



# READING HABITS AND INFORMATION CONSUMPTION IN THE DIGITAL AGE OF THE GRADE 12 STUDENTS OF VIVENCIO P. CASAS SR. MEMORIAL HIGH SCHOOL

<sup>1</sup>Anthony M. Diaz, <sup>2</sup>Chinky Mae G. Paladio

<sup>1</sup>Teacher III, <sup>2</sup>Teacher III

<sup>1</sup>Department of Education,

<sup>1</sup>Vivencio P. Casas Sr. Memorial High School, Placer, Masbate, Philippines

**Abstract:** The current state of digital literacy in the Philippines is a mixed landscape, showing significant progress yet facing persistent challenges. On the positive side, there's an increasing awareness and integration of digital literacy in the education sector. In an increasingly digital world, understanding individuals' preferences for reading formats and electronic sources is crucial. The study sought to investigate the preferred format for reading based on purpose and the frequency of usage of various electronic devices and sources for accessing reading material. By exploring these factors, the study uncovers insights into how individuals engaged with written content in digital environments. Understanding these preferences can inform strategies for optimizing content delivery and enhancing the reading experience in an evolving technological landscape. The study assessed the Reading Habits and Information Consumption in the Digital Age of the Senior High School students of Vivencio P. Casas Sr. Memorial High School.

Findings revealed that majority of the respondents' internet usage experience for 1-5 years. Internet usage varies among students. Traditional print materials hold a moderate preference among the students, while on-screen reading exhibit a stronger preference. Preferences for reading formats differ depending on the purpose. Majority of the students prefer traditional printed materials and/or books for academic reading. Some respondents prefer electronic formats for leisure reading and other digital contents. Among electronic devices, Smartphones are mostly utilized for on-screen reading. While mobile devices equipped with e-readers are commonly used for on-screen reading, while desktops and tablets show less utilization. A few respondents do not utilize any electronic device for on-screen reading. The electronic sources frequently used by the students for digital reading are the social networking platforms. However, other websites offering free books and articles are less commonly accessed. The respondents have encountered various challenges when searching for online reading material, including concerns about information reliability, health risks associated with prolonged screen time, potential addiction, and difficulties with user interfaces. These challenges emphasized the interface of some sources while navigating the digital content.

**IndexTerms - Information Consumption, Reading Habits, Digital Reading**

## INTRODUCTION

This digital revolution in education is not only reshaping how knowledge is delivered but also how it is consumed and interacted with, paving the way for a more connected and technologically adept future generation. The Philippines has the second largest population in Southeast Asia that is expected to grow at high-single-digit levels in the next few years. Its digital economy is small, but is poised to grow with sustained urbanization, rising internet accessibility and widespread smartphone usage. With social media and digital streaming, the Philippines' internet penetration rate stood at 73.6 percent of the total population at the start of 2024. Filipinos have been slowly turning to online channels for their information. This choice to go digital comes hand-in-hand with internet infrastructure providing them with faster connection speeds.

The emergence of digital learning on a global scale marks a transformative era in the realm of education. This shift, catalyzed by rapid technological advancements, has redefined traditional learning paradigms, introducing an array of digital tools and platforms that facilitate interactive and personalized learning experiences. Countries around the world are increasingly integrating technology into their educational systems, recognizing its potential to bridge learning gaps, enhance educational accessibility, and foster innovative teaching methods. The advent of e-learning platforms, virtual classrooms, and digital resources has democratized education, enabling students from diverse backgrounds to access quality learning materials anytime, anywhere.

The Philippine education system, deeply rooted in its rich historical tapestry, has evolved considerably over the years, influenced by various cultural and colonial impacts. Characterized by a K-12 basic education program, implemented in 2012, it encompasses kindergarten, six years of primary education, four years of junior high school, and two years of senior high school. This system aims to provide a holistic educational experience, preparing Filipino students not just for local but also for international opportunities. Public schools are the backbone of this system, catering to the majority of the student population, while private schools, including a number of international and religious institutions, also play a significant role. Despite facing challenges such as resource limitations, teacher shortages, and recently, the impact of the COVID-19 pandemic, the system is continually adapting, with a growing emphasis on digital learning and inclusivity to ensure education remains accessible and relevant in the modern era.

The current state of digital literacy in the Philippines is a mixed landscape, showing significant progress yet facing persistent challenges. On the positive side, there's an increasing awareness and integration of digital literacy in the education sector. Many schools and universities are actively incorporating digital tools and resources into their curricula, and there is a growing emphasis on teaching students not just how to use technology, but also how to do so safely and responsibly. The government, through the Department of Education and other agencies, has launched various initiatives to improve digital infrastructure and access in educational institutions.

Rapid change is being experienced in information, information resources, and access to information in the current society, where change is unavoidable, just as it is in every other field. It can be assumed that a person who keeps their knowledge up-to-date would be able to adapt quickly to this transformation and succeed in life and any career. (Samaranayake et. al, 2022). The introduction and wide use of devices, especially mobile ones, has changed the way learners read and do research for a variety of reasons. The relevance of reading in adjusting to this changing era can be better understood when you consider that reading accounts for a significant amount of learned knowledge. These digital transformations have also caused behavioral changes particularly reading behaviors (Atayeva et al., 2019). Significant changes have been identified by scholars at the global level in the reading habits of the individuals specified in this digital era. (Davidovitch et al., 2016). A habit is a typical behavioral pattern learned and reinforced automatically in every circumstance (Erdem, 2015). Habits creep into our lives gradually and become established after some time. If patterns are not broken, they become set with time (Wood & Runger, 2005). When it comes to reading, which is the most basic method of absorbing information, it becomes a habit, and a new concept known as "reading habit" will emerge. The act of reading is carried out in a consistent, regular, and crucial manner throughout life due to the individual's perception of it as a need and source of pleasure (Verplanken, Myrbakk & Rudi, 2005).

While providing opportunities to teachers and learners, new technological developments have also attracted several studies conducted on reading on screen and on paper in addition to the ones dealing with the students' behavior in using online resources and print ones. However, learners and teachers, in addition to other stakeholders such as parents and schools are not well prepared for the pull and push of technology. Fortunati & Vincent (2014) have reported that the transaction using the paper environment led to better results compared to electronic formats such as reading on a computer. Martinez & Rio (2015) have also indicated special difficulties regarding readability of the text on screen, especially on tablet or mobile phone screens. These studies have revealed that the differences in screen size, resolution, image quality, navigation and taking notes profoundly affected the transaction between the text and the reader, thus indicating the fact that the physical environment plays an important role in the reading process (Tracey & Morrow 2002). While such difficulties present significant issues regarding text readability, recent improvements and developments in technology also require a reconsideration of the opportunities provided to readers in term of the transaction in the paper and electronic environments. While it is not possible to change character size, text direction, or the size of the page in the paper environment, as indicated by Chen (2013), reading performance is also affected by these factors, and new technology enables readers to make these adjustments easily and in ways that traditional paper resources cannot. The question is, however, to what extent, these different physical environments or formats affect comprehension of the text and what other factors might contribute to the transaction process.

## NEED OF THE STUDY.

In an increasingly digital world, understanding individuals' preferences for reading formats and electronic sources is crucial. This study seeks to investigate the preferred format for reading based on purpose and the frequency of usage of various electronic devices and sources for accessing reading material. By exploring these factors, the study aims to uncover insights into how individuals engage with written content in digital environments. Understanding these preferences can inform strategies for optimizing content delivery and enhancing the reading experience in an evolving technological landscape.

## RESEARCH METHODOLOGY

### 3.1 Population and Sample

The scope of the study are the 552 males and 542 females comprising the total population of 1094 students. The research draws data from a sample utilizing the Slovin's formula, 136 senior high school students comprising of 40 males and 96 females who served as respondents for this comprehensive study. The average response rate was 100%.

The study employed random sampling technique. A sample chosen randomly is meant to be an unbiased representation of the total population. (Creswell, 2009) Under random sampling, each member of the subset carries an equal opportunity of being chosen as a part of the sampling process. Vivencio P. Casas Sr. Memorial High School has two hundred seven (207) Grade 12

students. The sample size of the study is 136 grade 12 students with a 95% confidence level and 5% margin of error. The sample size of the study is calculated using the Slovin's formula.

### 3.2 Data and Sources of Data

This study focused on determining the preferred formats for reading among the Senior High School students of Vivencio P. Casas Sr. Memorial High School based on different purposes. It encompasses an examination of the reading preferences of participants in various contexts, including academic, leisure, and informational reading. The primary data collection instrument was a survey questionnaire, skillfully modified and validated based on a prior investigation conducted by Mirza, et. al (n.d.)<sup>74</sup>. The study embraced a descriptive research method, aiming to elucidate the characteristics of variables and the inherent relationships among them.

The survey questionnaire delved into three key components: internet experience, preferred reading format, frequency of reading based on the preferences and challenges faced by the respondents relative to their reading behavior. This methodological design allows for a thorough exploration of the multifaceted factors influencing the study's objectives.

### 3.3 Theoretical framework

The study is hinged on three theories, which the researcher believed, have practical applications to the present study. Learning theory is meant to explain and help us understand how people learn. It involves multiple disciplines.

The Information Transfer Theory was proposed by the communication theorist Wilbur Schramm in the mid-20th century. Schramm's theory focuses on the process of communication as the transmission of messages from a sender to a receiver, emphasizing the importance of encoding, transmission, and decoding of information. He conceptualized communication as a linear process, where information flows from one party to another, with the goal of achieving understanding and influence. This theory consists of a set of reading models that focus on how information is transferred from texts to readers' minds and consider reading as a method of information transfer (Gough, 1972)<sup>62</sup>. It best measures students' understanding of reading materials based on the amount of information conveyed. The theory, which is primarily influenced by cognitive psychology, represents the presumption that reading is a system of information transfer. In this sense, "readers extract meaning from written materials by processing the text in a linear way, allowing them to transfer. Determining the role of reading habits in improving learners' ability to transfer information from texts to their minds is paramount (Smith, 1994)<sup>63</sup>. This is because learners with positive reading habits are expected to achieve a high level of reading ability (Bendriiss & Golkowska, 2011)<sup>64</sup>. Good readers, then, possess the ability to transfer information from reading materials to their minds. Thus, the success of reading habits depends on the amount of information obtained by readers. When students develop positive reading habits, they are likely to transfer useful information from written materials to minds.

Connectivism is a relatively new learning theory that suggests students should combine thoughts, theories, and general information in a useful manner. It accepts that technology is a major part of the learning process and that our constant connectedness gives us opportunities to make choices about our learning. It also promotes group collaboration and discussion, allowing for different viewpoints and perspectives when it comes to decision-making, problem-solving, and making sense of information. Connectivism promotes learning that happens outside of an individual, such as through social media, online networks, blogs, or information databases. Connectivism is attributed to learning through cyber nodes specifically rooted in social networks. Critics of connectivism as a learning theory, including Bell (2010)<sup>65</sup>, referred to connectivism as an instructional theory, not a learning theory. An instructional theory is a conceptual framework based on empirical findings and grounded in learning theories, which recommends the design of learning materials, resources, or situations to help learners achieve their learning outcomes and maximize their learning potential. Individuals learn through instructional strategies performed by teachers, aimed to "motivate students to learn and think on higher levels" (King, Goodson & Rohani, 2009)<sup>66</sup>. Learning is the acquisition of knowledge and learning theories explain how individuals learn (Driscoll, 2005)<sup>67</sup>. The primary evidence of learning is an individual's change in performance (Gould, 2008)<sup>68</sup>. According to the principles of connectivism, individuals acquire information through modern day reservoirs of information. Currently, there are three major reservoirs where individuals can acquire information: (a) online classrooms including massive open online courses (MOOCs), (b) social networks including podcasts and video clips, and (c) virtual reality platforms, including 'Second Life' and 3-dimensional video games. Learning through internal processes is evident in the classical cognitive learning theory (Driscoll, 2005)<sup>67</sup>. According to Piaget and other cognitive learning theorists, individuals learn from internal processes such as insights, information processing, perceptions, and memory (Gould, 2008)<sup>68</sup>. The principles of cognitivism enable individuals to understand abstract lessons and to make sense of the world around them. In cognitivism, individuals acquire knowledge through reflective exercises such as journal writing. As learning theorists observe these variables over time, they can provide accurate descriptions of how students learn. A learning theory utilizes empirical findings to integrate several factors that can explain learning phenomenon. , connectivism can also be part behaviorist, part cognitive, and part constructionist learning theory. With thousands of materials flowing through the network nodes, connectivism can provide thousands more E-learning materials in which all three classical learning theories are embedded.

In the 1960s, Theodor H. Nelson coined the term hypertext which can be defined as text composed of blocks of words or images that can linked electronically by multiple paths. (Landow, 1997)<sup>69</sup>. A text has many networks that interact to create a text

