



Dyslexic Students' Motivation, Habits and Attitudes towards Digital-based Reading: A Case Study of EFL College Students

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Introduction

Modern technologies have transformed the process of writing, reading, publishing and handling books into new platforms that are different from the ordinary processes that culturally we are familiar with. The use of digital technology provides readers with easily accessible tools and channels for communication and sharing information in relation to their reading habits, activities and preferences. So, it becomes essential for teachers and students to insert technology in their daily reading lessons as students are more engaged in technology-based lessons (Derene, 2013). The facility of e-reading, where the students can read on a hand held device, help students select text easily by just pressing a button, change the text fonts, watch animated videos, and sometimes read aloud with the device. However, this happens parallel to an advertising and data collection process involving publishing companies and booksellers. Present-day reading materials include print and digital texts, images, tables, diagrams, labels, and animations. The incorporation and combination of internet and information communication technologies with the concept of reading, of which the outcome has offered digital or electronic learning, has changed the concept of reading to a more progressive one that changes the view of the students to a more mature one.

Although digital-based reading is no longer a special issue nowadays as all kinds of people, whether students or not are fond of it. It is still not easy to be a daily natural phenomenon due to the challenges readers may face as mentioned by Dalton and Proctor (2008, p. 298), that digital texts can be “nonlinear, multimodal with a heavy visual orientation, interactive, unbound in time and space, with murky conveyance of authorship and authority”. All these challenges are related to the students that are not disabled and who are not suffering from any trouble in reading skills, not dyslexic. Students with special needs or what is called dyslexic students are those students who face difficulties in dealing with written words. Dyslexia, as Tejero et al. (2019) describe, is a developmental disorder often characterized by complications in learning and using reading skills, in spite of sufficient instruction, normal intelligence and intact overt sensory abilities. With more emphasis, Tejero et al. (2019) claim that compared to normal people, persons with dyslexia are slow readers and often make more reading errors, than a non-dyslexic person. Valas (1999) demonstrated that many dyslexic students feel helpless and they usually avoid reading more than their colleagues (Salonen et al., 1998). Notably, most dyslexic students develop negative attitudes towards reading (Mihandoost et al., 2010), as they are poor readers (Barton, 2000). On



the other hand, their motivation towards learning is less than their peers. Fulk et al. (1998) convey the comment of many teachers who confirm that it is a common characteristic of dyslexic students. A study by Odegard et al. (2020) revealed that the constant failures and negative experiences the students with dyslexia undergo in school cause a declining impact on such students' academic performance, psychological well-being and mental health. In relation to that, Chung and Lam (2020) mentioned that fewer studies have focused on adolescent students previously identified as dyslexic, particularly those who are learning a second language. Therefore, it has become crucial to incorporate new innovative ways to the dyslexic students' actual situation of reading as made by this study, and the choice is digital-based reading. In this vein, this study attempts to answer the following questions:

1. What is the motivation of EFL college students with dyslexia towards digital-based reading?
2. What are the habits and attitudes of EFL college students with dyslexia towards digital-based reading?

Literature Review

Dyslexia, as Rios et al. (2018) mention, is a neurodevelopmental disorder characterized by a persistent reading deficit regardless of the normal intellectual capacity, suitable learning environments, and plenty of educational opportunities. According to Shaywitz and Shaywitz (2020) dyslexia is the lack of reading fluency, weak spelling, and trouble learning a foreign language in adolescence learners. Moreover, Shaywitz and Shaywitz (2020) highlight that such students' reading often turned out to be normal considering their age and depending on their levels of intelligence. A key factor concerning reading problems and difficulties, according to Wang (2020), is poor temporal processing. He states that processing speed is defined as the ability to recognize, integrate, discriminate, and develop a judgment about information, as well as respond to visual and linguistic data, is regarded as the most important mechanism underpinning temporal processing and other talents that demand fast responses. Wang (2020) also maintains that temporal processing is the processing of rapidly presenting stimuli to the best level of detecting the target stimuli or identifying the differences in multiple stimuli based on their presenting sequence. In a general sense, Doncheva (2020) recommends the use of communication technologies with disabled learners as it shows positive results with them. As far as students' level of language is concerned, Kořak-Babuder et al. (2020) found that reading-aloud helps make young English learners' understand the written text more effectively. Lallier et al. (2018), on the other hand, have emphasized that the language background of dyslexic participants must be considered when assessing their insufficiencies both in research and clinical settings. Efficient reading is crucial for day-to-day life, particularly when learning an international language such as English.

