

## **Digital Age and Reading habits: Empirical Evidence from Pakistani Engineering University**

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### **Abstract**

The development of technology has transformed the lifestyle of the people at the global level. With technological development, the social networking sites and apps have also developed a lot. That has brought a significant transformation in the methods of communication. Various studies have been conducted to identify their impacts on the reading habits of the individuals/ students. The study aimed to explore the application of the technology and social networking sites by the students of Pakistan. This study adopted a mixed- methods research approach. The data was collected from the first-year undergraduate students of Mehran University of Engineering and Technology, Jamshoro, Sindh Pakistan. For the quantitative analysis, the descriptive statistics were applied including 366 students (male and female), 281 were male students and 85 female students. The qualitative data was conducted with 20 students and the responses were examined through content analysis. The findings revealed that the majority of students had prior access to smartphones than desktops, laptops and tablets. However, some students had no internet experience. For academic reading, most of the students preferred electronic books and there was no preference of formats for leisure reading. Most of the students use Social Networking sites for fun. Additionally, the findings also suggested the problems faced by the students related to searching online reading

materials due to lack of technical skills. The findings of this study may help to understand the students' reading habits and preferences in terms of using technology. Thus, blended teaching methods should be implemented by the teachers and encouraged students to use technology for their reading purposes.

**Keywords:** *Technical Gadgets, Social Networking Sites, Reading preference, Format of Reading, Academic Reading, Leisure Reading*

## **Introduction**

Despite facing several economic and social problems, Pakistan is yet a transforming society, related to the evolving digital developments. Due to digital transformation, the information societies are also developing such as IT Policies, e-government, Wi-Fi services, internet services, initiatives of e-learning, telecom sector and cellular mobile etc. These digital transformations have also caused behavioral changes particularly reading behaviors (Atayeva et al., 2019; Mumtaz et al., 2021). Significant changes have been identified by the scholars (Davidovitch et al., 2016; Fischer et al., 2015; Merchant, 2020; Parikh et al., 2020; Sehar and Ghaffar, 2018) at the global level in the reading habits of the individuals specified in this digital era. Similarly, various researches have also been conducted in Pakistan to assess the reading habits of individuals from various disciplines. However, the influence of the digital media is still under discussion in Pakistan and there are very few conducted studies, which show that there is still a need for empirical evidence in the Pakistani setting.

The online and print media in Pakistan have already highlighted the declining and changing reading habit trends such as government reports, newspapers and various websites (Rahman and Amir, 2019). However, all of those reports and discussions were based on general book reading in hardcopy and they ignored the factor of digital books. Their reports have mentioned the digital gadgets such as computers, laptops, iPad, smartphones etc., as the main reason for the declining reading habits of the individuals. In addition to this, they have shown that the technological abuse has caused decreasing reading habits. According to the report of Pakistan Today (2011), "*book reading habit is on the verge of a decline*". According to the surveys conducted by Gallup Pakistan in 2011, in Pakistan only 28 percent of individuals read books excluding the textbooks, however, in 2002 it was 46 percent of the Population (Shehzadi et al., 2020).

### **Significance of the study**

This study will be a significant contribution to the empirical evidences in the context of Pakistan. The present study will assess the impact of digital media on the reading habits of the students, which is mostly ignored by other studies. In addition to this, the students will be enabled to know the positive applications of the digital gadgets to develop their reading habits. This study will be beneficial for the teachers to adopt new teaching techniques by adopting the modern technologies. The results of the study will apply to its neighboring countries as well because of their regional, cultural and religious alignment with Pakistan.

### **Research Aim and Questions**

The aim of this study, is to assess the application of digital media for purpose of reading among the students in Pakistan. To meet the aim of the study, the following research questions are adopted:

1. Which reading formats are likely to be preferred by the students?
2. Do Social Networks utilize for the reading purpose by the students?
3. What problems associated with searching online reading material are faced by the students?

### **Literature Review**

The definition of reading has been kept changing in every time. In the past, the reading was defined as the interpretation of the visual information provided by any system or code (Baron, 2017). Fischer et al., (2015) defined reading as the procedure of recalling, thinking and linking abstracts according to the functions of the written words. While, Saparova et al., (2020) described reading as, “*the ability to make sense of written or printed symbols*”. From the evolution of human beings, the medium of reading has also evolved from clay tables, stones to the digital media. In the present days, the reading material is vastly available in paper form as well as digital. But the digital devices have more capacity for information storage and sharing through digital gadgets, according to the purpose (entertainment, information seeking, pleasure etc.) of the reader, the reading content is freely available (Guess et al., 2020).

### **Prior experience of using internet**

Since the early 1990s, the Internet has been available in Pakistan. Information and communication technology (ICT) are one of the nation's fastest developing sectors. Only 1.3% of the people used the Internet in 2001. By 2006, this number had risen to 6.5% and to 14% in 2012. In Pakistan, the number of internet users is now 15.9 percent, which means that more than 30 million people are now browsing the Internet (<https://www.pta.gov.pk/en/telecom-indicators/>). According to (Alzahrani & O'Toole, 2017) the Internet experience of students has a more significant effect on their attitudes. No online experience or research program tend to affect student choice for blended learning, but age, year of study, and attitudes to the internet are correlated with positive attitudes to blended learning. In addition, Tekynarslan (2008) cited in (Alzahrani & O'Toole, 2017) observed that students who have access to the Internet at home have considerably more favorable Internet behaviors than students who do not have access to the Internet at home. Previous studies, such as (Nahes & Otaibi, 2012; Tsai et al., 2001); and with university students in Pakistan (Rehman et al., 2010) investigated that students' previous experience with using the Internet as the amount of time or internet usage have a major positive impact on their attitudes towards online reading behavior with greater Internet experience. Hence, Student demographic influences tend to have a diverse effect on the attitudes towards using Internet and adopting new learning approaches.

### **Reading Behavior and Digital Gadgets/Media**

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 the entertainment (Adeyemi, 2020; Coiro, 2020; Davidovitch et al., 2016; Islam et al., 2018; Vyas and Tandel, 2020). According to Saaid and Wahab, (2014) digital gadgets and the internet has a significantly positive impact on their reading habits. Likewise, Waseem Muhammad Zia and Ahmed, (2019) investigated the application of digital media or content among the students and found that most of the students use digital media or digital content for leisure reading and use print or textbooks for academic reading. Furthermore, Merchant, (2020) found that most university students prefer visual modes of learning and they are also perceived to be more significant for the improvement of their academic performance. Most of the scholars (Fawaz & Samaha, 2020; Mumtaz et al., 2021; Noor et al., 2020; Parikh et al., 2020;

Ramzan & Singh, 2009; Saaid & Wahab, 2014; Al-Ahdal, 2020; Alfallaj, 2020) believe that digital content or media has more impacts as compared to the textbooks because of several associated advantages for example, easy access to the information in the form of text, video and audio, non-linearity and interactivity etc.

Al-Ahdal (2020) assessed the effectiveness of eBook interaction logs in the reading performance of Saudi EFL students. The result showed that BookRoll could be used to predict learners' reading behaviors with a reasonable degree of accuracy which would be beneficial to a large number of interested parties including, but not restricted to, educational advisors keen to integrate technology into the EFL classroom in the Kingdom of Saudi Arabia, the teaching community which, for the most part, ignores reading as a skill by resorting to quick summaries in students' mother tongue at times and learners who need to find their individual learning pace and environment.

### **Cell Phone and Social Media Application**

According to Coiro, (2020) cell phones are considered to be the most significant source to access social networking sites. Davidovitch et al., (2016) reported that computer labs are utilized for the application of social sites by most of the students from a small city of Pakistan. Studies also shown that a deep and diverse pool of expertise has been brought on by internet mobile learning among college / university students., for example (Abdulrasheed & Musa, 2016; Apuke & Iyendo, 2018; Hassan, Kazi, & Asmara Shafqat, 2020; Luanganggoon, 2020) discovered that most university students use the internet for educational and entertainment purposes on their mobile devices for internet access. There are various studies (Fischer et al., 2015; Merchant, 2020; Parikh et al., 2020; Sehar & Ghaffar, 2018; Shehzadi et al., 2020) that found a positive impact of social media on the reading habits of the students and they reported that social networking sites are also utilized for the information sharing, self-learning, connection with the family and (Nasari Corresponding author & Noruzi Associate Professor, n.d.). According to the findings of Huang et al., (2014) the application of social media is beneficial for the improvement of academic performance among students. However, Merchant, (2020) estimated an insignificant relationship between the application of the social media and the academic performance of the students.

## **Problems Associated with Searching Online Reading Material**

Digital skills and awareness play a very important role in the academic performance of the students. (Shehzadi et al., 2020) found that most of the students are not aware of the application of the ICT infrastructure, which results in a poor level of learning.(Abbas et al., 2019; Sehar & Ghaffar, 2018) mentioned that in Pakistan students are not taught to learn digital skills and utilize them for their learning process to increase their academic performance. Even most of the teachers are not well aware of the accessibility of the digital libraries that have free online resources for learning of the individuals. The role of parents is also found to be very significant for the acquisition of the digital skills among students (Parikh et al., 2020). The basic skills of searching for resources on the internet, free digital libraries, ICT infrastructure and appropriate usage of social networking sites solely for reading and learning are important for developing academic skills for students. However, students face difficulties in searching and accessing free online reading materials through social networking sites and free digital libraries.

## **Methodology**

Following the positivism philosophical assumptions and deductive research approach, the mixed research design is adopted for this study. The data was collected through quantitative and qualitative questions. The questionnaire is adopted from (Bengtsson, 2016). The sample size of the study is 366 undergraduate students with a 95% confidence level and 5% margin of error. The sample size of the study is calculated through an online calculator (<https://www.qualtrics.com>). Research Ethics were fully followed and the identity of the students was kept secret. Despite that, the students were briefed about the research process and they were informed that they could quit their participation during the research if they feel uncomfortable.

## **Results and Discussion**

After compilation, the data was inserted in SPSS version 22 software and descriptive analysis was applied for quantitative data and content analysis was adopted for the qualitative interviews. Only 20 students filled the questionnaire with quantitative and qualitative questions, therefore, for qualitative analysis only 20 individuals are considered as sample size. The aim of employing the questionnaire was to know the reading preferences of the students and the

application of digital gadgets and social networking sites according to their preferences. The results of the study are discussed below.

**To answer the first research question data of the study, descriptive analysis showed following results:**

### **Preferred Format of Reading Platform**

The below mentioned table shows the format preferences of the respondents about their reading. Based on mean score, it was found that the paper reading preference of the students was (Mean=3.123, SD=1.4020), the on-screen reading preference of the students was (Mean=3.128, SD=1.4401), any Format preference of the students is (Mean=2.992, SD=1.4382). Hence, most of the students preferred on- screen reading.

**Table 1: Preferred format for Reading**

<b>Format</b>	<b>Total Number</b>	<b>Mean</b>	<b>Standard Deviation</b>
On Paper	366	3.123	1.4020
On Screen	366	3.128	1.4401
Any Format	366	2.992	1.4382

### **Format Preference for Academic Reading**

Table 2 shows the format preferences of students regarding their academic reading. It was found that 119 students with the ratio of 32.5% preferred to read printed books, 128 with the ratio of 35% preferred to read electronic books and 119 with the ratio of 32.5% do not have any preference and they were comfortable with any format.

**Table 2: Preferred Format for Academic Reading**

<b>Device</b>	<b>Frequency</b>	<b>Percent</b>
Print	119	32.5
Electronic	128	35
Either One	119	32.5

### **Format preference for Leisure Reading**

Table 3 shows the format preferences of the students regarding their leisure reading. Evidently, it was found that 112 students with the ratio of 33.3% preferred to read printed books,

113 with the ratio of 30.9% prefer to read electronic books and 131 with the ratio of 35.8% did not have any preference and they were comfortable with any format.

**Table 3: Preferred format for Leisure Reading**

Device	Frequency	Percent
Print	112	33.3
Electronic	113	30.9
Either One	131	35.8

**To answer the second research question data of the study, descriptive analysis showed following results:**

#### **Internet Experience of the Participants**

The table mentioned below shows the responses of the participants about their internet experience. The purpose of this question was to identify if the participants are familiar with the internet. Consequently, there were 111 respondents with 30.3 percent who did not have any internet experience, 81 respondents with 22.1 percent with less than 1-year experience, 83 respondents with 22.7 percent who had 1-5 years of internet experience and 91 respondents with 24.9 percent, who had more than 6 years of internet experience.

**Table 4: The Internet Experience of the Participants**

Experience	Frequency	Percent
None	111	30.3
>1 Year	81	22.1
1-5 years	83	22.7
< 6 Years	91	24.9

#### **Access to the Technical Gadgets**

Table 5 shows the access of the students to the technical Gadgets. Therefore, it was found that 86 students with the ratio of 23.5% had access to the desktop, 127 students with the ratio of 34.7% had access to the mobile or smartphones and 79 students with the ratio of 21.6% had access to the laptop and 74 students with the ratio of 20.2% have access to the tablets.

**Table 5: Access to Technical Gadgets**

Device	Frequency	Percent
Desktop	86	23.5
Mobile	127	34.7
Laptop	79	21.6
Tablet	74	20.2

### Application of Social networking for Reading

Table 6 shows 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, 77 students with a ratio of 21.0% often use social networking for reading, 60 students with the ratio of 16.4% sometimes used social networking for reading, 74 students with the ratio of 20.2% rarely used social networking for reading and 82 students with the ratio of 22.4% never use social networking for reading.

**Table 6: Social Networking Application for Reading**

Response	Frequency	Percent
Always	73	19.9
Often	77	21.0
Sometimes	60	16.4
Rarely	74	20.2
Never	82	22.4

**To answer the third question of the study content analysis showed the following results:**

### Qualitative Content Analysis

The qualitative and detailed responses of the participants are analyzed through content analysis (Bengtsson, 2016). The themes are recognized through coding the interview responses and then sub themes and main themes were derived which are shown in the following (Table 7).

**Table 7: Content Analysis of the Qualitative Interviews**

Main Category	Sub Category	Codes
Online Reading problems	Searching	I feel difficulty for searching online reading materials (1) I do not know from where to get PDF books (1) Whenever I find any good book online that is only available on payment. (1) I easily find my relevant content from PDF or online books (2) I access to the freely available content, in this way, I save a lot of money instead of buying Textbooks (3)

	<b>Difficulty in Reading</b>	I do not feel comfortable reading PDF books. (3) I am habitual of highlighting texts from books but I am unable to highlight on online reading materials. (3)
<b>Electronic Sources</b>	<b>Social Media Groups</b>	I have joined numerous groups on Facebook from where I get direct access to my required material (4) We have a WhatsApp group of our friends and classmates where we share PDF books and other online materials with each other (4)
	<b>Google</b>	I mostly search for online reading material through google. (5)
	<b>YouTube</b>	I understand by watching and listening; therefore, I watch online videos from YouTube (6)
	<b>Google Scholar</b>	I search for articles and research papers from google scholar (7)

### Problems in Online Reading

From the content analysis it was found that most of the students do not have technical skills and they find it difficult to access online reading materials or read through online content. Thus, the response of a participant who said, *“I feel difficulty for searching online reading materials”* is showing how he faced difficulty due to lack of technical skill. Another Participant mentioned, *“I do not know from where to get PDF books”*. The students do not have information about free databases to access online books, which can be observed from the response of a participant, *“Whenever I find any good book online that is only available on payment”*. On the other hand, the students who frequently use online reading materials have mentioned the benefits of digital content, *“I easily find my relevant content from PDF or online books”*. Another participant stated, *“I access to the freely available content, in this way, I save a lot of money instead of buying Textbooks”*. Furthermore, one of the participants stated that *“I do not feel comfortable reading PDF books”*. The statement shows that respondent experienced difficulty reading online text.

### Electronic Sources

Additionally, it was found that some students also utilize social networking sites to access the reading and learning contents online. The response of a participant, *“I have joined numerous groups on Facebook from where I get direct access to my required material”*. Another participant mentioned, *“We have a WhatsApp group of our friends and classmates where we share PDF books and other online materials”*. These responses show that students also use Facebook and WhatsApp

for the information sharing. Furthermore, some students responded that they utilize google and google scholar too to access the online reading materials. The response of a participant, *“I mostly search online reading material through google”*, another participant stated, *“I search articles and research papers from google scholar”*. As every individual has different psychology and skills, they have different learning techniques. One of the responses of a participant, *“I understand by watching and listening; therefore, I watch online videos from YouTube”*, which shows that YouTube is also preferred by the students for online learning.

## DISCUSSION

### **Which reading formats are likely to be preferred by the students?**

The results of this study answer the first research question by showing that most of the students do not have a preference for book formats and some students prefer on- screen books for general reading. One of the major reasons for no preference for the reading format by the student is that most of the students belong to rural areas and they are habitual of reading textbooks in print format. As, they are new entrants to the university so it makes them uncomfortable to adopt digital books. This finding is in contrast 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. 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. The same findings were estimated by (Adeyemi, 2020a).

### **Do Social Networks utilize for reading purpose by the students?**

The findings of this study answer the second research question that some students also utilize social networking sites to access reading online content, which is according to the previous studies (Adeyemi, 2020; Coiro, 2020; Hasan & Bao, 2020; Merchant, 2020; Naseri Corresponding author & Noruzi Associate Professor, n.d.; Saaid & Wahab, 2014; Waseem Muhammad Zia &

Ahmed, 2019) who found that in present days, most of the students have easy access to the technical gadgets. This study has found that most of the respondents have access to smartphones and the lowest number of the students have access to tablets. 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. This study found that most of the students did not have experience of internet, this can be because of the demographic and geographic reasons of the students because most of the students belong to the rural areas. In addition to this, the finding of the study also has shown that second greatest number of the students have more than 6 years of internet experience. This shows that the greater number of students have knowledge of social networking sites. This finding is supported by previous studies (Alzahrani & O'Toole, 2017; Nahes & Otaibi, 2012; Tsai et al., 2001) who established that students' previous experience with internet influences positive behavior for the potential learning and broaden the horizons of knowledge and understanding. In the same way, the study found that 19.9% of students always use social networking sites for the purpose of reading and 22.4% never use social networking sites for reading purpose. A higher number of the students use social networking sites for their fun and pleasure. However, other studies (Bădulescu, 2016; Dalton, 2014; Fischer et al., 2015; Mumtaz et al., 2021; Ramzan & Singh, 2009) found that students only use social networking sites for their fun. In contrast to this, some studies (Asif et al., 2020; Baron, 2017; Hasan & Bao, 2020; Kaur & Ghuman, 2019; Saaid & Wahab, 2014) have found that most of the students use social networking sites for access to the information and sharing free information among them and their colleagues.

### **What are the problems associated with searching online reading material faced by the students?**

The findings of qualitative analysis revealed that the students are facing problems in searching for appropriate reading materials through online databases. Likewise, (Waseem Muhammad Zia & Ahmed, 2019) stated that the searching process and selection of the appropriate reading material from the online platforms is difficult for the unskilled students. The study has also found that students do not have information about accessible and available online free

databases from where they can access free digital books; this finding of the study is supported by the previous studies ((Adeyemi, 2020a; Dalton, 2014; Parikh et al., 2020; Shehzadi et al., 2020) as well. Another problem identified from the qualitative analysis is that the students do not feel comfortable for reading through PDF or electronic books. The finding is also supported by (Abbas et al., 2019; Sehar & Ghaffar, 2018) who stated that lack of digital knowledge affects students' academic performance. They find it hard particularly for the academic reading purpose because students are not able to highlight the main points from the pdf books. However, there are options available for highlighting texts in the electronic or PDF books through PDF application, which shows the lack of digital skills of the students. Similarly, (Adeyemi, 2020b) mentioned that the lack of digital skills among students and teachers is a big hindrance to the adoption of blended learning and teaching. However, the present study has found an interesting finding from the qualitative analysis that some of the students utilize social networking sites for their academic purposes. They have formed study groups on their WhatsApp and Facebook applications. Through these groups, they easily communicate with their friends in order to share information, knowledge and learning skills with each other. The study has also shown that YouTube is also a preferred source of learning for the students. There are very few numbers of students who use google scholar for their reading or accessing online reading material.

## **Conclusion**

The growth of the internet and social media has rapidly increased as it has gained an international level of attention from researchers and scholars in the whole world. The way of communication and information sharing trends in the world has been revolutionized as it has also influenced the reading behaviors and trends of the students. The main objective of the study was to identify the application of technological gadgets, an online reading practices and social media for the purpose of reading among students. This study has adopted a mixed- methods design with descriptive analysis and content analysis. Evidently, the findings of the study suggested that most of the students have access to the technical gadgets and some of the students use them for reading. It also found that for academic reading, students prefer printed books and for pleasure or leisure reading, they prefer electronic books and very few students use social media for the purpose of reading and information sharing. Thus, it can be concluded that few numbers of students utilize technical gadgets and social media for their reading. Furthermore, the findings suggested that some

students encounter difficulties while searching appropriate and free online reading materials due to the lack of digital skills. However, interestingly the study found that some university students also utilizing social networking sites for their reading purposes as they formed groups on WhatsApp and Facebook for information and reading material sharing. It is recommended that students should utilize technology and social media for the purpose of their information sharing and skill development. In addition to this, it is also recommended that the teachers ought to adopt the blended teaching techniques by providing proper guidance that encourages students to use technology in a way that benefits them and improves their reading and information sharing skills.

## References

- Abbas, Q., Hussain, S., & Rasool, S. (2019). Digital Literacy Effect on the Academic Performance of Students at Higher Education Level in Pakistan. *Global Social Sciences Review, IV(I)*, 108–116. [https://doi.org/10.31703/gssr.2019\(iv-i\).14](https://doi.org/10.31703/gssr.2019(iv-i).14)
- Abdulrasheed, A., & Musa, B. (2016). *Appraisal of Internet Usage For Educational urposes by Social and Management Science Students in Public Universities and Polytechnics in Adamawa State. 6(3)*, 138–147.
- Adeyemi, I. O. (2020a). Influence of Covid-19 Lockdown on Reading Habit of Nigerians: A Case Study of Lagos State Inhabitants. *Reading and Writing Quarterly. https://doi.org/10.1080/10573569.2020.1857891*
- Al-Ahdal, A. A. M. H. (2020a). EBook Interaction Logs as a Tool in Predicting Learner Performance in Reading. *Asiatic: IIUM Journal of English Language and Literature, 14(1)*, 174-188.
- Al-Ahdal, A. A. M. H. (2020b). Overcoming Pronunciation Hurdles in EFL Settings: An Evaluation of Podcasts as a Learning Tool at Qassim University Saudi Arabia. *Asian EFL Journal Research Articles, 27 (1)*, 86-101.
- Alfallaj, F. S. S., (2020). Technology in Saudi EFL Undergraduate Classrooms: Learning Tool or Weapon of Distraction? *The Asian ESP Journal, 16 (4)*, 97-115.
- Alzahrani, M. G., & O'Toole, J. M. (2017). The Impact of Internet Experience and Attitude on Student Preference for Blended Learning. *Journal of Curriculum and Teaching, 6(1)*, 65. <https://doi.org/10.5430/jct.v6n1p65>
- Hassan, A., Kazi, A. S., & Asmara Shafqat, Z. A. The Impact of Process Writing on the Language and Attitude of Pakistani English Learners. *Asian EFL Journal, 27(4.3)*, 260-277.
- Apuke, O. D., & Iyendo, T. O. (2018). University students' usage of the internet resources for research and learning: forms of access and perceptions of utility. *Heliyon, 4(12)*, e01052. <https://doi.org/10.1016/j.heliyon.2018.e01052>
- Aqeel, M., Shuja, K. H., Abbas, J., Rehna, T., & Ziapour, A. (2020). *The Influence of Illness Perception, Anxiety and Depression Disorders on Students Mental Health during COVID-19 Outbreak in Pakistan: A Web-Based Cross-Sectional Survey. https://doi.org/10.21203/rs.3.rs-30128/v1*
- Asif, M., Anjum, I., & Mansoor, Z. (2020). Teaching English to Pakistani Mainstream School

- Dyslexic Students through Computer-Assisted Reading Materials Linguistics and Literature Review (LLR). *Linguistics and Literature Review*, 6(1), 09–22. <https://doi.org/10.32350/llr.61.02>
- Atayeva, M., Putro, N. H. P. S., Kassymova, G., & Kosbay, S. (2019). Impact of reading on students' writing ability. *Challenges of Science*, 5–13. <https://doi.org/10.31643/2019.001>
- Bădulescu, D. (2016). *Reading in the Digital Age* (Issue 1).
- Baron, N. S. (2017). Reading in a digital age. *Phi Delta Kappan*, 99(2), 15–20. <https://doi.org/10.1177/0031721717734184>
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, 2, 8–14. <https://doi.org/10.1016/j.npls.2016.01.001>
- Coiro, J. (2020). Toward a Multifaceted Heuristic of Digital Reading to Inform Assessment, Research, Practice, and Policy. *Reading Research Quarterly*. <https://doi.org/10.1002/rrq.302>
- Dalton, B. (2014). E-text and e-books are changing literacy landscape. *Phi Delta Kappan*, 96(3), 38–43. <https://doi.org/10.1177/0031721714557451>
- Davidovitch, N., Yavich, R., & Druckman, E. (2016). Don't Throw Out Paper And Pens Yet: On The Reading Habits Of Students. *Journal of International Education Research (JIER)*, 12(4), 129–144. <https://doi.org/10.19030/jier.v12i4.9799>
- Fawaz, M., & Samaha, A. (2020). E-learning: Depression, anxiety, and stress symptomatology among Lebanese university students during COVID-19 quarantine. *Nursing Forum*. <https://doi.org/10.1111/nuf.12521>
- Fischer, L., Hilton, J., Robinson, T. J., & Wiley, D. A. (2015). A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students. *Journal of Computing in Higher Education*, 27(3), 159–172. <https://doi.org/10.1007/s12528-015-9101-x>
- Guess, A. M., Lerner, M., Lyons, B., Montgomery, J. M., Nyhan, B., Reifler, J., & Sircar, N. (2020). A digital media literacy intervention increases discernment between mainstream and false news in the United States and India. *Proceedings of the National Academy of Sciences of the United States of America*, 117(27), 15536–15545. <https://doi.org/10.1073/pnas.1920498117>
- Hasan, N., & Bao, Y. (2020). Impact of “e-Learning crack-up” perception on psychological distress among college students during COVID-19 pandemic: A mediating role of “fear of

- academic year loss.” *Children and Youth Services Review*, 118, 105355.  
<https://doi.org/10.1016/j.chilyouth.2020.105355>
- Hassan, A., Kazi, A. S., Shafqat, A., & Ahmed, Z., (2020). The Impact of Process Writing on the Language and Attitude of Pakistani English Learners. *The Asian EFL Journal*, 27 (4.3), 260-277
- Hassan, A., Mitchell, R., & Buriro, H. A. (2020). Changes in uses of salutations in British English. *International research journal of management, IT and social sciences*, 7(1), 197-204
- Huang, S. H., Capps, M., Blacklock, J., & Garza, M. (2014). Reading Habits of College Students in the United States. *Reading Psychology*, 35(5), 437–467.  
<https://doi.org/10.1080/02702711.2012.739593>
- Islam, S., Malik, M. I., Hussain, S., Thursamy, R., Shujahat, M., & Sajjad, M. (2018). Motives of excessive Internet use and its impact on the academic performance of business students in Pakistan. *Journal of Substance Use*, 23(1), 103–111.  
<https://doi.org/10.1080/14659891.2017.1358305>
- Kaur, A. P., & Ghuman, S. S. (2019). Reading Habits of Postgraduate Students of Khalsa College, Amritsar: A Survey. *KIIT Journal of Library and Information Management*, 6(2), 121.  
<https://doi.org/10.5958/2455-8060.2019.00017.x>
- Luangangoon, N. (2020). Content and Language Integrated Learning (CLIL) Teaching Practices in Thailand Higher Education. *The Asian ESP Journal*, 16 (4), 233-258.
- Merchant, G. (2020). Reading with technology: the new normal. *Education* 3-13.  
<https://doi.org/10.1080/03004279.2020.1824705>
- Mumtaz, N., Saqulain, G., & Mumtaz, N. (2021). Online academics in Pakistan: COVID-19 and beyond. *Pakistan Journal of Medical Sciences*, 37(1), 1–5.  
<https://doi.org/10.12669/pjms.37.1.2894>
- Nahes, K., & Otaibi, A. (2012). Attitudes Towards the Use of the Internet \*. *Psychology Research*, 2(3), 151–159.
- Naseri Corresponding author, Z., & Noruzi Associate Professor, A. (n.d.). *The Effect of Digital Age on Youth Reading Habits and practices*.
- Noor, S., Ali, M. N., & Husnine, S. M. (2020). Performance of Online Classes in Lahore, Pakistan During Covid-19. *Performance Improvement*, 59(9), 33–42.  
<https://doi.org/10.1002/pfi.21938>

- Parikh, K., Vyas, P., & Parikh, S. (2020). A Survey on Reading Habit of Library Users during COVID-19 Lockdown. *Library Philosophy and Practice (e-Journal)*.
- Rahman, F., & Amir, M. P. (2019). *TRENDS IN READING LITERARY FICTION IN PRINT AND CYBER MEDIA BY UNDERGRADUATE STUDENTS OF HASANUDDIN UNIVERSITY*. <https://doi.org/10.18488/journal.61.2019.72.66.77>
- Ramzan, M., & Singh, D. (2009). Status of information technology applications in Pakistani libraries. *The Electronic Library*, 27(4), 573–587. <https://doi.org/10.1108/02640470910979543>
- Rehman, K. U., Hunjra, A. I., Safwan, N., & Ahmad, A. (2010). Students' attitude towards the Uses of Internet. *International Journal of Business and Management*, 5(6), 46–55. <https://doi.org/10.5539/ijbm.v5n6p46>
- Saaid, S. A., & Wahab, Z. A. (2014). The Impact of Digital-Based Materials on Undergraduates' Reading Habit. *International Journal of Social Science and Humanity*, 4(3), 249–253. <https://doi.org/10.7763/ijssh.2014.v4.357>
- Saparova, D. R., Kanagatova, A. M., Zhanbosinova, A. S., & Chzhan, Y. Y. (2020). Cultural/social media space of the digital generation. *Space and Culture, India*, 7(4), 194–207. <https://doi.org/10.20896/SACI.V7I4.535>
- Sehar, N., & Ghaffar, A. (2018). *Reading Habits Among Undergraduate Students of NED University of Engineering and Technology, Karachi, Pakistan: A Pilot Study*.
- Shehzadi, S., Nisar, Q. A., Hussain, M. S., Basheer, M. F., Hameed, W. U., & Chaudhry, N. I. (2020). The role of digital learning toward students' satisfaction and university brand image at educational institutes of Pakistan: a post-effect of COVID-19. *Asian Education and Development Studies*. <https://doi.org/10.1108/AEDS-04-2020-0063>
- Supriyatno, T., Susilawati, S., & Ahdi, H. (2020). E-learning development in improving students' critical thinking ability. *Cypriot Journal of Educational Sciences*, 15(5), 1099-1106
- Tsai, C. C., Lin, S. S. J., & Tsai, M. J. (2001). Developing an Internet Attitude Scale for high school students. *Computers and Education*, 37(1), 41–51. [https://doi.org/10.1016/S0360-1315\(01\)00033-1](https://doi.org/10.1016/S0360-1315(01)00033-1)
- Us Saqlain, N., Shafqat, A., & Hassan, A. (2020). Perception Analysis of English Language Teachers about Use of Contextualized Text for Teaching ESP. *The Asian ESP Journal*, 16(5.1), 275-299

Vyas, P., & Tandel, B. (2020). THE IMPACT OF LOCKDOWN DUE TO COVID-19 IN 2020 ON READING HABITS OF ACADEMIC STAFF OF STATE OPEN UNIVERSITIES: A STUDY. *Towards Excellence*, 28–37. <https://doi.org/10.37867/te120104>

Waseem Muhammad zia, M., & Ahmed, F. (2019). *Possible uses of web 3.0 in websites of Libraries of Academic Institutions of Pakistan*.

## Appendix- A: Questionnaire

### About Yourself

1. You are  Male  Female

2. You study in \_\_\_\_\_

3. Your internet use experience:  None  Less than 1 year  1–5 years  More than 6 years

4. You Like to read:

Format	Always	Often	Sometimes	Rarely	Never
On paper					
On-screen					
Any format (Paper/Screen) is fine					

5. Your preferred format for reading according to purpose:

Purpose of Reading	Format		
	Print	Electronic	Either One is Fine (Print or electronic)
Academic (e.g., Assignments preparation for class, recommended readings, Journal Articles, eBooks, etc.)			
Pleasure/ Leisure (for Enjoyment/Entertainment i.e., History, Literature, Showbiz, etc.)			
Everyday knowledge (Health, Cooking, Current Affair, Problem Solving etc.)			

6. Do you have access to following devices for reading (please tick the relevant box(es))?

- Desktop       Mobile/smart phone       Laptop       Tablet (iPad/ Kindle)  
 None

7. How often do you use the following devices for reading on screen?

Electronic Sources	Always	Often	Sometimes	Rarely	Never
Desktop					
Mobile with E-Reader/ Smartphone					
Laptop					
Tablet (iPad/ Kindle)					

**8. How often do you use the following electronic sources for accessing reading material?**

<b>Electronic Sources</b>	<b>Always</b>	<b>Often</b>	<b>Sometimes</b>	<b>Rarely</b>	<b>Never</b>
Social networking websites (e.g., Face book, Twitter, etc.)					
Other websites for Free book/articles downloading (Open access journals etc.)					
Google books					
Google Scholar for articles					
Electronic databases (e.g., HEC Digital Library, Science Direct, Emerald, etc.)					
Common search engines other than google (e.g., Ask.com, Bing, yahoo, etc.)					

**9. Have you ever used online books? What was your online searching experience? the advantages and drawbacks?**

**10. What's your experience been like using your e-reader? Please comment on anything related to likes, dislikes, etc. (open ended)**

**11. Describe how you typically find online information for your academic work.**

**12. Have you ever used any other electronic sources for academic work? (i.e., e-journals, websites, ...)**

**Thanks a Lot for Your Cooperation**

**Appendix – B: Content Analysis**

<b>Main Category</b>	<b>Sub Category</b>	<b>Codes</b>
<b>Online Reading Problems</b>	<b>Searching</b>	I feel difficulty for searching online reading materials (1) I do not know from where to get PDF books (1) Whenever I find any good book online that is only available on payment. (1) I easily find my relevant content from PDF or online books (2) I access to the freely available content, in this way, I save a lot of money instead of buying Textbooks (3)
	<b>Difficulty in Reading</b>	I do not feel comfortable reading PDF books. (3) I am habitual of highlighting texts from books but I am unable to highlight on online reading materials. (3)

<b>Electronic Sources</b>	<b>Social Media Groups</b>	I have joined numerous groups on Facebook from where I get direct access to my required material (4) We have a WhatsApp group of our friends and classmates where we share PDF books and other online materials (4)
	<b>Google</b>	I mostly search for online reading material through google. (5)
	<b>YouTube</b>	I understand by watching and listening; therefore, I watch online videos from YouTube (6)
	<b>Google Scholar</b>	I search for articles and research papers from google scholar (7)