without beginning or end. Relatively, hypertext theory is based in the theories of postmodernism and poststructuralism (Carusi, 2006)<sup>70</sup> that limits usage of the printed text and often exists in comparison to print forms. On a similar context, DeStefano et. al (2007)<sup>71</sup> define hypertext broadly as a collection of documents containing links that allow readers to move from one chunk of text to another. The digital device was envisioned to store all kinds of books and documents while also being able to link items (Bush, 1945)<sup>72</sup>. This same concept can be seen in today's digital libraries. Currently, literary scholars are interested in the potential and theory of hypertext. Authors such as Jay David Bolter, George P. Landow, and Richard Lanham, among others, have been influential in the development of the field of hypertext theory. Carusi (2006)<sup>70</sup> further states that Hypertext can take many different forms, providing different degrees of context and choice to readers. However, hypertext is characterized by several main features. First, hypertext is described as non-linear because readers are seen as having the ability to create the text as they read, depending on the choices made when reading. Secondly, Hypertext is said to bring freedom to readers, creating new terms such as reader and secondary author. Because hypertext is joined by links, each reader can create a unique path through the text, therefore having a role in the text's authorship. Each reader can then create a unique text according to the links followed. Carusi further explained that hypertext has two components, links and lexias. A lexia, a reading unit or section of text, can be of varying length and composition. Lexias are joined by links. It is through these links that lexias gain meaning and form the text as a whole. However, this whole is changeable depending on the reader's choices and can be formed again with each reading. As readers adjust to the digital medium, certain new factors are introduced to the reading process. First, the digital text is less material than text on a page but can act in different ways than print text (Gervais, 2007)<sup>73</sup>. Words on the screen can have hyperlinks and can be changed through computer functions. It is not yet clear whether hyperlinked words are read in the same way as print-based words. Gervais agreed that the non-linearity of hypertext may affect the reading process. Readers no longer have the entirety of texts before them and must learn to navigate invisible sections of text. Moreover, when reading digital text, simply making one's way through the text often requires more thought and practice than it does when reading print texts. Gervais added that every act of reading consists of three parts: manipulation, comprehension, and interpretation. The manipulation of traditional print texts is often overlooked in the act of reading, but this aspect of the reading process is growing in importance with digital reading. Consequently, if a text cannot be manipulated, readers will have difficulty in understanding and interpreting the text. Readers must continue to learn to manipulate texts on screen as they adapt to the digital reading environment. The digitization of texts also means that there are ever-greater numbers of texts available in digital format. This changes the reader's cultural reading context. Readers have access to overflowing information, so that the need for selection and speed becomes more central to the reading process. Readers must learn to intelligently select needed texts from among many. However, accelerated reading can reduce comprehension to more superficial levels. Individual texts tend to have less importance to readers, are read quickly, and are discarded or lost in the overflow of digital information.

Text digitization has important effects in the academic environment. Patterson (2000)<sup>74</sup> argues that readers interact with electronic text in ways that is not possible with print text, that hypertext allows readers to have a more authorial role and to participate more in the text. This can lead to new educational practices for teachers and students, who can use hypertext in new, participative ways in the classroom. Students can become coauthors through hypertext, and instructors can encourage students to contribute their own writing in response to hypertexts read. Reading then becomes an interactive process. However, in higher education, a problem arises through the multiple texts that can be derived through hypertext reading, creating difficulties for teaching and study. If students and instructors can all create different texts through reading, they have little common ground for discussion and instruction. According to Carusi (2006)<sup>70</sup> the central claim of hypertext theory is that hypertext constitutes a challenge to existing reading practices, and that even our experiences of reading will eventually be changed by it. Hypertext may have the ability to change the roles of readers, the attention given to texts, and the form of texts themselves. Some theorists worry that students may become readers who lack depth of thought and analysis due to the nature of hypertext, while others suggest that hypertext can bring about new forms of scholarship that have yet to be discovered. These elements are beginning to be studied, but researchers have yet to develop firm conclusions about the changes brought about by hypertext to academic reading and learning.

The researcher employs an Integrated Digital Learning Theory that proposes a comprehensive framework for understanding the reading habits and Information Consumption in the Digital Age of The Grade 12 Students of Vivencio P. Casas Sr. Memorial High School P. Casas Sr. Memorial High School drawing insights from Information Transfer Theory, Connectivism Learning Theory, and Hypertext Theory.

### **3.4 Statistical tools and econometric models**

#### **3.4.1 Descriptive-Qualitative Statistics**

In pursuit of the study's objectives, the researcher adopted a comprehensive research approach, employing both quantitative and qualitative methods. Creswell (2009) defines Quantitative research as a means for testing objective theories by examining the relationship among variables. These variables can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. On the other hand, Qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures; collecting data in the participants' setting; analyzing the data inductively, building from particulars to general themes; and making interpretations of the meaning of the data.

For the analysis and interpretation of the data gathered, statistical tools were used. The statistical tools selected were based on their suitability to the data gathered, and their appropriateness in answering the questions to the problem of this study. Descriptive analysis was applied for quantitative data and content analysis was adopted for the qualitative interviews.

After the survey, the following statistical treatment were utilized to analyze their responses; to calculate the number of times an event occurs, while percentage represents the proportion of a particular variable in relation to the whole. Frequency and Percentage was utilized as shown below:

$$P = \frac{f}{N} \times 100\%$$

Weighted mean was used to determine the extent of agreeability on different indicators relative to reading objectives and preferences respondents utilizing a 5-point Likert scale with corresponding interpretation shown below.

**Weighted Mean:**

$$W = \frac{\sum_{i=1}^n w_i X_i}{\sum_{i=1}^n w_i}$$

Scale	Adjectival Rating	Interpretation
4.50-5.00	Always	Highly Performed
3.45-4.44	Often	Moderately Performed
2.45-3.44	Sometimes	Often Performed
1.45-2.44	Rarely	Somewhat Performed
1.00-1.44	Never	Not Performed

The respondents' responses on their internet experience, preference, and habits and encountered challenges in reading were subjected into analysis, comparison, and categorization.

## IV. RESULTS AND DISCUSSION

### 4.1 Results of Descriptive Statics of Study Variables

Reading is an effective way to enrich the brain with things that are necessary for school and especially for life. It can bring people to a world of knowledge and wisdom. Reading according to Wolf (2016) Online learning environments currently accumulate large amounts of log data. With the development of e-publishing technologies and standards, an increasing number of traditional textbooks have been replaced by e-books (Rainie, 2012). Compared with traditional textbooks, e-books have many benefits, such as saving money, being quickly obtained from the Internet, taking up less space, and being more portable (Shepperd, et. al 2008). Traditional textbooks are progressively being replaced by e-book systems, which are also being utilized more commonly in K-12 education.

Analysis of learning behaviors from these log data is expected to benefit instructors and learners. Since various features have different degrees of association with learning outcome, it is necessary to evaluate each feature by giving a reasonable weight. This research determined the Reading Habits and Information Consumption in the Digital Age of the Grade 12 Students of Vivencio P. Casas Sr. Memorial High School. The next part encompasses the how these factors influence their academic performance which provides a detailed and technical exposition for understanding the association between reading habits and academic achievements and its implications.

#### Extent of Internet Experience among Grade 12 students

**Table 1**  
**Extent of Internet Experience among Grade 12 students**

Indicators	Frequency	Percentage
None	16	11.77%
Less than 1 year	14	10.29%
1-5 years	82	60.29%
More than 6 years	24	17.65%
Total	136	100%

Table 1 illustrates the distribution extent of internet experience among Grade 12 students. 60.29% used the internet for a duration ranging from 1 to 5 years. Additionally, 17.65% of students have more than 6 years of internet experience. Furthermore, 10.29% reported having less than 1 year of internet experience while 11.77% of students with no internet experience at all.

The respondents have varied internet experiences. The result of the study is contrary to the conducted by Mirza, et. al (n.d.) where the majority of the respondents has no internet experience. Similarly, according to Gultiano et. al (n.d.) about 40% of the country's public high schools have computers that have potential for Internet connectivity. However, only 4% of these schools give students access to and training on the use of the Internet. Moreover, the study on the Internet Use among Filipino Public Highs School Students reported that about 80% of the sample students ever-used a computer, but only two-thirds of them have used the Internet. About 12% of students own a computer, but less than half of these students (43%) have Internet connection in their home computers.

The Internet is considered to be the most significant source of information for the individuals who spend most of their time on the internet as compared to academic reading, recreational reading and watching television for entertainment (Adeyemi, 2020). The data depicts that respondents have a varied range of internet experiences from novices to long term users.

### Preferred Reading Formats of the Grade 12 Students Based on Different Purposes

**Table 2**  
**Preferred Reading Formats by the Grade 12 Students**

Format	Mean	SD
On-paper	3.51	0.79
On-screen	3.80	1.05
Any format	3.86	4.69

Table 2 shows the preferred reading formats among Grade 12 students. The On-paper format with a mean preference score of 3.51 and with a standard deviation of 0.7 indicates a moderate preference for traditional print-based reading materials among the students. Whereas the mean preference score for reading on-screen is higher at 3.80, with a standard deviation of 1.05. This implies a stronger inclination for digital reading formats compared to traditional print materials.

In addition, the indicator "any format" with a mean score of 3.86, with a high standard deviation of 4.69. The preference for reading regardless of the medium have a variation in responses indicates that students have diverse preferences when it comes to reading materials, encompassing both print and digital formats.

According to Eijansantos et. al (2020) Print-based has been the traditional format of reading thought to undergo a decline and foretold to eventually find its death on the account of the advent of technology giving birth to digital reading. This finding is in similar to other studies (Conradi, 2014; Dalton, 2014; Hasan & Bao, 2020; Parikh et al., 2020) who have found that nowadays most of the students prefer electronic formats. When students were asked about their preference for academic reading then majority of the responses were that they prefer electronic formats for their academic reading. And this can be because of a free flow of available books on the internet and can be accessed for free. As Aqeel et al., (2020) found that students prefer free resources for their academic purpose.

In contrary, Gunter (2012) believed that students tend to give little value to print-based reading even in a situation where it is the more available medium. In support, Jang and Henretty (2019) reported that a negative attitude towards reading engagement and enjoyment has been pointed towards print reading. Intermediate between print and digital reading, Loh and Sun (2019) in a mixed-method study in six Singaporean schools reported that against popular beliefs, native technologically engrossed adolescents prefer to read physical books but still do not avoid reading e-books and other online reading materials. In support, a recent study reported that there are variations in how comparison and assessment of students' attitudes toward reading in print and electronic reading ought to be carried out (Coiro, 2012).

The data implies that while the Grade 12 students at VPCSMHS generally exhibit a preference for both print and digital reading formats, there is variability in their individual preferences. This entails the importance of providing diverse reading materials to cater to the varied preferences of students.

