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**RESEARCH ARTICLE**

## From Paper to Screen and from Pen to Keyboard: Digital Reading and Word Processing among Moroccan EFL Learners

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**ABSTRACT**

The paper in hand aims at exploring Moroccan EFL learners' attitudes towards digital reading and word processing as well as the benefits and challenges associated with these two recently spread practices. A convenience sampling technique was utilized by the researchers of the present study to select a sample consisting of 64 EFL learners belonging to the School of Languages, Literature, and Arts, Kenitra. This sample involved 34 males and 30 females whose ages ranged between 21 and 52 years old. The participants were asked to fill out a 5-point Likert scale questionnaire divided into two sections, namely digital reading and word processing. The collected data were then analyzed using the 26th version of Statistical Package for Social Sciences software (SPSS). The findings of the survey indicate that the participants hold positive attitudes towards digital reading and word processing. They also reveal that the informants face challenges in digital reading similar to those they encounter in word processing.

**KEYWORDS**

Digital literacy, digital reading, paper-based reading, word processing.

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**1. Introduction**

Nowadays, thanks to their affordability, convenience, and necessity, technological devices have become ubiquitous. Their presence in everyday life concern has led to massive changes in the way in which individuals and groups behave. One of the key changes that occurred due to the widespread use of technological devices is the move from paper to screen. There has been a shift in the means through which people, specifically students, read and compose. Print books have been replaced by e-books, tablets, laptops, and smartphones, while paper and pen have been replaced by word-processing platforms. According to De Groote & Dorsch (2001), universities and libraries note a decline in the use of print journals and magazines as readers, the younger generation in particular, are turning to online platforms. Furthermore, there is also a noticeable trend of students utilizing word processing platforms for composing their writing tasks (Murda, 2020).

In the Moroccan context, many voices, including the Higher Council for Education (2015), have been calling for the integration of ICT in education. These voices have been silenced by the argument that Moroccan students are not equipped with technological devices that would enable them to experience the beneficial use of ICT in education. However, this argument can be easily refuted. According to a report issued by the National Telecommunications Regulatory Agency (ANRT, 2020), 97,4% of Moroccans aged 12 to 65 years old own mobile phones, and 83,1% of them own smartphones. The report also reveals that 84,1% of the same population have individual access to the internet. It is also worth mentioning that during the lockdown caused by the Covid-19 pandemic outbreak, all Moroccan schools shifted to distance learning. Consequently, Moroccan students gained valuable experience in reading and composing through the use of digital devices.

As mentioned earlier, there has been a tendency among younger generations to move from print books to e-books. The practice of reading using screens instead of print papers is referred to as digital reading, e-reading, and screen-based reading. This concept can be defined as the process of accessing and interpreting written texts through an electronic device, be it a smartphone, a laptop, or a tablet, to name but a few (De Groot & Dorsch, 2001). These devices provide users with features that enable them to easily copy, highlight, comment, define, translate, etc. These features facilitate the process of reading and bring about better reading comprehension (Herath, 2010). They, as reported by Bentayeb (2012), demonstrate benefits across various reading activities, specifically extensive and intensive reading.

The widespread adoption of digital devices has reshaped not only the way in which individuals approach written content, but also how they produce it. Digital devices have become a tool commonly used among university students to draft, edit, and refine their written tasks (Hardisty & Windeatt, 1989; Owston, Murphy, & Wideman, 2011). The applications through which they type their written works are referred to as word processing. A number of applications, including Microsoft Word, Google Doc, Papers, and Leaves, to name a few, provide users with platforms in which they can type, edit, modify, and publish their composed work. The significance of word processing has been revealed decades ago. It was well established that computers enable students to compose longer texts and avoid a number of errors, especially mechanics-related errors (Piper, 1987; Hardisty & Windeatt, 1989; Cochran-Smit, 1991).

Despite their benefits, digital devices have brought to light several drawbacks. Across the majority of studies embarking on the drawbacks of ICT in education, eye fatigue was consistently identified as the primary concern among users of electronic devices (Spencer, 2006; Kang, Wang and Lin, 2009; Jeong, 2012; Divya & Haneefa, 2020). Besides eye fatigue, Borysiuk (2013) enlists a number of the problems ICT presents in education. He claims that technological devices increase distraction, offer false information, make cheating easier, hinder fundamental skills, and become expensive to maintain. These challenges should not be used as arguments to avoid the integration of ICT in education, especially considering the rapid pace at which the world has been adopting technology. Instead, they are listed to be acknowledged, addressed, avoided, and resolved.

In fact, the benefits of technological devices rely on the ability to effectively use them. The effective use of digital devices is generally referred to as digital literacy. This term was defined by Smith & Johnson (2010) as the learners' skills and expertise in employing digital tools for communication, expression, and social interaction in various life scenarios. Canada's Center for Digital and Media Literacy (2014) enlists three key competencies learners are to master to achieve digital literacy: (1) information literacy, involving the capacity to access, evaluate, and critically analyze digital information from various sources; (2) communication literacy, emphasizing the effective use of digital communication tools; and (3) digital citizenship, which involves understanding ethical considerations related to the use of technology.

### **1.1. The Objective of this Study**

The increasingly widespread use of digital reading and word processing practices among Moroccan EFL learners presents a current issue that requires immediate considerations. As learners integrate technological devices into their scholastic tasks, it is necessary that their choices are driven by certain purposes and attitudes. These choices also encompass certain benefits as well as challenges. The aim of this survey is to identify Moroccan EFL learners' attitudes towards digital reading and word processing, as well as the benefits and challenges associated with these two practices. This survey is significant as it explores the crucial presence of ICT among EFL learners, enlists ICT benefits that should be reinforced, and identifies ICT challenges that should be overcome.

### **1.2. Research Questions and Hypotheses**

This paper attempts to answer the following questions:

**Q1:** How do Moroccan EFL learners perceive digital reading and word processing?

**Q2:** How do Moroccan EFL learners approach digital reading and word processing?

**Q3:** What challenges do Moroccan EFL learners face in digital reading and word processing?

### **1.3. Research Hypotheses**

**RH1:** Moroccan EFL learners hold positive attitudes towards digital reading and word processing

**RH2:** Moroccan EFL Learners demonstrate flexibility as they utilize both paper and pen along with digital devices in reading and writing.

**RH3:** Moroccan EFL learners encounter technical obstacles when engaging in digital reading and word processing.

## **2. Methodology**

This section presents the methodological choices and procedures followed to collect and analyze data. It also introduces and discusses the outcomes derived from the conducted study.

## 2.1 Participants

The sample of this survey consists of 64 undergraduate students enrolled in the Department of English Studies, School of Languages, Letters, and Arts, Kenitra. It consists of 34 males and 30 females, all falling within the age range of 21 and 52 years old. A convenience sampling technique was applied to select the sample. Under this method, only individuals of the population who are available and willing to participate were selected. Their willingness signifies their commitment and readiness to taking the questionnaires seriously, as argued by Creswell (2012).

**Table (1): The Distribution of Participants in Term of Gender**

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	34	53,1	53,1	53,1
	Female	30	46,9	46,9	100,0
	Total	64	100,0	100,0	

## 2.2 Instruments

For the purpose of gathering data, a 5-point Likert scale questionnaire, a widely utilized instrument, was designed and distributed through Google Forms. The questionnaire was organized into sections covering participants' demographics, preferences, and accessibility of digital devices, along with inquiries into their attitudes, practices, and challenges concerning digital reading and word processing. Through a bivariate test, it was revealed that the questionnaire items positively correlate ( $p=0.000<0.05$ ). These results support the validity of the questionnaire. In order to assess the internal consistency, we calculated Cronbach's alpha value coefficients for the questionnaire. As shown in Table 2, the results indicate a high level of reliability.

**Table (2): Reliability Analysis: Cronbach's Alpha and Item Count**

Reliability Statistics	
Cronbach's Alpha	N of Items
,933	30

## 2.3 Data Analysis

To perform statistical analysis of the collected data, it was imported into the 26th version of the Statistical Package for Social Science (SPSS) application. Frequency statistical tests were used to analyze the demographic data, whilst descriptive statistical tests were applied to analyze the 5-point Likert-scale data. Table (2) below illustrates the interpretation of the values of the 5-point Likert-scale measurement:

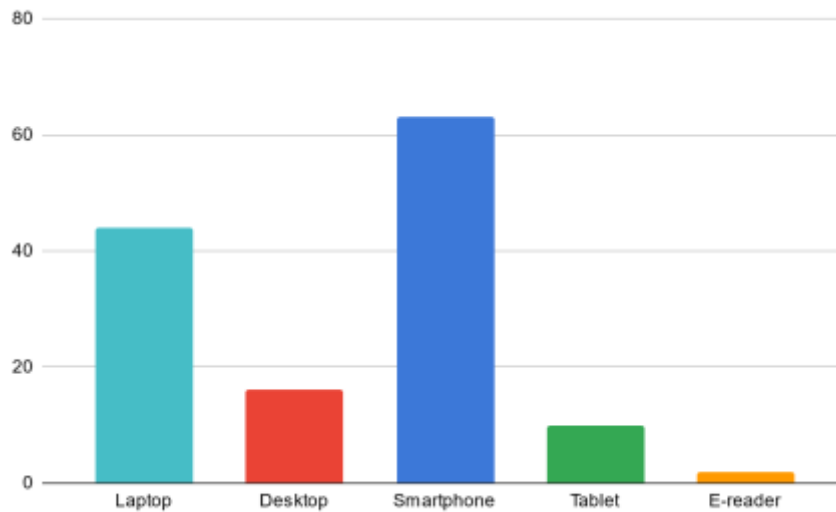
**Table (3): The values and Interpretations of our 5-Point Likert-Scale Measurement**

Likert-Scale Description		Likert-Scale	Likert-Scale Interval
Strongly disagree	Never	1	1.00 - 1.80
Disagree	Rarely	2	1.81 - 2.60
Neutral	Sometimes	3	2.61 - 3.40
Agree	Often	4	3.41 - 4.20
Strongly agree	Always	5	4.21 - 5.00

## 3. Findings

Before shedding light on the main issues addressed in this paper, it is crucial to confirm the sample's technological accessibility and familiarity. Concerning the types of technological devices owned and used by the participants in the process of digital reading and word processing, it was reported, as illustrated in Figure (1), that 63 participants are in possession of smartphones, 44 respondents possess laptops, 17 individuals have desktop computers, 14 own tablets, and 2 participants are equipped with e-readers. These numbers reveal that the vast majority of participants possess more than one technological device. The responses of the sample confirm the aforementioned statistics put forward by the National Telecommunications Regulatory Agency (ANRT, 2020).

**Figure (1):** *The Distribution of the Technological Devices Owned by the Participants*



**3.1 Digital Reading**

Table (4) displays the participants' preferences regarding reading in print versus e-reading. Among the 64 surveyed participants, (N=47, 73.4%) expressed a preference for print reading, while 26.6% indicated a preference for digital reading. Age is not a playing factor in these preferences as both print and digital reading are reported to be preferred by participants belonging to different generations. Due to the limited number of participants, it is impractical to examine the significance of the differences in reading means preferences based on the variable of age.

**Table (4):** *The Participants' Preference of Reading in Print over Digital Reading*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	47	73,4	73,4	73,4
	No	17	26,6	26,6	100,0
	Total	64	100,0	100,0	

As indicated in Table (5), this survey's participants generally acknowledge that digital reading enhances their overall reading comprehension (Mean=3.33, SD=1.24) and consider digital reading materials to be practical (Mean=3.45, SD=1.37). They also find digital reading to be more flexible (Mean=3.45, SD=1.37) and more engaging than print reading (Mean=3.14, SD=1.25). Furthermore, this sample perceives digital texts as providing helpful and easy-to-use features, such as highlighting, copying, and underlining (Mean=3.89, SD=1.35).

**Table (5):** *The Participants' Perceptions and Attitudes towards Digital Reading.*

	Mean	N	Std. Deviation
Digital reading enhances my overall reading comprehension	3,3281	64	1,23513
Digital reading material are practical	3,4531	64	1,36777
Digital reading makes the text flexible	3,4531	64	1,36777
Digital reading is more engaging that print reading	3,1406	64	1,24553
Digital texts provide helpful and easy features (highlight, copy, underline, etc)	3,8906	64	1,34657

As exhibited in Table (6), informants, on average, tend to seek the digital version of any print material shared by the professor (Mean=3.05, SD=1.31) and make copies of the same digital reading material across all their devices (Mean=3.17, SD=1.16). However, when presented with digital reading material, participants express a moderate tendency to print it (Mean=2.84, SD=1.17). They also reveal their tendency to read the same material through both print and digital devices (Mean=3.14, SD=1.24). It is also

revealed that the sample indicates a moderate preference for taking-notes on paper while reading a digital text (Mean=3.30, SD=1.45).

