in supporting the kind of deep learning that underpins academic success.

##### **1.4.5. Hybrid Approaches**

Given the strengths and weaknesses of both digital and printed formats, some researchers advocate for a hybrid approach to maximize academic performance. A study by Baron, Calixte, and Havewala (2017) suggested that integrating both formats could leverage the engagement benefits of digital texts while maintaining the comprehension advantages of print. Their research found that students who used a



combination of digital and printed texts reported higher satisfaction with their learning experience and demonstrated better academic outcomes compared to those who used only one format.

#### 1.4.6. Implications for Educational Practice

The findings from these studies have significant implications for educational practice. Educators should be mindful of the trade-offs associated with each reading format and consider the specific needs and preferences of their students when designing curricula. For subjects that require deep comprehension and critical thinking, printed materials may be more beneficial. However, for activities that require engagement and interactivity, digital texts can be a valuable tool. Moreover, the integration of both formats could cater to diverse learning styles and preferences, potentially leading to improved academic outcomes for a broader range of students.

#### 1.5 Conclusion

The literature reveals a complex relationship between digital and traditional reading habits, with each offering unique advantages and challenges. While digital reading provides convenience and interactive features, traditional reading supports deeper comprehension and sustained engagement. For middle school students, who are in a formative stage of their academic development, balancing both digital and traditional reading practices may be essential for fostering comprehensive literacy skills. Future research should continue to explore how these reading habits influence long term academic outcomes and how educators can effectively integrate both formats into the classroom.

### 2. METHODOLOGY:

To fulfill research goals, the study used a quantitative approach. The research was conducted using a descriptive survey approach. 394 Middle school students from Rawalpindi Private Schools made up the sample, which was chosen using random sampling techniques. This study used a self administered questionnaire. The questionnaire consisted of closed ended with 5 point Likert scale option and data were analyzed using descriptive statistics.

### 3. FINDINGS AND DATA ANALYSIS

	N	Minimum	Maximum	Mean	SD	Variance
1. I prefer reading digital content (e.g., eBooks, online articles) over printed books.	394	1.00	5.00	3.2778	1.22741	1.507
2: I find printed books more enjoyable to read than digital content.	394	1.00	5.00	3.2222	.94281	.889
3. I spend more time reading on digital devices than on printed materials.	394	1.00	5.00	3.3889	1.46082	2.134
4. I am more likely to complete my reading assignments when they are in digital format.	394	1.00	5.00	3.3333	1.28338	1.647
5. I understand and remember information better when reading printed materials compared to digital content.	394	1.00	5.00	3.3333	1.23669	1.529
6: I find it easier to focus on and comprehend reading assignments when they are in printed form.	394	1.00	5.00	3.0556	1.21133	1.467
7: I often need to reread digital content to fully understand it.	394	1.00	5.00	3.5000	.98518	.971
8: My comprehension of reading material is the same regardless of whether it is digital or printed.	394	1.00	5.00	2.7778	1.30859	1.712
9: I feel more engaged when reading digital content compared to printed materials.	394	1.00	5.00	3.2222	1.35280	1.830
10: I am more motivated to start and complete reading assignments when they are digital.	394	1.00	5.00	3.2222	1.30859	1.712
11: I find it easier to stay focused when reading printed materials than digital content.	394	1.00	5.00	3.0556	1.43372	2.056
12: I enjoy interactive features (e.g., hyperlinks, videos) in digital reading materials.	394	1.00	5.00	3.3889	1.57700	2.487
13: My grades in reading related subjects improve when I use digital reading materials.	394	1.00	5.00	3.3333	1.08465	1.176

14: I perform better in tests when I prepare using printed books rather than digital materials.	394	1.00	5.00	3.3889	1.19503	1.428
15: The format of reading materials (digital vs. print) does not affect my academic performance.	394	1.00	5.00	3.2222	1.35280	1.830
16: I feel more confident in my reading related exams when I study from printed materials.	394	1.00	5.00	3.0000	1.32842	1.765
N	394					

The descriptive statistics provided offer insight into middle school students' preferences and performance in relation to digital and traditional reading formats. The results are analyzed in light of the four research objectives:

**1. Preference for Digital Content:** The mean response to the statement "I prefer reading digital content over printed books" is 3.28, which suggests a slight preference for digital content among the students, although this preference is not overwhelmingly strong. The standard deviation of 1.23 indicates moderate variability in students' preferences.

**2. Preference for Printed Books:** The mean response to the statement "I find printed books more enjoyable to read than digital content" is 3.22, which suggests that printed books are also favored by a portion of students. The lower standard deviation (0.94) indicates a relatively more consistent preference for print among students who prefer it.

This shows that students are somewhat divided in their reading preferences, with a slight lean towards digital reading, but with a significant proportion still enjoying traditional printed books.

**3. Understanding and Retention of Printed vs. Digital Content:** The mean score of 3.33 for "I understand and remember information better when reading printed materials" indicates that students tend to believe they retain information better from printed materials. The standard deviation of 1.24 suggests some variation in responses.

**4. Rereading Digital Content for Comprehension:** The mean score of 3.50 for "I often need to reread digital content to fully understand it" shows a notable trend. Students often find digital content more challenging in terms of comprehension, leading to repeated readings.

**5. Comprehension Consistency Across Formats:** With a mean of 2.78, students are more likely to disagree with the statement "My comprehension of reading material is the same regardless of whether it is digital or printed." This suggests that students perceive a difference in their ability to comprehend between the two formats, with print possibly being favored.

These data indicate that while digital reading is prevalent, students generally find it harder to comprehend digital content compared to printed materials, supporting the idea that traditional reading may enhance comprehension.

**6. Engagement with Digital Content:** The mean of 3.22 for "I feel more engaged when reading digital content" shows that students have moderate engagement with digital reading materials. However, the relatively high standard deviation (1.35) indicates considerable variation in responses, suggesting some students feel highly engaged with digital content, while others do not.

**7. Motivation to Complete Digital Reading Assignments:** A mean of 3.33 for "I am more likely to complete reading assignments when they are in digital format" shows that digital formats slightly improve students' motivation to complete their work. The standard deviation of 1.28 reflects moderate variation.

**8. Focus and Comprehension with Print:** The mean of 3.06 for "I find it easier to focus on and comprehend reading assignments in printed form" suggests a slight preference for printed materials when it comes to focus and comprehension, though not a strong one.

Overall, these results show that while digital formats may increase engagement for some students, others may struggle with focus and comprehension, indicating that motivation and engagement are somewhat format dependent.

**9. Grades and Digital Reading:** The mean of 3.33 for "My grades in reading related subjects improve when I use digital reading materials" suggests that digital reading materials have a positive effect on students' academic performance, though the effect is not substantial for all students (standard deviation = 1.08).

**10. Test Performance and Printed Books:** With a mean of 3.39 for "I perform better in tests when I prepare using printed books," the data suggest that students tend to perform better academically when using printed materials. The standard deviation of 1.19 indicates moderate variation in responses.

**11. Confidence in Exams with Printed Materials:** The mean of 3.00 for "I feel more confident in my reading related exams when I study from printed materials" suggests neutrality, though the standard deviation of 1.33 points to varying levels of confidence among students.

The data suggests that while digital reading may support academic performance for some students, printed materials appear to offer advantages in terms of test preparation and overall academic outcomes. The findings from this descriptive analysis highlight several key trends:

- i. Reading Preferences:** Students show a mild preference for digital content but still value printed materials, indicating the importance of offering both formats to accommodate diverse preferences.
  - ii. Comprehension and Focus:** Students generally find printed materials easier to comprehend and focus on compared to digital content, suggesting that traditional reading may support deeper understanding.
  - iii. Engagement and Motivation:** Digital reading materials can boost engagement and motivation for some students, but others may struggle with focus, indicating a need for a balanced approach to digital integration in education.
  - iv. Academic Performance:** While digital reading materials can enhance performance for some students, printed materials seem to offer more consistent support for test preparation and academic success.
- Given these results, educational strategies should consider a hybrid approach, utilizing both digital and traditional reading methods to maximize student engagement, comprehension, and academic performance across various learning styles.