**Preferred Reading Formats  
by the Grade 12 Students  
based on Different Purposes**

**Table 3  
Preferred Reading Formats by the Grade 12 Students  
based on Different Purposes**

Purpose of Reading	Print		Electronic		Any format	
	F	P	F	P	F	P
Academic (e.g., Assignments preparation for class, recommended readings, Journal Articles, eBooks, etc.)	22	16%	52	39%	62	46%
Pleasure/ Leisure (for Enjoyment/Entertainment i.e., History, Literature, Showbiz, etc.)	12	9%	78	57%	43	32%
Everyday knowledge (Health, Cooking, Current Affair, Problem Solving etc.)	11	8%	70	51%	54	40%

Table 3 shows the preferred reading formats by the Grade 12 Students based on different purposes. 16% of students prefer print materials for academic purposes, 39% of students favor electronic formats, which might include digital textbooks, online articles, and eBooks while 46% are open to adapt to various reading materials depending on convenience or availability. Only 9% of students opt for print materials for leisure reading.

57% prefer electronic formats for leisure, indicating a clear preference for digital content and 32% are open to any format for leisure reading. Similar to leisure reading, a small percentage (8%) prefer print materials for everyday knowledge. 51% opt for electronic formats, reflecting a reliance on digital sources for accessing everyday information. Whereas 40% are receptive to any format for acquiring everyday knowledge. Interest or preference according to Poerbakawatja (1981) is the willingness of an active soul to receive something from the outside.

Several studies have yielded similar findings. In the study Mirza, Pathan, Khatoon & Hassan (2021). In Pakistan, the majority of engineering students prefer electronic books for academic reading and have no preference of formats for leisure reading. Most of the students use social networking sites for fun. However, the students have problems in searching online reading materials. In Indonesia, 43% of the students at the English Education Department, Universitas Kristen reported that the internet developed their reading habits. However, the majority regarded reading as merely an activity for getting information for their school assignments. They considered the internet the main source of information for their assignments. About one-fifth of the students preferred paper-based reading (Bana, 2020).

In another study, Tveit & Magen (2014) reported that among Norwegian 15-year-olds, the majority stated that they preferred reading on e-book readers. They also claimed that introducing digital reading in the classroom could promote reading skills of students who read less often. Marzban (2011) also reported that, in terms of reading comprehension, participants in the experimental group taught with the help of computer-assisted language learning techniques outperformed their counterparts who received only the traditional techniques. According to a study conducted by Rainie, Zickuhr, Purcell, Madden, and Brenner (2012) for Pew Research Center's Internet & American Life Reading Habits Survey that 80% of the Americans 16 and older reads at least occasionally for pleasure, 78% reads at least occasionally to keep up with current events, 74% reads at least occasionally for research on specific topics that interest them, and 56% reads at least occasionally for work or school. Those findings are for technology users who own a cellphone, tablets as well as for internet users.

Electronic formats are preferred by most students for all purposes, emphasizing the strong influence of digital technology on both educational and recreational reading. The continued increase and use of online media content for information gathering also challenges the learner to organize and compose information in a nonlinear fashion while often integrating visual media to synthesize that information.

**Electronic Devices utilized  
by the Grade 12 Students  
for On-Screen Reading**

**Table 4  
Electronic Devices utilized by the Grade 12 Students for On-screen Reading**

Electronic Sources	Weighted Mean	SD	Interpretation
1 Desktop	1.69	0.87	Somewhat Performed
2. Mobile with E-reader	3.22	1.13	Often Performed
3. Smartphone	3.98	1.09	Moderately Performed
4. Tablet/Ipad	1.52	0.93	Somewhat Performed
5. None	1.40	0.79	Not performed

Table 4 outlines the electronic devices utilized by Grade 12 students for on-screen reading. Desktop as an electronic source have a weighted mean of 1.69 interpreted as somewhat performed. On the other hand, Mobile with E-reader has a weighted mean of 3.22, mobile devices equipped with e-readers are often performed for on-screen reading. Smartphones are moderately performed for on-screen reading among Grade 12 students, with a high weighted mean of 3.98. Tablets or iPads are somewhat performed for on-screen reading, with a weighted mean of 1.52. A weighted mean of 1.40 indicates that a small portion of Grade 12 students do not utilize any electronic device for on-screen reading.

Desktop computers appear to have relatively lower usage compared to other devices, as indicated by the lower weighted mean. Mobile devices, including smartphones and those equipped with e-readers, emerge as popular choices for on-screen reading among the respondents. The high usage of smartphones is a primary device for accessing digital content, including reading materials. This finding is supported by (Abdulrasheed & Musa, 2016; Apuke & Iyendo, 2018) who suggested that many university students use the internet on their smart phones for recreational and educational purposes. However, other studies found that most of the students have access to laptops and they utilize more laptops for access to the digital content and electronic books. One of the major reasons can be the provision of free laptops by the government to the hardworking students of the public sector universities.