In a research gap identified by Chung and Lam (2020), their study found that fewer studies have focused on the adolescent students previously identified as dyslexic, particularly those who are learning a second language. In this context, Odegard et al. (2020) state that addressing the requirements of students with dyslexia has been a well-known area of advocacy, given the implications of dyslexia for the overall wellbeing of students. Learning and teaching English, as Shilova et al. (2019) highlight, is a task that involves immense effort. In this regard, motivation plays a key role; particularly concerning ESL learning/teaching. Tammase et al. (2019) recommend the use of the Calistung method with dyslexic learners in ESL contexts. The use of electronic media specifically e-readers can provide significant support to dyslexic students as mentioned by Schneps et al. (2013). Zeinab et al. (2011) highlight that motivation for reading is identified as one link between enthusiasm in reading and reading achievement. Compared to general students, motivated readers spend more time reading, and as a result reach higher levels of achievement, performing better on standardized reading tests. Zeinab et al. (2011) stressed on the fact that students with dyslexia find it challenging to motivate themselves to read for pleasure and lifelong learning.

Students’ motivation and attitudes towards digital-based reading is a key-factor in this investigation. The findings gained by Yaghi et al. (2019) prove that students generally are motivated to use digital-based reading as they use it for many purposes such as exams, pleasure or discovering new things. Long and Szabo (2016) have found that digital text can be a propelling variable in expanding their engagement which prompts higher accomplishment, though they found no difference, in motivation and attitudes, between written and e-reading as both groups of students show approximately the same results. Picton (2014) recommends using digital-based reading of all types as it had a direct effect on accelerating students’ motivation towards reading. Marandi and Mokhtarnia (2008) mentioned significant differences between online and printed texts among EFL students. In relation to that, Lau and Chan (2003) discovered that all readers whether good or poor used different techniques so they have reading motivations, though with poor readers’ the motivations are very low. The main pedagogical implications that were gained from different motivation studies prove that students with reading problems can be helped by using innovation and programs with training to enhance their motivation. This can be applied with dyslexic students to enhance their motivation and attitudes towards digital-based reading as with the present study.

Method

Participants

The number of participants that took part in this study is 100. They were chosen after administering the Adult Reading History Questionnaire (ARHQ) which was adapted from Lefly and Pennington (2000). The questionnaire is a self-report tool that is used to determine the dyslexia cases among adults. The face validity of the questionnaire was determined by exposing the questionnaire to certain specialists in the fields of special education and language teaching. They agree on its suitability and applicability to be used in the context of the study. Reliability of the questionnaire has also been ensured by the test-retest method. The test-retest reliability coefficient was 0.82 which is considered acceptable.

The questionnaire was administered to 310 first year college students in the English department. 90% of the participants are 19 years old; the rest of the participants are between 18-20. The first language of 95% of them is Arabic; others are speaking Kurdish and Turkish. Only 100 of the participants have dyslexia symptoms as they pass the cutoff of the significant risk in reading that is dependent as a main study sample. All participants were informed about the details of the study. The details of the results of the questionnaire and the participants are in Table 1.

TABLE 1
The Choice of the Sample

<i>Types of risk</i>	<i>Cutoffs</i>	<i>The participants</i>
Minimal Risk	<37	120
Moderate Risk	37-42	90
Significant Risk	>42	100

Instruments

Two instruments were used in this study after ensuring the face validity and test retest reliability of them. The results of the reliability coefficient were 79 and 80. The questionnaire that was used to measure students’ motivation is adapted originally from Wigfield and Guthrie (1997) and it is called Motivations for Reading Questionnaire (MRQ). Then, it was modified and validated by Yaghi et al. (2019) to be used in online reading. It has five scales which range from highly agree to highly disagree.

The other instrument is the Adult Survey of Reading Attitude (ASRA) that was adapted from the work of Smith (1991). The mentioned questionnaire is used to measure quantitatively students’ attitudes after some modifications to suit the online reading context. It consists of three dimensions; reading activity and enjoyment, anxiety and difficulty, and modality. Four questions were used to measure students’ habits towards digital-based reading including; types of reading material, the time they spend on it, the language used, and the types of activities used. The instruments and the plan of the study were shared with a jury of experts to ensure the face validity of the study. They all agreed that with some modifications that the face validity had been established.

