Ministry of Higher Education and Scientific Research

University of Mohammed Seddik Ben Yahia, Jijel

Faculty of Letters and Languages

Department of English

An Analysis of the Digital Divide among EFL University Students and its Impact on their Academic Achievement.

Dissertation Submitted in Partial Fulfilment of the Requirements for the Master Degree in Didactics of English

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2021-2022

Declaration

I hereby declare that the dissertation entitled “An Analysis of the Digital Divide among EFL University Students and its Impact on their Academic Achievement” is our own work and all the sources we have used have been acknowledged by means of references. We also certify that we have not copied or plagiarized the work of other students or researchers partially or fully. In case any material is not documented, we shall be responsible for the consequences.

Signature Date

Dedication

In the Name of God, the Most Merciful, the Most Compassionate

All the Praise is due to God alone, the Sustainer of the entire world.

I have the great honour to dedicate this humble piece of work to the most precious people to my heart. First, to my backbone, my father ABD ELKADER, who was pushing me to keep going on towards my dreams, the person who helped me overcome the detours and the challenges I have been experiencing. So, thank you Dad for your tremendous efforts and for working tirelessly to help me reach my goals. I wish that you are pleased with how far I have reached. Second, I would like to dedicate this work to my mother WAFA, the angel who encouraged me when I felt hopeless and depressed, who held me close and pushed me not to surrender when I was teetering on the edge of giving up. So, thank you mom for lightening up my path and feeding my spirit with love. Third, I would like to thank my intimate and whole-hearted friends; Hadil, Fatima, Asma, Yousra and Khadidja. Lastly, I would like to express my gratitude to my beloved brother Rabia and my lovely sisters: Romaissa, Safa El Imane, and Tasnim, who have been with me through thick and thin.

Thank you all.

Chaima

Dedication

My undeniable and unforgettable thanks to the Most Graceful and Most Compassionate the Almighty Allah for providing me with a lot of blessings and for giving me the grace, courage and strength to fulfil this work.

First of all, I would like to dedicate this work to my dear mother ZIOUNA, who inspired me and strengthened my will, for her care and continuous prayers. