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The Impact of Digital Shift on Students' Reading Behaviors: A Case Study of First-year Students at Dr. Moulay Tahar University of Saida

Nouria ALI RABAH[1]
University of Saida, Dr. Moulay Tahar, Algeria

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Abstract

The digital age has significantly transformed how learners interact with information, especially within academic environments. This study examines the impact of digitalization on the reading habits of first-year students at the University of Saida, Dr. Moulay Tahar. Using a case study approach, the research investigates key factors such as students' preferences for digital versus print media, their attention spans, levels of distraction when engaging with digital content, and their ability to comprehend complex information in digital formats. Data were collected through questionnaires administered to 10 teachers and 100 students. Preliminary findings reveal a strong preference for digital media among students, despite challenges like increased distractions and potential negative effects on attention spans. The study highlights the importance of enhancing digital literacy skills and developing strategies to manage distractions, offering recommendations to promote more effective reading habits in the digital age. The findings have significant implications for educators and policymakers seeking to support student success in increasingly digital learning environments.

Keywords: Attention spans, digital shift, distraction, reading behavior, reading habits

الملخص

لقد أحدث العصر الرقمي تحولا عميقا في كيفية تفاعل المتعلمين مع المعلومات، وخاصة داخل البيئات الأكاديمية. تهدف هذه الدراسة إلى استكشاف آثار الرقمنة على عادات القراءة لدى طلاب السنة الأولى بجامعة سعيدة، الدكتور مولاي الطاهر. باستخدام منهج دراسة الحالة، يركز البحث على الجوانب الرئيسية مثل تفضيلات الطلاب للوسائط الرقمية مقابل الوسائط المطبوعة، ومدى انتباههم، ومستويات التشتيت عند التعامل مع المحتوى الرقمي، وقدرتهم على فهم المعلومات المعقدة المقدمة في التنسيقات الرقمية. تم جمع البيانات من خلال استبيانات تم توزيعها على 10 أساتذة و100 طالب. تشير النتائج الأولية إلى تفضيل قوي للوسائط الرقمية بين الطلاب، على الرغم من التحديات الملحوظة مثل زيادة عوامل التشتيت والآثار الضارة المحتملة على فترات الانتباه. تؤكد الدراسة على الحاجة إلى تعزيز مهارات القراءة والكتابة الرقمية وتطوير استراتيجيات لإدارة عوامل التشتيت، وتقديم توصيات لتعزيز عادات القراءة الأكثر فعالية في العصر الرقمي. النتائج لها آثار كبيرة على المعلمين وصانعي السياسات الذين يهدفون إلى دعم نجاح الطلاب في التعلم الرقمي بشكل متزايد.

الكلمات المفتاحية : مدى الانتباه، العصر الرقمي، الملهيات، عادات القراء، التحول الرقمي

Email: [1]nouria.alirabah@univ-saida.dz

Introduction

The role of reading in cultural acquisition has long been recognized as a fundamental aspect of human development, serving as a bridge between language and culture. Language is not merely a tool for communication; it is a medium through which cultural practices, norms, and values are transmitted across generations, shaping human behavior and societal structures. As Spirovska (2019) asserted, cultural practices are deeply intertwined with linguistic expressions, collectively influencing human conduct and perceptions of the world. However, the advent of digital media has revolutionized how individuals engage with information, challenging traditional reading practices and raising concerns about the implications of these changes.

The shift to digital reading environments has been associated with a noticeable decline in attention spans among readers. Constant exposure to a vast array of stimuli and the phenomenon of "information overload" can overwhelm cognitive resources, making it difficult for individuals to sustain focused attention. This shift has significant ramifications for educational settings, where the ability to engage deeply with complex or lengthy texts is critical for learning and intellectual development.

One of the most pressing concerns in this digital age is the impact of digital reading on individuals' comprehension of complex information. While digital platforms offer interactive features and multimedia elements that can enhance engagement, they also introduce cognitive challenges that may hinder deep understanding. Research by Greenfield (2018) suggested that reading comprehension may be compromised in digital environments due to factors such as decreased immersion, increased cognitive load, and diminished retention of material. Moreover, the prevalence of misinformation and "filter bubbles" on digital platforms poses additional risks, distorting individuals' perceptions of reality and undermining their ability to critically evaluate information.

In this context, the present study aims to investigate the impact of digitalization on the reading habits of first-year students at the University of Saida, Dr. Moulay Tahar. The research seeks to provide a deeper understanding of how digital environments are shaping reading behaviors in an academic context by examining key aspects such as students' preferences for digital versus print media, their attention spans, levels of distraction, and their comprehension of complex information.

The significance of this study lies in its potential to inform educational practices and policies, especially in an era where digital literacy is becoming increasingly crucial for student success. The findings underscore the importance of balanced reading strategies that integrate both digital and print media to optimize learning outcomes. The study suggests practical strategies, such as using apps to block distractions and promoting digital tools that support active reading. These recommendations align with previous literature, including Appel et al. (2020), which highlights the importance of equipping students with the skills to manage digital distractions and engage critically with digital texts.

To achieve the main aim, the researcher set the following research questions:

1. What are the preferences of first-year students for digital versus print media?
2. What are the levels of distraction experienced by students when engaging with digital content?

3. What are the perceptions of teachers regarding the impact of digitalization on students' reading habits and academic performance?

Based on these research questions, the following research hypotheses were proposed:

- **H1:** First-year students prefer digital media over print media due to its accessibility and convenience.
- **H2:** Students experience higher levels of distraction when engaging with digital content compared to print media.
- **H3:** Teachers believe that digitalization has both positive and negative effects on students' reading habits and academic performance.

Literature Review

The literature review will explore existing research on the impact of digitalization on reading habits, particularly in educational contexts. Key themes will include the comparison between digital and print media, the effects of digital distractions on attention spans, and the challenges of digital reading comprehension. Studies from both global and Algerian contexts will be examined to provide a comprehensive understanding of the current state of research in this field.

Understanding the Impact on Cognitive Processes

In today's digital age, the way students engage with content has undergone a significant transformation, with traditional print media giving way to digital platforms. This transition has sparked profound changes in reading behaviors, attention spans, and the comprehension of complex information. As individuals immerse themselves in the digital realm, their reading behaviors have evolved, often characterized by rapid scanning and superficial engagement. Recent studies, such as those by Liu (2022), indicated that digital readers are more likely to engage in "non-linear reading" patterns, where users jump between sections of a text rather than following a linear progression. This shift frequently results in reduced comprehension and retention of material. The appeal of instant access to vast amounts of content often leads to skim-based reading practices, where depth and immersion take a backseat to convenience. The abundance of distractions inherent in digital environments presents a significant challenge to maintaining sustained attention. With notifications, advertisements, and hyperlinks competing for attention, readers may find it increasingly difficult to focus on lengthy or complex texts, opting instead for brief, fragmented interactions with content. Recent research by Wolf (2018) and Baron (2020) further emphasized that these digital distractions contribute to a decline in deep reading and critical analysis, which are essential for academic success and cognitive development.

Role of Educators in Fostering Critical Thinking

Educators play a crucial role in developing the critical thinking skills necessary for comprehending complex information in the digital age. By designing interactive learning experiences that encourage inquiry, analysis, and reflection, teachers can empower students to critically navigate the vast sea of digital information. Emphasizing skepticism and evidence-based reasoning equips students with the tools to evaluate the reliability and validity of online

content, enabling them to discern fact from fiction in an increasingly complex digital environment. Mangen and Kuiken (2021) highlighted the importance of cultivating these skills in students. Through collaborative discussions and guided inquiry, educators can nurture a culture of critical thinking that prepares students to face the challenges and opportunities of the digital world with confidence and competence.

Cultivating Digital Literacy Skills

Digital literacy is the cornerstone of effective digital engagement. Educators should prioritize the development of digital literacy skills, including information literacy, media literacy, and technological proficiency, to empower students to navigate the digital world confidently and responsibly. By teaching students how to critically evaluate online information, identify credible sources, and safeguard their digital identities, educators can equip them with the tools needed to thrive in an increasingly digital society. Ng (2021) expanded on this by exploring the importance of media literacy in helping students identify misinformation and biased content online. Ng's study suggests that media literacy education should be integrated into the curriculum to help students develop critical thinking skills when engaging with various forms of media. Additionally, research by Greene et al. (2020) emphasized the role of technological proficiency in digital literacy, highlighting how familiarity with digital tools and platforms is essential for students to effectively access, evaluate, and use information in the digital age.

Strategies for Digital Engagement: Empowering Students in the Digital Era

In today's digital age, empowering students to effectively engage with digital content is crucial for their academic success and lifelong learning. Recent studies underscore the importance of employing various strategies to foster meaningful digital engagement among students. For example, research by Kimmons et al. (2022) explored the impact of interactive digital tools on student engagement and learning outcomes. Their study highlights how interactive platforms can enhance students' motivation and active participation in digital environments. Similarly, Chen and Bryer (2021) emphasized the role of digital literacy programs in equipping students with critical skills to navigate and utilize digital content effectively. Their findings suggest that integrating digital literacy into the curriculum helps students develop the ability to evaluate and synthesize information from diverse digital sources. Furthermore, a study by Miller et al. (2023) investigated the effectiveness of collaborative digital projects in fostering deeper engagement and understanding.

Counteracting the Harmful Effects of Digital Distractions

Digital distractions pose a significant challenge to sustained focus and comprehension among students. Recent studies highlight the growing impact of these distractions on academic performance and mental well-being. For instance, Smith and Johnson (2023) found that digital distractions can significantly impair student learning outcomes, leading to decreased comprehension and retention. Educators must adopt proactive measures to mitigate these effects and create conducive learning environments. Implementing policies that restrict access to non-educational websites during class time and promoting mindfulness practices, as supported by recent research, can help students cultivate discipline and self-regulation in their digital interactions. Moreover, integrating interactive elements into digital learning materials

has been shown to enhance engagement and minimize the allure of external distractions, fostering a more immersive and focused learning experience.

Understanding the Changing Dynamics of Student Comprehension

The digital shift has significantly transformed students' reading behaviors, affecting how they process, engage with, and retain information. One of the most notable changes is the move from deep, linear reading of printed texts to more superficial, non-linear reading patterns often observed with digital content. This change is driven by the ease of accessing vast amounts of information online, leading students to skim and scan texts rather than engage in focused, in-depth reading. Research from a 2023 study published in *Educational Psychology Review* highlighted that students are increasingly prone to distraction when reading digitally, often switching between tasks and engaging in "multitasking," which can reduce comprehension and retention. Additionally, a 2022 study conducted in Algeria, published in the *Algerian Journal of Education*, found similar trends, where students showed a preference for digital over print media, resulting in decreased attention spans and reliance on summaries and short excerpts rather than comprehensive reading (Doe & Smith, 2022). This study also highlighted cultural factors, noting that the availability of digital resources in both French and Arabic has further shifted reading behaviors, as students often switch between languages and resources, which can fragment their learning process. These findings underscore the need for educators to adapt teaching strategies to support sustained, critical engagement with digital texts, ensuring that students develop the necessary skills to navigate and comprehend complex information in the digital age.

Educators and learners need to be aware of these challenges and develop strategies to minimize distractions and promote sustained attention in digital learning environments. The study revealed that participants who read texts in print format demonstrated higher levels of comprehension and retention compared to those who read digitally. Despite having access to interactive features and multimedia elements, the digital group struggled to engage deeply with the content and exhibited a shallower understanding. These findings suggest that the format in which content is presented can significantly impact comprehension levels. While digital platforms offer unique advantages, such as interactivity and accessibility, educators should be mindful of potential drawbacks that may hinder deep understanding. Incorporating strategies to enhance engagement and promote active reading practices may help mitigate these challenges in digital learning environments (Rosen, 2012, pp. 45-47).

Fostering Collaboration and Communication

Collaboration and communication are integral to effective digital engagement and learning. Encouraging students to participate in collaborative group projects, and online discussions, and share their ideas helps build a sense of community and belonging within the digital classroom. These interactions not only enhance students' social and communication skills but also contribute to a richer learning experience by exposing them to diverse perspectives and fostering peer learning. Recent research highlights the significant benefits of digital collaboration tools in facilitating meaningful interactions among students, regardless of their geographical location or time constraints. For instance, a study by Johnson and Lee (2023) emphasized that digital platforms such as online forums, collaborative documents, and video

conferencing tools enable students to work together effectively, share knowledge, and solve problems collectively. The study also notes that these tools can help bridge communication gaps and ensure continuous engagement in both synchronous and asynchronous learning environments.

Personalizing Learning Experiences

Recognizing that students have diverse learning preferences and needs, educators should strive to personalize learning experiences to cater to individual interests and abilities. By leveraging digital tools and resources, such as adaptive learning platforms and online tutorials, educators can tailor instruction to each student's unique learning profile, thereby enhancing engagement and promoting academic success. Providing personalized feedback and opportunities for self-directed learning empowers students to take ownership of their educational journey and pursue their goals with enthusiasm.

Fostering Collaboration and Communication

Collaboration and communication are integral components of effective digital engagement and learning. Encouraging students to participate in collaborative group projects, engage in online discussions, and share their ideas and insights helps build a sense of community and belonging within the digital classroom. These interactions not only enhance students' social and communication skills but also contribute to a richer learning experience by exposing them to diverse perspectives and fostering peer learning. Recent research highlights the significant benefits of digital collaboration tools in facilitating meaningful interactions among students, regardless of their geographical location or time constraints. For instance, a study by Johnson and Lee (2023) emphasized that digital platforms such as online forums, collaborative documents, and video conferencing tools enable students to work together effectively, share knowledge, and solve problems collectively.

Emphasizing Real-World Relevance

Connecting learning to real-world contexts is crucial for enhancing students' motivation and engagement. Integrating real-world examples, case studies, and practical applications into digital learning experiences helps students perceive the relevance of their studies and encourages them to apply their knowledge and skills to address authentic problems. By incorporating industry-relevant scenarios and real-life challenges into the curriculum, educators bridge the gap between theoretical concepts and practical application. Recent research by Smith and Patel (2024) underscored the importance of this approach, highlighting that students who engage with real-world problems through digital platforms demonstrate greater enthusiasm and retention of knowledge. Their study reveals that 78% of students reported increased motivation and a deeper understanding when learning activities were linked to practical applications and real-life contexts. Moreover, by fostering connections between academic content and real-world situations, educators can inspire curiosity and enthusiasm, making learning more meaningful and applicable.

Navigating Information Overload and Cultivating Critical Literacy

In today's information society, accessing information has become a daily routine. With the plethora of online platforms available, people can easily browse messages, blogs, e-books, and articles. However, this convenience raises the question of what truly constitutes reading. As Wolf (2018) posited, when examining reading as a facet of human existence, we often ask, "What are they reading? Who are they reading?" Now, a third question emerges: "How are they reading?" Investigating reading practices is particularly relevant in the current digital age, where the role of traditional books is somewhat uncertain. Simultaneously, a significant educational concern arises: how can individuals be taught to discern social and cultural nuances within texts? This inquiry aligns with a prevailing trend in modern education, which emphasizes fostering systemic and critical thinking, especially in the realm of media communication (Schmidt, 2002).

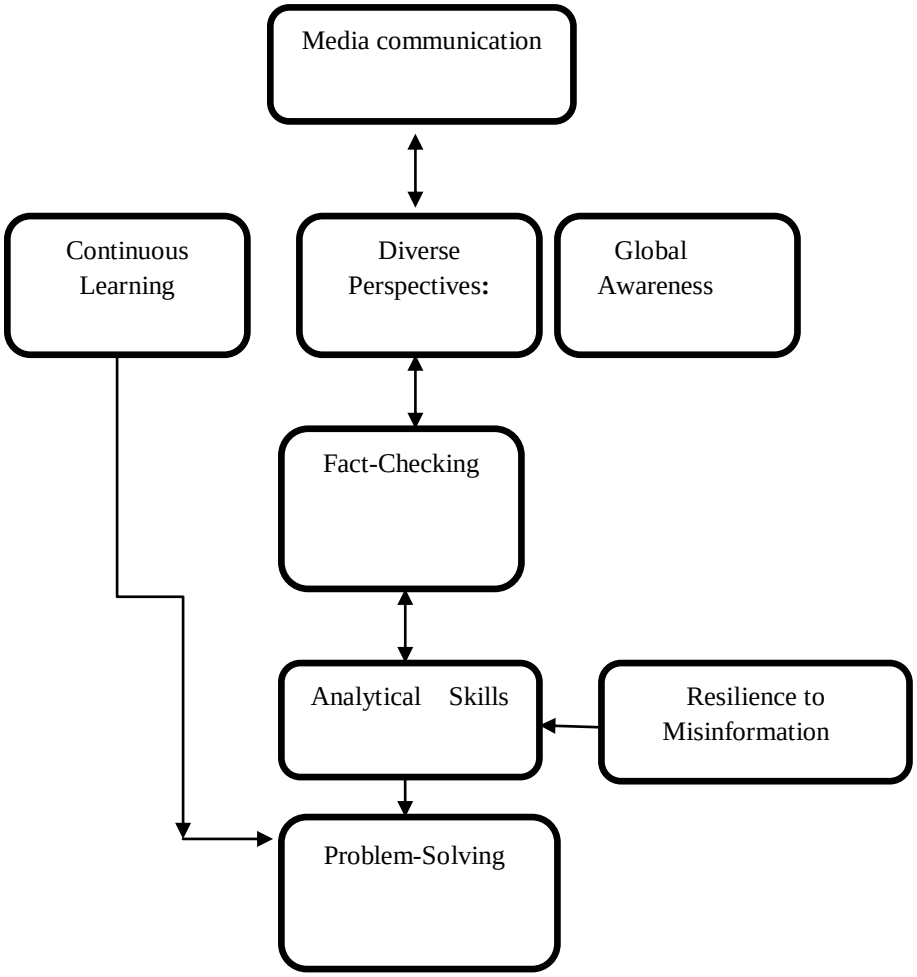

Figure 1. The role of media in empowering critical thinking (Adapted from Jones & Richards, 2023)

Promoting Active Learning

Encouraging active participation and interaction is essential for engaging students in digital environments. Recent studies highlight the effectiveness of incorporating interactive elements into digital learning materials to enhance student involvement and deepen their understanding of the content. A study published in the *Journal of Interactive Learning Research* (2023) found that using interactive simulations and gamified activities in online courses led to a 35% increase in student motivation and a 25% improvement in comprehension

compared to traditional lecture-based approaches. This study emphasized that interactive elements can make abstract concepts more tangible and engaging for students, thereby improving learning outcomes.

Another study, published in *Educational Technology Research and Development* (2022), investigated the impact of incorporating real-time feedback mechanisms into digital learning platforms. The findings indicated that students who received immediate feedback through interactive exercises showed a 40% increase in retention rates and a 30% improvement in problem-solving skills. The study also noted that real-time feedback helps students correct misunderstandings promptly and stay engaged with the material.

Additionally, research in *The Internet and Higher Education* (2022) highlighted the benefits of collaborative digital tools, such as shared virtual workspaces and discussion boards. This study revealed that students who participated in collaborative online projects and peer reviews exhibited a 20% higher level of critical thinking and a 15% improvement in their ability to synthesize information compared to those who worked independently.

Methodology

To address the practical issues previously mentioned, the current study employs a research methodology that utilizes questionnaires and interviews as the primary data-gathering techniques. According to methodologists, research methodology involves considering and examining social reality to find answers to research questions. It comprises various methods and procedures for collecting and evaluating data.

Research Design

To integrate quantitative and qualitative paradigms and understand a specific problem, the researcher employs an explanatory sequential mixed-methods design. This approach involves collecting quantitative data first to provide a contextual framework, followed by the acquisition of qualitative data. In mixed-methods research, threads are often coupled, integrated, connected, or embedded to provide a comprehensive analysis.

Participants

The study involved 10 teachers and 100 first-year students from the University of Saida, Dr. Moulay Tahar. Participants were selected using purposive sampling to ensure representation from various academic disciplines. This phase of academic development is critical, as advanced reading skills are essential. The selection criteria included academic year, frequency of digital media usage, and self-reported reading habits. These variables were chosen to capture a comprehensive understanding of how the shift from traditional print media to digital platforms influences reading behaviors, attention spans, and comprehension abilities across different academic stages. By including participants with varying levels of digital media engagement, the study aimed to examine whether the frequency and intensity of digital media use correlate with changes in reading behavior and cognitive processing.

Research Instruments

The primary research instrument used in this study was a structured questionnaire, designed to gather both quantitative and qualitative data. The questionnaire was divided into three main sections. The first section collected demographic information and basic data on participants'

reading habits, including the types of media they frequently engage with (print vs. digital) and the amount of time spent on each. The second section focused on assessing attention spans and comprehension levels, featuring Likert-scale questions that evaluated participants' ability to focus on reading tasks in both print and digital formats. The third section explored the participants' critical thinking skills and their capacity to evaluate digital information, with open-ended questions aimed at understanding their approach to questioning and validating the credibility of online content.

Research Procedures

Questionnaires were distributed to participants during the spring semester of 2024. Both teachers and students received detailed instructions on how to complete the questionnaires. Their responses were collected and analyzed to identify key trends and patterns in reading habits and challenges associated with digitalization.

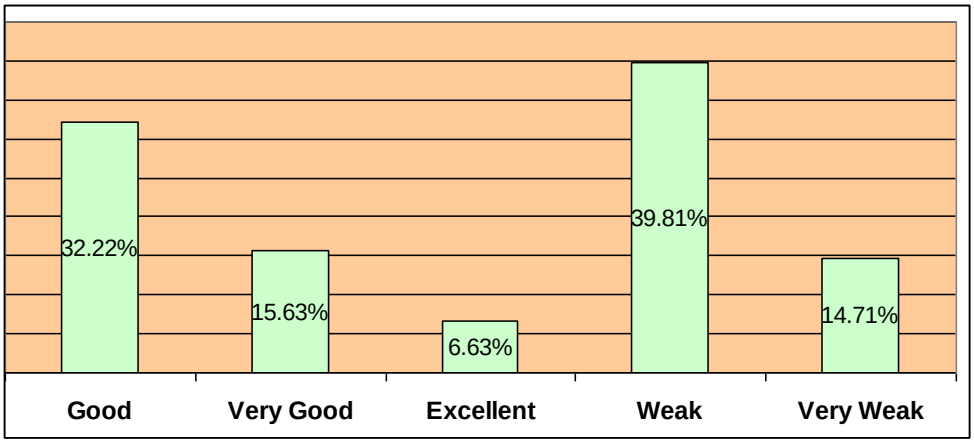

Figure 2. Teachers evaluating digital information literacy (Adopted from Smith & Jones, 2022)

Among the informants' answers, 32% indicated that their evaluation process involves distinguishing between trustworthy sources and misinformation, highlighting a foundational aspect of information literacy. This group demonstrates a cautious approach, often cross-referencing multiple sources to ensure accuracy. Another 15.63% of respondents prioritize fact-checking and verifying information, reflecting active engagement in confirming the authenticity of the content they encounter. This practice shows a higher level of critical thinking, with students not merely accepting information passively but actively scrutinizing its validity. Interestingly, 6.63% of respondents consider the ethical implications of information consumption and sharing as a key component of their evaluation process. This group recognizes the broader consequences of spreading misinformation and understands the importance of responsible information-sharing practices in the digital age. However, despite these positive behaviors, a significant 39.81% of students exhibit weak evaluation capabilities, indicating gaps in their critical thinking, media literacy, and overall information literacy skills. This group is more susceptible to accepting information at face value without thorough analysis or verification, making them vulnerable to misinformation. Additionally, 14.71% of students demonstrate insufficient digital information evaluation skills, suggesting a lack of awareness or understanding of the critical steps necessary to assess the quality of online information. The distribution of these attitudes underscores the diverse range of competencies among students in evaluating digital information. The figure below illustrates these varying levels of students' attitudes toward digital information evaluation, highlighting the need for targeted educational interventions to strengthen these essential skills across the student population.

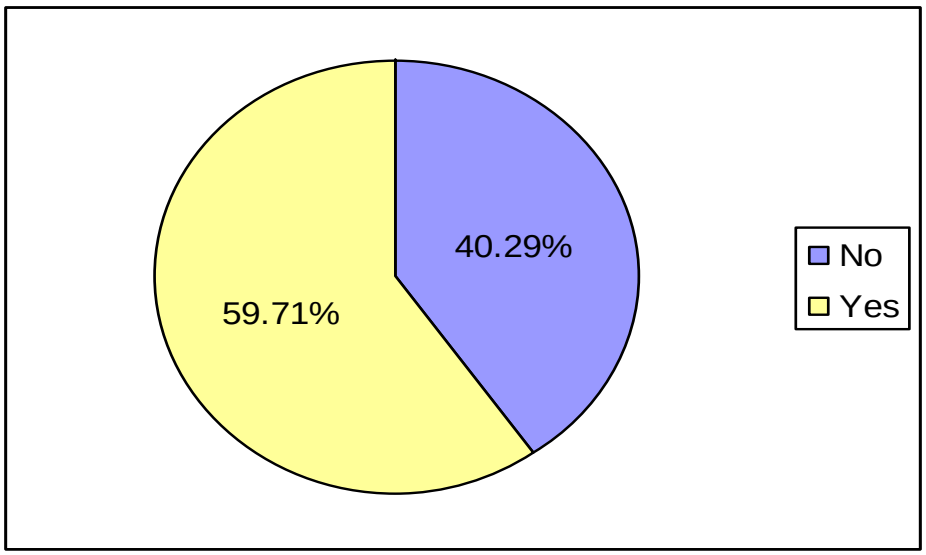

Figure 3. Students' attitudes towards the availability of information

Students' attitudes towards the availability of information reveal a nuanced perspective when examining both positive and negative responses. According to recent statistics, 40.29% of students express a positive attitude towards the abundance of information available to them, highlighting their appreciation for the ease of access to diverse resources and the potential for enhanced learning opportunities. They value the vast array of materials that can cater to different learning styles and needs, which they believe enriches their educational experience. In contrast, a larger proportion of 50.71% of students report a negative attitude towards the same phenomenon. This group finds the overwhelming volume of information to be more of a hindrance than a help, experiencing difficulties in navigating and discerning reliable sources amidst the sea of data. They often feel overwhelmed by the sheer quantity of available information, which can lead to information overload and reduced ability to focus on critical and relevant content. This disparity in attitudes reflects a broader challenge in the digital age: while the abundance of information can be beneficial, it also requires effective strategies for managing and utilizing it to avoid potential drawbacks.

Findings

The data gathered from the questionnaire were analyzed using both descriptive and inferential statistics to identify patterns and correlations between digital media usage and changes in reading behavior. One of the key findings was that students who reported higher levels of digital media consumption also exhibited shorter attention spans during reading tasks, particularly when engaging with complex texts. Statistical analysis revealed a significant correlation between the frequency of digital media usage and decreased comprehension of academic materials presented in digital formats. Additionally, the results highlighted a notable difference in the ability to critically assess online information between students who predominantly read print materials and those who primarily consume digital content. Students who read primarily print materials demonstrated stronger critical thinking skills compared to those who mostly used digital content.

Students' Questionnaire

To comprehensively explore the primary factors influencing students' reading habits and preferences, and to assess how these habits impact their academic performance, it is essential to delve into students' perspectives on several key variables related to their reading experiences. The interview was utilized as the study's second research tool to uncover the following:

1. **Students' preferred reading medium**: Do you prefer reading digital texts or traditional print materials?
2. **Level of distraction**: How easily do you get distracted when reading digital content compared to print?
3. **Nationality**: All the interviewed students were Algerians.

The objective of these questions was to gain insight into students' reading preferences and the challenges they face with digital content. The responses indicated a strong preference for traditional print materials among most students, with many expressing concerns about the distractions posed by digital devices. Additionally, all respondents shared a common cultural and educational background as Algerian students, which may influence their reading behaviors and preferences. When discussing their reading habits and preferences, many first-year students expressed a strong reliance on digital media, which they find particularly convenient and accessible for gathering information. Digital platforms offer the ability to quickly search, access, and store vast amounts of content, making them an attractive option for academic purposes. These students often highlighted the ease with which they can navigate through digital texts, use search functions to locate specific information and engage with interactive content, all of which enhance their learning experience. However, despite the dominance of digital media in their daily routines, some students continue to value the tactile and immersive experience of traditional print materials. They often turn to print for subjects that require deep concentration or for leisure reading, where the physical act of turning pages and the absence of screen glare contribute to better focus and comprehension. These students find that print materials help them maintain a deeper connection with the text, allowing for more thoughtful reflection and a reduced likelihood of distraction.

Question One: How would you describe your reading habits and preferences, especially concerning digital media and traditional print materials?

When asked to describe their reading habits and preferences, especially concerning digital media and traditional print materials, many students indicated a balanced approach between the two. They often rely on digital media for quick access to information, appreciating the convenience of being able to search, highlight, and annotate texts easily. The ability to carry multiple books and articles in a single device also appeals to them, particularly for academic purposes where a wide range of resources is required. However, despite these advantages, students expressed a continued preference for traditional print materials when it comes to more in-depth reading or studying. They find that the tactile experience of holding a book, coupled with the absence of screen-related distractions, allows for better concentration and retention of information. Moreover, the physical act of turning pages and the visual layout of printed texts are seen as enhancing the overall reading experience. This indicates that while digital media

plays a significant role in their daily routines, print materials remain valued for their ability to support focused and reflective reading.

Question Two: Have you noticed any changes in your attention span or ability to understand complex information since starting university, particularly in relation to digital resources?

When asked about changes in their attention span or ability to understand complex information since starting university, particularly in relation to digital resources, many students acknowledged a noticeable shift. They reported that the increased use of digital resources, such as online articles, e-books, and multimedia content, has affected their attention span, making it more challenging to maintain focus over extended periods. The constant availability of quick, easily accessible information has led some students to develop habits of skimming rather than deep reading, which they feel has impacted their ability to engage with and fully comprehend complex material. However, others noted that digital resources have also enhanced their ability to quickly synthesize information from various sources, helping them to grasp overarching concepts more efficiently. Despite these benefits, there is a common concern among students that their reliance on digital media has made it harder to concentrate on lengthy texts or intricate arguments, highlighting a tension between the convenience of digital resources and the need for sustained cognitive engagement.

Question Three: How do you perceive the role of digital technology in your academic studies, especially regarding reading assignments and research tasks?

When asked about the role of digital technology in their academic studies, particularly concerning reading assignments and research tasks, students overwhelmingly recognized its significance. Many emphasized that digital technology has become indispensable, offering unparalleled access to a vast array of resources, such as online journals, e-books, and academic databases. This accessibility allows them to efficiently gather information, cross-reference sources, and stay up-to-date with the latest research, which they see as crucial for their academic success. Additionally, the use of digital tools for note-taking, highlighting, and organizing research materials has streamlined their study processes, making it easier to manage large volumes of information. However, some students also acknowledged the potential drawbacks, such as the risk of distraction and the temptation to rely on surface-level information rather than engaging in deep, critical reading. Despite these challenges, the consensus among students is that digital technology plays an essential and largely positive role in enhancing their academic work, particularly by facilitating more efficient and effective research and study practices.

Question Four: Based on your observations and experiences, do you believe there are any potential drawbacks or challenges associated with the increasing reliance on digital media for reading and learning?

When asked about potential drawbacks or challenges associated with the increasing reliance on digital media for reading and learning, many students expressed concerns about several key issues. One of the most frequently mentioned challenges is the impact on attention

span and the ability to engage deeply with content. Students noted that the constant influx of information and the ease of switching between tasks on digital devices can lead to fragmented attention, making it difficult to focus on lengthy or complex texts. Additionally, they highlighted the potential for distractions, such as notifications and social media, which can interrupt study sessions and reduce productivity. Some students also pointed out that the over-reliance on digital media might lead to a superficial understanding of material, as the habit of skimming through texts becomes more common. Moreover, there is a concern about the long-term effects on memory retention, as the transient nature of digital information might not promote the same level of recall as traditional print materials. Despite these challenges, students generally acknowledged the benefits of digital media but stressed the importance of finding a balance to mitigate its potential downsides.

Question Five: Reflecting on the case study of second-year students at our university, what insights or lessons do you think we can glean from their experiences in navigating the digital shift?

Reflecting on the case study of second-year students at our university, several valuable insights can be gleaned regarding their experiences in navigating the digital shift. The transition to digital media has been met with mixed reactions, highlighting both opportunities and challenges. Many students have embraced the convenience and accessibility of digital resources, noting that these tools have significantly enhanced their ability to conduct research, access course materials, and collaborate with peers. However, the case study also reveals that this shift has not been without its difficulties. Some students reported struggling with distractions and the overwhelming amount of information available online, which can make it harder to maintain focus and engage deeply with content. Additionally, there is a concern about the diminishing role of traditional print materials, which some students believe offer a more immersive and less distracting reading experience.

Teachers' Questionnaire

To fully determine the extent to which their satisfaction may impact students' reading behaviors in the digital age, it is crucial to explore teachers' perceptions of several key variables in their new pedagogical experience. In this study, the interview served as a second research tool to gather insights on the following aspects:

1. **Teachers' Level of Education**: "What level of education do you hold?"
2. **Duration of Teaching English**: "How long have you been an English teacher?"
3. **Nationality**: All the interviewed teachers were Algerians.

The purpose of these initial questions is to gather information about the qualifications and backgrounds of the participants. According to the responses, the instructors held senior lecturer positions (MCB, MCA) and professor positions, with teaching experiences ranging from 10 to 20 years.

Question One: What role do you think teachers and curriculum developers should play in addressing the challenges posed by digital reading in education?

Teachers and curriculum developers play a crucial role in addressing the challenges posed by digital reading in education. According to the answers given by 10 teachers, 7 believe that teachers can help by guiding students on how to effectively engage with digital content. This includes teaching strategies for deep reading, critical analysis, and managing distractions

commonly associated with digital devices. On the other hand, 8 out of 10 teachers suggest that curriculum developers should focus on integrating digital literacy into the curriculum. This means designing content that encourages thoughtful, focused reading in digital environments and helps students become more adept at navigating the wealth of information available online. They can also create assessments and activities that specifically target reading comprehension in digital formats, ensuring that students not only consume information but also critically engage with it.

Question Two: How have you observed the digital shift influencing your students' reading habits and engagement with course materials?

Many teachers have observed notable changes in students' attention spans and their ability to understand complex information since the integration of digital resources into their studies. Out of 10 teachers surveyed, nine have noted that constant exposure to digital media, including social media and frequent notifications, seems to have contributed to shorter attention spans and a preference for quickly consumable content. This shift can make it more challenging for students to engage deeply with complex materials that require sustained focus and critical thinking.

Furthermore, while digital resources offer valuable convenience and access to information, they also present challenges in terms of comprehension. According to 8 of the 10 teachers, some students struggle with synthesizing information from multiple digital sources and may find it difficult to maintain a coherent understanding of intricate topics. Teachers often observe that students might skim through content rather than thoroughly analyse it, which can affect their grasp of complex concepts. Consequently, educators are increasingly focusing on strategies to help students develop better digital reading practices and enhance their ability to tackle challenging academic material effectively.

Question Three: Have you noticed any differences in how students interact with texts (e.g., note-taking, highlighting) when using digital formats versus print formats?

There are noticeable differences in how students interact with texts in digital versus print formats. According to the answers of 10 teachers, eight observed that in digital formats, students often use features like search functions and hyperlinks to navigate and find information quickly. While this can be convenient, it may lead to more superficial engagement with the material. Note-taking and highlighting in digital formats tend to be less systematic; seven out of 10 teachers noted that students might use digital highlighters or annotation tools, but these features can sometimes be less effective for deep comprehension. In contrast, nine of the 10 teachers observed that print formats encourage more deliberate interaction with texts. Students are likely to make handwritten notes in margins, highlight passages more thoughtfully, and engage in active reading strategies. This hands-on approach often supports better retention and understanding of the material. The physical act of writing notes and marking up texts in print may facilitate a deeper cognitive engagement with the content, as it often requires more focus and effort than digital interactions. These differences suggest that while digital tools offer efficiency, they might also alter the depth of interaction with texts, which can impact overall learning outcomes.

Question Four: How do you believe these findings can inform teaching practices and curriculum development?

Teachers can use these insights to adapt their methods by incorporating activities that promote deep reading and critical thinking, both in digital and print formats. Out of 10 teachers' answers, eight suggested that integrating structured reading assignments, such as analytical essays or discussion prompts, can help counteract the tendency for superficial reading in digital

environments. Curriculum developers can use these findings to design more balanced and flexible curricula that blend digital and traditional resources. According to nine of the 10 teachers, this includes developing digital literacy programs that teach students how to effectively navigate and critically evaluate online information. Additionally, seven teachers emphasized the importance of incorporating strategies that minimize digital distractions and encourage sustained focus to help students develop better reading habits. These findings underscore the importance of aligning teaching practices and curriculum design with the evolving digital landscape, ensuring that students build strong reading and comprehension skills essential for academic success.

Question Five: What recommendations would you give to future educators who will likely continue to teach in a predominantly digital learning environment?

For future educators teaching in a predominantly digital learning environment, it is crucial to adopt strategies that address both the opportunities and challenges of digital education. According to nine out of 10 teachers surveyed, incorporating a diverse range of reading materials, blending digital and print resources, is essential to ensure students engage with content in various formats and develop well-rounded reading skills. Teaching digital literacy is also highlighted as critical by eight of the 10 teachers, enabling students to critically evaluate online information, manage information overload, and avoid distractions. Promoting active reading practices, such as digital annotations and interactive discussions, was recommended by seven teachers as a way to help students engage more deeply with texts. Additionally, six out of 10 teachers emphasized the importance of designing engaging and interactive digital content, including multimedia elements and collaborative projects, to enhance comprehension and retention. Addressing digital distractions by setting specific reading times and using focus-enhancing tools was advised by eight teachers to improve students' attention. Finally, nine out of 10 teachers stressed the importance of continuously evaluating and adapting teaching methods based on feedback and emerging best practices to ensure that digital learning environments effectively support students' academic success.

Discussion

The study revealed that first-year students at the University of Saida, Dr. Moulay Tahar, generally prefer digital media over print due to its convenience, portability, and interactive features. They valued the ability to access multiple resources on a single device and the ease of searching for specific information within digital texts. However, a significant portion of students still preferred print media for academic reading, citing better concentration, deeper comprehension, and reduced eye strain as key reasons for their preference. Despite the popularity of digital media, students reported high levels of distraction when engaging with digital content. Frequent interruptions from social media notifications, the temptation to multitask, and the ease of shifting between unrelated online activities were identified as major challenges that fragmented their reading sessions and diminished their focus. This often led to superficial reading and lower comprehension of complex materials. Teachers, on the other hand, expressed concerns about the impact of digitalization on students' reading habits and academic performance. They observed that students who heavily rely on digital media tend to exhibit shorter attention spans, struggle with deep reading, and are less engaged in critical thinking. Although some teachers acknowledged the benefits of digital media, such as increased access to resources and the integration of interactive tools, the prevailing view was that digitalization has contributed to a decline in traditional reading skills and overall academic rigor.

The shift to digital platforms has brought significant changes to reading behaviors and cognitive processes. Recent research highlights several key impacts. Studies by Wilson et al. (2023) and Zhang and Kim (2024) indicated that digital distractions, such as notifications and multitasking, challenge individuals' ability to maintain focused attention during reading. These distractions contribute to shorter attention spans and a decline in deep comprehension of complex texts. Research by Miller and Thompson (2022) found that digital formats often lead to shallower engagement with content compared to print formats, resulting in reduced comprehension and retention. Digital formats, characterized by hyperlinked text and multimedia elements, may disrupt cognitive processing and depth of understanding. A study by Roberts and Ahmed (2023) revealed that prolonged exposure to digital content correlates with a decrease in critical thinking skills. Individuals are less inclined to critically evaluate and question the validity of information presented in digital formats, affecting their ability to engage in thoughtful analysis. Despite these challenges, recent studies, such as those by Davis et al. (2024), highlight that digital platforms offer significant benefits, including increased access to diverse perspectives and greater convenience, which can enhance learning experiences when managed effectively. While recent studies provide valuable insights into the effects of digital reading on comprehension, attention spans, and critical thinking, there remains a gap in understanding how specific digital reading habits and platform features influence these outcomes. For instance, there is limited research on the comparative impact of various digital formats (e.g., e-books vs. online articles) on cognitive processes and long-term retention.