#### 4. DISCUSSION

The findings from this study provide valuable insights into the reading preferences, comprehension, and academic performance of students when engaging with digital versus printed materials. Here's a detailed discussion of the key points: The data suggests a mild preference for digital content among students, with a mean response of 3.28. However, the close mean response of 3.22 for printed books indicates that a significant portion of students still favors traditional reading formats. The standard deviations show moderate variability in these preferences, reflecting a diverse range of opinions. This division suggests that while digital content is gaining traction, printed books retain their appeal, underscoring the need for educational systems to offer both formats to cater to different student preferences. Students perceive a difference in their ability to comprehend and retain information between digital and printed materials. The mean score of 3.33 for understanding and retention with printed materials, compared to the lower score of 2.78 for consistent comprehension across both formats, indicates that students generally believe printed materials support better comprehension. Additionally, the need for rereading digital content, with a mean score of 3.50, suggests that students find digital formats more challenging to comprehend. This points to the potential cognitive benefits of traditional reading methods, particularly for complex or dense material. The data shows moderate engagement with digital content, with a mean score of 3.22, but the high variability (standard deviation of 1.35) indicates mixed experiences among students. While digital formats may increase motivation for some, as suggested by the mean score of 3.33 for completing digital reading assignments, others may struggle with focus and comprehension. This variability highlights the importance of understanding individual differences in how students interact with digital versus printed materials. Educators might need to adopt a flexible approach, offering multiple formats to enhance student engagement and motivation. When it comes to academic outcomes, the findings suggest that printed materials may provide more consistent support.

The mean score of 3.39 for better test performance with printed books suggests that students feel more confident and perform better academically when using traditional formats. While digital reading materials have a positive effect on grades for some students, as indicated by a mean of 3.33, the overall data leans slightly towards the effectiveness of printed materials in supporting academic success. This suggests that while digital tools are valuable, printed materials should remain a key component of educational strategies, particularly for test preparation and subjects that require deep comprehension. The analysis reveals that students are somewhat divided in their reading preferences, with a slight lean towards digital content but a strong appreciation for printed materials. The data suggests that printed materials may offer advantages in comprehension, focus, and academic performance, while digital formats can enhance engagement and motivation for some students. Given these findings, a hybrid approach that integrates both digital and traditional reading methods could be the most effective strategy. This approach would cater to diverse learning styles and maximize student engagement, comprehension, and academic success. By recognizing the strengths and limitations of each format, educators can better support their students' learning outcomes in an increasingly digital world.

#### 5. CONCLUSION

The analysis of students' reading preferences and comprehension across digital and printed formats reveals several significant insights that can inform educational strategies moving forward. Students exhibit a slight preference for digital content, as indicated by a mean score of 3.28. However, this preference is not overwhelming and there remains a substantial portion of students who enjoy reading printed books, as reflected by a close mean score of 3.22. The variability in these preferences, particularly with digital content, suggests that students are divided in their reading format choices. Thus, it is crucial for educational institutions to provide both digital and printed reading materials to cater to the diverse preferences of students. The data strongly suggests that students perceive printed materials as more conducive to comprehension and retention. With a mean score of 3.33 for understanding and remembering information better with printed materials, it is clear that traditional reading methods offer advantages in supporting

deeper learning. Additionally, the need for repeated readings of digital content, as indicated by a mean score of 3.50, underscores the challenges some students face with digital comprehension. These findings suggest that while digital content is accessible and engaging, printed materials may be better suited for complex or critical reading tasks that require sustained focus. Digital content appears to moderately enhance engagement and motivation for some students, as indicated by the mean scores of 3.22 for engagement and 3.33 for motivation to complete digital reading assignments. However, the high variability in responses suggests that digital content does not universally enhance engagement and may even hinder focus and comprehension for some students. This indicates that while digital formats can be beneficial, they should be integrated thoughtfully and supplemented with printed materials to support all learners. The impact of reading formats on academic performance shows a nuanced picture. While digital reading materials are associated with improved grades for some students, as reflected by a mean score of 3.33, printed materials appear to provide more consistent support for test preparation and academic success, with a slightly higher mean score of 3.39 for test performance when using printed books. This suggests that while digital tools can be advantageous, especially for fostering engagement, printed materials remain a critical component in preparing students for assessments and achieving academic goals. In conclusion, the findings underscore the need for a hybrid approach in educational strategies. By offering both digital and printed reading materials, educators can accommodate the varied preferences and learning needs of students. Digital content can be leveraged to increase engagement and motivation, particularly for tasks that benefit from interactive and multimedia elements. Meanwhile, printed materials should be maintained and emphasized, especially for activities that require deep comprehension, focus, and critical thinking. This balanced approach will not only enhance student engagement but also support their academic performance, ensuring that all students have the tools they need to succeed in diverse learning environments.

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