The recent arrival of digital media and the booming availability of digital documents have deeply modified practices in reading (Liu, 2005). Rao in 2004 claimed that users believe that eBooks are accessibly convenient relative to time and distance and that they make locating information easy, while Wu and Chen (2011) elicited from the graduate students at National Taiwan University that using e-books is undemanding, printing is easy to do, and managing bibliography is convenient. Similarly, Daniel & Woody (2013) conducted an experiment on reading on screen versus reading on paper at home and in the lab, and the 19-year-old students participated in the study.

Alternatively, the study of Woody et al. 2010 indicated that the participants spent more time reading on screen. found out that students preferred reading on text/paper or reading on text/paper is more effective. He observed that when faced with the question of choice, university students preferred reading on paper over screen. Moreover, they concluded that previous experience with e-books did not lead to a preference for reading on screen and that the participants still chose reading on paper. The study on Perspective of Teachers and Students towards the Education Process during COVID-19 in Romanian Universities, result shows that 8.2% of the students were using desktops or laptops for participating in online classes, 0.9% of them were using tablets, while a worrying percentage of 20.9 were connected online via their smartphone. The findings are similar to the results of this investigation.

The data implies the need to understand the device preferences and usage patterns of Grade 12 students for on-screen reading is essential for optimizing digital learning experiences and promoting effective engagement with digital content in educational settings.

**Frequency of the Grade 12 Students  
Usage of Electronic Sources  
for Accessing Reading Material**

**Table 5**  
**Frequency of the Grade 12 Students' Usage of Electronic Sources for Accessing Reading Material**

Electronic Sources	Weighted Mean	SD	Interpretation
1. Social networking websites (e.g., Face book, Twitter, etc.)	4.17	1.03	Moderately Performed
2. Other websites for Free book/articles downloading (Open access Google books)	2.42	1.15	Somewhat Performed
3. Electronic databases (e.g., HEC Digital Library, Science Direct, Emerald, etc.)	2.22	1.13	Somewhat Performed
4. Common search engines other than google (e.g., Ask.com, Bing, yahoo, etc.)	3.06	1.23	Often Performed

Table 5 manifests the trend and frequency of Grade 12 students' usage of electronic sources for accessing reading material. The data reveals that the respondents heavily rely on social networking sites such as Facebook and Twitter as a primary source for accessing reading material. With a weighted mean of 4.17 and a relatively low standard deviation of 1.03, it shows that social networking platforms play a significant role in students' digital reading habits. While other websites offering free books and articles they are not as frequently accessed as the social networking sites. The weighted mean of 2.42 and the higher standard deviation of 1.15 implies that usage varies among students, with some relying more heavily on these sources than others.

Electronic databases, such as the HEC Digital Library and Science Direct, are less frequently used by Grade 12 students compared to social networking sites and other downloading platforms. The weighted mean of 2.22 and standard deviation of 1.13 indicate relatively lower usage, with some variability among students. Common search engines like Bing and Yahoo are moderately used by Grade 12 students for accessing reading material. With a weighted mean of 3.06 and a standard deviation of 1.23, these platforms serve as significant sources for finding reading content, though not as heavily utilized as social networking sites.

The result is relatively similar to the trends of the students' social networking applications for the purpose of Reading. Thus, the results show that 73 students with the ratio of 19.9% always use social networking for their reading purpose. This finding is according to Waseem Muhammad Zia and Ahmed, (2019) studies who found that with the digitalization, the reading trends among students are also transforming and they are focusing on digital contents. However, when students were asked about their leisure reading preference, they again stated that they do not have any preference.

**Challenges Associated with Searching  
for Online reading materials**

Individuals nowadays make unconscious screen readings as a result of the widespread usage of technology. The skills in this area are also developing unconsciously as a result of these unconsciously performed tasks. The development of screen reading abilities is particularly important given the use of technological tools in educational settings for communication, information acquisition, and instruction, because the development of screen reading skills will provide an effective and efficient education in educational environments where technological tools are used. Network connections contain streams of information constantly flowing with substantiated data including well as empirical findings from peer-reviewed journals as well subjective information from personal websites or blogs (Siemens, 2008). Relatively, Users have varied experiences when searching for online reading material.

**Reliability of Information**

The internet ubiquity in education has flooded the teaching and learning process with digital tools and drastically changed many aspects of academic life, including students' reading habits (Bana, 2020). From among the many positive uses of internet, some respondents express concerns about the reliability and authenticity of information found online. With the vast amount of content available, it can be challenging to discern credible sources from misinformation or biased content. This presents a significant obstacle for users seeking accurate and trustworthy information for research, education, or personal interests.