**Table (6): The Participants' Practices in Relation to Digital Reading.**

	Mean	N	Std. Deviation
If the professor shares a print material, I look for its digital version	3,0469	64	1,31451
I read the same text through print and digital devices	3,1406	64	1,24553
I make copies of the same digital reading materials in all my devices	3,1719	64	1,16230
I take notes on papers while reading a digital text	3,2969	64	1,45493
If the professor shares a digital reading material, I print it.	2,8438	64	1,17133

Concerning the challenges exposed by digital reading, the informants expressed their concerns about the negative impact of screens on their eyes during digital reading (Mean=3.26, SD=1.41). However, the quality of their devices (Mean=2.42, SD=1.23) and the technical issues they encountered (Mean=2.42, SD=1.30) received relatively lower mean scores. Similarly, the participants reported a moderate level of distraction while approaching reading through digital devices (Mean=2.54, SD=1.43). They also revealed that print expenses are not the main factor pushing them to opt for digital reading texts (Mean=2.76, SD=1.36).

**Table (7): Challenges Encountered by the Participants in Relation to Digital Reading**

	Mean	N	Std. Deviation
I feel distracted while reading digital texts	2,5469	64	1,43571
Print expenses which push me to look for digital reading texts	2,7656	64	1,36559
Screens negatively affect my eyes while reading digitally	3,2656	64	1,41693
The quality of my devices hinders my digital reading experience	2,4219	64	1,23191
I have technical issues dealing with digital devices	2,4219	64	1,30694

### 3.2 Word Processing

Table (8) illustrates the participants' preferences between typing and handwriting. As indicated, 39.1% of the informants prefer the traditional method of handwriting, while a majority of 60.9% favor typing. Similar to reading preferences, age is not a playing factor in these preferences as typing and handwriting are reported to be preferred by participants belonging to different generations.

**Table (8): The Participants' Preferred Writing Means**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Handwriting	25	39,1	39,1	39,1
	Typing	39	60,9	60,9	100,0
	Total	64	100,0	100,0	

The participants generally reported that word processing platforms offer useful features (Mean=3.53, SD=1.24), enhance their writing quality (Mean=3.50, SD=1.24), help them avoid errors (Mean=3.85, SD=1.25), and facilitate the process of sharing their writing products with their professors (Mean=3.86, SD=1.30). They also reported that the written products they compose through word processing platforms are better than those handwritten (Mean=3.31, SD=1.40).

**Table (9):** *The Participants' Perceptions and Attitudes towards Word Processing.*

	Mean	N	Std. Deviation
Word processing platforms provide useful features	3,5312	64	1,24682
Word processing enhances my writing quality	3,5000	64	1,40294
My writing tasks using word processing platforms are better than those with pen and paper	3,3125	64	1,35547
Word processing are easier to share with professors	3,6875	64	1,30779
Auto-correcting features help me avoid errors	3,8594	64	1,25821

Regarding word processing practices, the participants reported that they usually use paper and pen in the process of brainstorming (Mean=3.25, SD=1.24). Unsurprisingly, they reported that they use these platforms to correct the structural and mechanics errors in their written products (Mean=3.43, SD=1.13). However, the practice of using word processing platforms to share their written products (Mean=2.60, SD=1.12) and to seek feedback (Mean=2.98, SD=0.98) was not common among the subjects of this survey. It is also reported that the informants' preference was not driven by their bad handwriting (Mean=2.15, SD=1.10).

**Table (10):** *The Participants' Practices Related to Writing and Word Processing.*

	Mean	N	Std. Deviation
I compose using pen and paper, and word processing is used only for publishing.	2,6094	64	1,12147
I use word process because of my bad handwriting	2,1562	64	1,10150
I invite my peers to proofread my writings using word processing platforms	2,9844	64	,98387
I use word processing platforms to correct my structural and mechanical errors	3,4375	64	1,13913
I use paper and pen in the process of brainstorming	3,2500	64	1,24722

Generally, the informants expressed their disagreement with the statements related to distraction while typing (Mean=2.56, SD=1.08), technical issues using word processing platforms (Mean=2.50, SD=1.15), and problems in printing the written outcomes (Mean=2.46, SD=1.03). However, they agreed that screens negatively affect their eyes while typing (Mean=3.42, SD=1.20) and showed some sort of fear of technical and electrical problems they might face before accomplishing their writing task (Mean=2.76, SD=1.25).