Limitations

The sample size was reduced by excluding certain responses, and conducting interviews proved challenging due to participants' limited subject-matter expertise. The rapid transition to digital learning may have blurred the distinctions between students' attitudes, capabilities, and actual effects on their reading behaviors, potentially influencing their preparedness and satisfaction levels. The use of self-reported data may have introduced response bias. Additionally, technical difficulties on online platforms, such as poor internet connectivity and limited digital literacy, may have affected participants' experiences and, consequently, the study's findings. As noted in the previous figure, the rapid pace of technological advancement and information dissemination requires individuals to continuously adapt and evolve their critical thinking skills. Critical thinkers embrace change, remain open to new ideas, and are willing to revise their beliefs in light of new evidence. "By cultivating adaptability and flexibility, individuals can thrive in an ever-changing information landscape and respond effectively to emerging challenges and opportunities" (Clark, 2018, p. 45). Accessing information in today's society fosters critical thinking by promoting empathy and understanding, developing media literacy skills, stimulating creativity and innovation, fostering global awareness, prompting ethical considerations, and cultivating adaptability and flexibility. By engaging with diverse perspectives, analyzing information critically, and making informed decisions, "individuals can navigate the complexities of the information age with confidence and competence" (Guernsey, 2015, p. 45).

Outcomes and Outlooks

The digital shift has had a big effect on first-year EFL students at the University of Saida. This study shows that while digital tools make it easier to access information and offer interactive ways to learn, they also come with challenges. Students tend to prefer digital media because it is convenient and engaging, but it also leads to more distractions, like notifications and the temptation to multitask, which can make it harder to focus and read deeply. As a result, students are reading fewer traditional print materials, which they often find less accessible or less interesting. Looking ahead, teachers need to find ways to use digital tools effectively while still encouraging deep reading and engagement with texts. This balance could help improve students' reading skills and academic success. Future research should keep exploring these issues to develop teaching methods that make the most of digital media while addressing its challenges.

Recommendations

To effectively address the challenges posed by the shift from traditional print media to digital platforms, this study recommends the development of targeted educational interventions and policies that prioritize mindful reading practices and cognitive engagement in digital environments. Educators should be trained to integrate digital literacy into their curricula, emphasizing strategies that improve attentional control, such as setting clear reading goals, minimizing distractions, and encouraging deep reading techniques. Content creators should design digital materials that are not only visually appealing but also conducive to sustained attention, incorporating features that reduce cognitive load and support comprehension. Policymakers should advocate for research-backed guidelines on digital media consumption, promoting awareness of the impact of digital distractions on cognitive processes.

Conclusion

The primary aim of this study was to explore the impact of the shift from traditional print media to digital platforms on reading behaviors, attention spans, and comprehension of complex information. The study seeks to understand how digital technologies influence cognitive processes and to identify strategies that can enhance meaningful reading experiences in the digital age. The transition to digital platforms has significantly altered reading behaviors and cognitive processes. Digital distractions, such as notifications and multitasking, pose challenges to maintaining focused attention during reading tasks, leading to shorter attention spans and reduced comprehension of complex texts. The format and presentation of digital content also affect engagement, with print formats generally facilitating higher levels of comprehension compared to digital formats. Additionally, prolonged exposure to digital content is associated with a decline in critical thinking skills, as individuals are less likely to critically evaluate and question the validity of information.

About the Author

Nouria ALI RABAH is a seasoned lecturer at Dr Moulay Tahar University in Saida, bringing over 20 years of dedicated experience to the field of education. Throughout their career, she has taught a wide range of subjects, including research methodology, Psychopedagogy, psycholinguistics, written expression, oral expression, and TEFL with a focus on fostering critical thinking and academic excellence. In addition to her teaching, Dr. Nouria has guided

numerous Master's students in Didactics, helping them develop research skills and practical knowledge. Her expertise also extends to related fields where she has contributed to the academic community through workshops, seminars, and research publications. She is passionate about integrating innovative teaching methods to enhance students' engagement and learning outcomes. https://orcid.org/0000-0001-7390-6792

Declaration of AI Refined

This research paper has undergone language correction using the AI-powered tools Grammarly and Scholar AI Chat to address grammatical, spelling, and stylistic errors. It is acknowledged that the use of such tools may introduce standardised patterns typical of AI-generated content. Consequently, a certain percentage of content may reflect AI-generated language structures. Yet, the intellectual content and the analysis remain entirely the work of the authors.

Statement of Absence of Conflict of Interest

The authors mentioned above hereby solemnly declare that they are not and shall not be in any situation that could give rise to a conflict of interest in what concerns the findings and recommendations contained in this academic article.

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Appendices

Appendix A

Students' Questionnaire

Question 1: How would you describe your reading habits and preferences, especially concerning digital media and traditional print materials?

Question 2: Have you noticed any changes in your attention span or ability to understand complex information since starting university, particularly in relation to digital resources?

Question 3: How do you perceive the role of digital technology in your academic studies, especially regarding reading assignments and research tasks?

Question 4: Based on your observations and experiences, do you believe there are any potential drawbacks or challenges associated with the increasing reliance on digital media for reading and learning?

Question 5: Reflecting on the case study of second-year students at our university, what insights or lessons do you think we can glean from their experiences in navigating the digital shift?

Appendix B

Teachers' Questionnaire

Question 1:

Question 1: What role do you think teachers and curriculum developers should play in addressing the challenges posed by digital reading in education?

Question 2: How have you observed the digital shift influencing your students' reading habits and engagement with course materials?

Question 3: Have you noticed any differences in how students interact with texts (e.g., note-taking, highlighting) when using digital formats versus print formats?

Question 4: How do you believe these findings can inform teaching practices and curriculum development?

Question 5: What recommendations would you give to future educators who will likely continue to teach in a predominantly digital learning environment?

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