When asked about their experience on utilizing online reading materials and its disadvantage, some students responded that the challenges they mostly faced is the reliability of the information found online:

*"Yes, I use online book like PDF my online experience has been good so far advantage get information ideas online books but are prone to fake news"- Respondent\_5F*

*“Yes, it is good, and I discover something new but not everything is true”-Respondent\_16F*

*“Yes, for my academic works easy to look for the drawbacks some are not reliable” -Respondent\_112F*

Several studies investigate how students learn from internet research tasks on science topics, some research findings stated that successful learning is directly related to the ability to discriminate between reliable and unreliable sources and the selection of reliable reading material for a high percentage of the research time (Wiley et. al, 2002) Thus, the ability to recognize reliable sources seems to be a critical skill for effective learning from online research tasks. At the same time, even the best learners in our earlier studies seemed to have a fragile understanding of what reliability is. Very few could verbalize it or use it to justify their evaluations of reliability. Based on these results, it was clear that students needed instruction in evaluating the reliability of information that they found on the Internet. Work by Brem, Russell & Weems (2001) has shown that in general students are uncritical of the arguments they read on web pages.

### Health Concerns

The linking of the Internet with health and medicine involves all levels of society, including individuals, health care providers, professional organizations, communities, and local and federal governments. A growing body of evidence suggests that despite the benefits of the Internet, this means of communication also figures into the creation of new forms of health risk for some users.

The following excerpts offer insights into individuals' experiences with online reading:

*“Good but sometimes I struggle because of the brightness settings. I can't see it clearly.”-Respondent\_39M*

*“Yes, it was fine. The advantage was you click the related links, but the disadvantage is it caused me headache.” - Respondent\_80F*

*“The advantage is the information that I get from searching online the drawbacks or disadvantage is my eyesight.”- Respondent\_81F*

*“Yes, it was easy the advantage are whatever I want to read I can read it, but to much spending on screen my head hurt.” - Respondent\_83F*

*“Yes, it feel comfortable and convenient the drawbacks destroy our health if I set no limitations.” – Respondent\_122F*

Prolonged use of online books and searching can lead to health issues such as eye strain and headaches. The continuous exposure to screens, especially without adequate breaks or screen time management, can contribute to physical discomfort and strain on the eyes, potentially impacting users' overall well-being and productivity.

### Potential for Addiction

The recent arrival of digital media and the booming availability of digital documents have deeply modified practices in reading (Liu, 2005). Rao in 2004 claimed that users believe that eBooks are accessible relative to time and distance and that they make locating information easy. The ease of access and the abundance of online content can lead to users spending excessive amounts of time engaging in online reading activities, potentially impacting their daily routines, productivity, and overall well-being.

The respondents posed concerns on potential for addiction or excessive screen time associated with online books and searching.

*“The advantage is to get more lesson but the advantage if you always use online book, you maybe addicted online.”- Respondents\_45F*

*“Sometimes I experience online searching like schoolwork. The advantage is to help our study and the drawbacks is addiction to it.”-Respondents\_65F*

### Distraction

The respondents further discuss how they encounter unrelated or irrelevant information while searching for specific reading materials, leading to distractions that divert their attention away from their intended tasks or objectives.

*“Yes, online books offer the convenience of accessibility from anywhere, but drawbacks may include potential distraction and eye strain from prolonged screen time when I am searching for specific content” – Respondent\_127F*

Relevant research study showed that 12% of the respondents set their mobiles on silent or flight mode or turn the Wi Fi off. 10% do not read around their mobile phone, i.e., they put their mobile away. 6% read in a quiet place. Another 6% use a timer to keep track of the reading time to maintain their focus on reading.

### Dependency on Internet Connection

The respondents also highlight the dependency on a stable internet connection for accessing online books and conducting searches. This dependency poses challenges, particularly in areas with poor connectivity or unreliable internet access, where users may struggle to access online reading materials effectively.

*“Yes, I experience online reading like the module of 21st century. The advantage of online searching is to give us experience how to download if the internet is poor.” – Respondent\_129F*

In the study conducted by Horton-Ramos (2020), the results supposed that the cost entailed by digital reading, the purchasing of an expensive electronic gadget that has the capacity to perform online access and the internet connection, are the reasons for the learners not to practice digital reading. Thus, she concluded that technologically based type of reading is not for all; instead, it is limited for those who have the financial means to support the requisites of having an electronic gadget and internet connection. Downsides with respect to digital reading exist. The greatest perhaps is that digital reading is a privilege not for those ‘who cannot afford’.

## Complexity of User Interface

Navigating and interacting with e-reader applications, especially when switching between different files or applications. Similarly, there are reasons found in the literature why digitized reading is not the platform of choice by some. Anuradha and Usha (2006) reported that students do not use e-books because of unfriendly interfaces, unawareness of the demands of e-reading and unfamiliarity with e-book technology which resonates Ismail and Zainab’s (2005) findings that also reported the difficulty students had due to browsing and their preference they had for physical books.

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