Results

The results of the two questions of the study are as follows:

1. What is the motivation of EFL students with dyslexia towards digital-based reading?

The findings obtained show that the higher dimension is intrinsic motivation while the lower one is peer rejection as clarified in Table 2.

TABLE 2
The Results of the MRQ

<i>Dimensions</i>	<i>Mean</i>	<i>SD</i>
Intrinsic Motivation	3.066	1.422
Efficacy	3.046	1.409
Value	3.036	1.345
Devalue	3.027	1.359
Peers Acceptance	2.924	1.39
Avoidance	2.851	1.342
Perceived Difficulty	2.831	1.305
Peer Rejection	2.752	1.367

The results in Table 2 demonstrate that the highest dimension, among all other dimensions, was intrinsic motivation, through its results mean average, and the lowest was peer rejection. In relation to that, the statement that gained the highest mean score is “I enjoy online reading”; while the statement that gained the lowest mean score is “Other students don’t value my opinion about online information”.

2. What are the habits and attitudes of EFL students with dyslexia towards digital-based reading?

In order to know the habits of the students, they were asked four questions; their results are in the Tables 3, 4, 5 and 6 and as clarified in Figure 1.

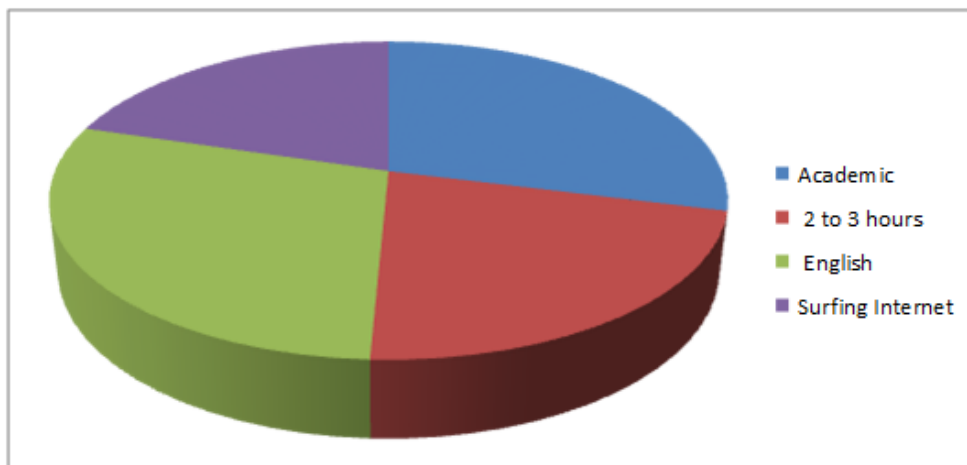


Figure 1. The habits of the students.

Figure 1 above shows the main habits of dyslexic students according to the results of this study.

TABLE 3

Types of the Digital-based Reading Material

<i>The material</i>	<i>Number of students</i>	<i>Percentage (%)</i>
Academic(textbooks, articles, and reports)	60	60%
Website	20	20%
Magazine and newspaper	8	8%
Literary material (novel, short story, poetry)	12	12%

TABLE 4

The Time They Spend in Digital-based Reading

<i>Time spend</i>	<i>Number of students</i>	<i>Percentage (%)</i>
1 to 2 hours	35	35%
2 to 3 hours	45	45%
3 to 4 hours	15	15%
More than 4 hours	5	5%

TABLE 5

The Language Used in Digital-based Reading

<i>The language</i>	<i>Number of students</i>	<i>Percentage (%)</i>
English	60	60%
Arabic	35	35%
Kurdish	4	4%
Turkish	1	1%

TABLE 6

The Activities Used by the Students

<i>Activities</i>	<i>Number of students</i>	<i>Percentage (%)</i>
Surfing Internet	42	42%
Reading digitally	40	40%
Entertainment (music, movies, games)	16	16%
Others	2	2%

Concerning the attitudes of students towards digital-based reading, the results of ASRA are collected and calculated as shown in Table 7.

TABLE 7
The Results of ASRA

<i>Variable</i>	<i>Mean</i>	<i>SD</i>
Reading activity and enjoyment	3.01	1.429
Anxiety and difficulty	3.066	1.422
Modality	3.063	1.374
Attitude overall	3.046	1.408

The results of the ASRA clarify that the highest dimension, among other dimensions, is reading activity and enjoyment and the lowest is modality. Based on that, the statement that gains the highest mean score is “Digital-based reading is one of my favorite activities”, while the statement that gains the lowest mean score is “There are better ways to learn new things than by reading a book digitally”.