**Table (11):** *The challenges Participants Encounter in Relation to Word Processing.*

	Mean	N	Std. Deviation
I feel distracted while typing	2,5625	64	1,08196
I have some technical issues using word processing platforms	2,5000	64	1,15470
Screens negatively affect my eyes while typing	3,4219	64	1,20587
I encounter problems when it come to printing my writing outcome	2,4688	64	1,03845
Technical issues (electricity, malwares, etc) threaten my writing accomplishment	2,7656	64	1,25663

#### 4. Discussion

Having analyzed the collected data, this paper successfully answers the three put forward questions. The findings of this survey, which are basically the statistical answers to the paper's research questions, align with and confirm the hypotheses under evaluation. These letters hypothesize that: (1) Moroccan EFL learners hold positive attitudes towards digital reading and word processing, (2) demonstrate flexibility as they utilize both pen-and-paper methods and digital devices in reading and writing, and (3) encounter technical obstacles when engaging in digital reading and word processing.

As indicated in the obtained results, the majority of participants hold positive attitudes towards digital reading and acknowledge its practicality and flexibility. As opposed to the findings of some previous studies whose informants declare that print reading is more efficient in enhancing learners' comprehension (Mangen et al., 2013; Chen et al., 2014), this survey's informants report that digital reading provides a better reading experience compared to print reading, as it provides features helping them come up with

better understanding of the reading material. Yet, neither their attitudes nor digital reading features could change their preference. This choice could be pushed by the challenges they encounter while reading through digital devices.

The informants reported that they print and copy the digital reading materials across all the technological devices they own. Indeed, these two practices can be interpreted in three ways. First, they unveiled their flexibility in reading through different means, which is possibly attributed to their familiarity with and access to technological devices. Second, their preference for print reading, as already indicated, pushes them to print their digital reading materials. Third, these two practices revealed that the participants seek accessibility. This latter, in turn, reveals the participants flexibility in reading through different mediums.

The surveyed informants reported their preference for word processing over handwriting. As indicated in the obtained results, their bad handwriting is not among the reasons why they hold such preference. Indeed, the main factor pushing them to prefer word processing platforms is the correcting features they provide. These features allow users to correct grammar and mechanics related errors. This positive impact of word processing platforms on writing quality, grammar, and mechanics was confirmed decades ago (Fisher 1983; Aumack 1985; Case 1985).

The participants reported that technological issues, especially malwares and electricity problems, threaten their writing accomplishments. They think that their written products, out of a sudden, can be gone due to malwares or a power interruption. This fear is explained as only 28.9% of the sample reported using online word processing platforms, which automatically second-to-second save the written works. However, this fear did not affect their preferences. Which means, the benefits provided by word processing platforms surpass the challenges encountered by their users.

Generally, the participants revealed that the issues they face in digital reading are similar to the ones encountered in word processing. Devices' quality and familiarity with certain features hinder the potential benefits they might gain from these platforms. They also reported that screens negatively impact their eyes. These results align with the findings of previously conducted studies (Kang, Wang and Lin, 2009; Rho and Gedeon, 2000; Jeong, 2012). The idea of challenges is not attached to digital reading and word processing exclusively. Even print reading and pen to paper writing expose a number of challenges to learners. The primary purpose of identifying challenges is to expose them in order to innovate or think of possible solutions. This, in turn, does not mean that we are advocating one method over another. Rather, we call for the flexibility in using both methods and integrating them in order to enhance reading and writing experiences. That is, our purpose is the scholastic outcome rather than the mean per se.

## 5. Conclusion

The findings of this survey reveal that the participants hold a positive impact towards digital reading and word processing. This preference was clearly unveiled to be logistic and language driven. They also indicate that the participants encounter digital reading challenges quietly similar to the ones they face in word processing. In order to critically understand the outcomes of this survey, a respected amount of attention should be given to the standard deviation values obtained across all items. These high SD values indicate a slight variability of response. This variability necessitates the conduction of more studies tackling this issue in order to come up with a bigger and clearer picture. The limited number of participants taking part in this study along with the basic questions asked hinder a deeper analysis of this issue.

While this study provides valuable insights into the shift of Moroccan students towards digital reading and word-processing, there are two main limitations that should be acknowledged. First, the small size of the sample taking part in this survey does not represent the diverse population of Moroccan students. Consequently, the findings of this paper cannot be generalized. Second, the informants' self-reporting or interpretations of the survey's items could lead to biases or inaccuracies. That is, the reported responses could be misleading and do not reflect the true attitudes and perceptions of the participants.

The paper in hand succeeded to answer three main questions related to the investigated issue. However, there is room for future research to address the limitations of the current survey. Further studies should conduct similar surveys on a larger and diverse sample to gain generalizable findings. Moreover, future research is required to provide insights into the factors influencing this shift. Also, experimental studies can be conducted to evaluate and quantitatively measure the long-term impact of digital reading and word-processing on students' academic performance and scholastic achievements.

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