Discussion

Depending on the results gained, this study identifies the motivation, habits and attitudes of students with dyslexia towards digital-based reading. Intrinsic motivation gains the highest degree of acceptance among students with dyslexia. The sample exhibits a high intrinsic motivation to read digitally. These results agree with Picton (2014) who recommends using digital-based reading in order to increase students’ motivation towards reading. In fact, to be fond of digital-based reading, you must have your reasons as it represents a kind of challenge for readers. It requires extra effort and suitable instruments in order to be facilitated. The situation of students with dyslexia in this study clarifies that digital-based reading may represent an escape from the real world that uncovers the difficulty they suffer in reading to a quieter world that provides more privacy as mentioned by Mathewson (1994) who confirms that students need a safe and positive learning environment as it effects directly on reading behaviors and attitudes. On the other hand, the students become accustomed to using digital tools such as mobiles and tablets that participate to a large extent in motivating students towards digital-based reading. Peer rejection, on the other hand, gained the least acceptance from dyslexic students which may represent evidence that there is a clear contrast between the opinions of dyslexic students and that of their colleagues.

In order to check the habits of dyslexic students towards digital-based reading, they were asked four questions in relation to the types of reading material, the time they spend on it, the language used, and the types of the activities used. Results indicated that academic reading materials are the most common type of reading material used by dyslexic students with an average of 60%. This demonstrates that dyslexic students receive a kind of assistance from digital-based reading in their academic study. Results also show that 45% of dyslexic students spend two to three hours daily in reading digitally which can clarify the positive effect of digital-based reading on them. The most used language by dyslexic students is the English language which is a natural result because all the participants are English language students and they state previously that they use digital-based reading for academic purposes. The last question is about the types of activities used and the results clarify that 40% of dyslexic students spend their time in reading digitally, which is a second activity after surfing the internet which gains 42% and it is also a good result.

As far as the results of ASRA (the attitude questionnaire) is concerned, it is clear that the first dimension which is reading activity and enjoyment gains the highest positive results, among other constituents of the questionnaire. They look at reading digitally as enjoyment and they consider it as one of their favorite activities. The development of interactive e-readers and interactive reading games change the situation of many dyslexic readers from boredom to enjoyment. This result may be due to the intrinsic motivation that this kind of reading provides to dyslexic students which is a pivotal factor in encouraging them to read. These results come in accordance with Schneps et al. (2013) who agree that using electronic readers can support students with dyslexia. Admittedly, dyslexic students are not like other students. They need a special kind of treatment in addition to innovative ways of learning to deal with all the language

skills not only with reading. This state seems clear as the target students consider reading a book digitally as one of the main sources of learning. Although some challenges are noticed, reading digitally facilitates the process of reading for dyslexic students adding more joy to it.

Conclusions

The main aim of this study is to examine the motivation, habits, and attitudes of students with dyslexia towards digital-based reading by using modified forms of Motivations for Reading Questionnaire (MRQ) by Wigfield and Guthrie (1997), the Adult Survey of Reading Attitude (ASRA) by Smith (1991), in addition to four questions to check students' habits. Based on the descriptive statistics of the study, it is evident that dyslexic students have high intrinsic motivation towards digital-based reading. These results are consistent with other results of habits and attitudes in this study as they show positive acceptance to digital-based reading from dyslexic students. These findings indicate that such cases of disabled students need more innovative ways in learning generally and in reading specifically since the traditional methods have failed to show positive results as many studies show. It is worth mentioning that teachers should pay more attention to develop the current situation of their dyslexic students by following the instructions and recommendations of specialized associations that deal with such cases such as The British Dyslexia Association (2014) which has offered recommendations on how to introduce "dyslexia friendly" text that can benefit dyslexic students in reading both digital and printed material.

To see more reliable and valid results, it is recommended to use a larger sample size of dyslexic students with varied backgrounds other than English department students. In addition, future studies should be more specific towards using technology in reading, for example, checking the effects of specific digital application for reading, such as Bottom Line, Dragon Naturally Speaking, and Live Scribe smart pen on dyslexic students to see the degree of acceptance they have towards it in order to determine the kind of reading applications that can benefit them.

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(Received October 29, 2021; Revised February 24, 2022; Accepted March 18, 2022)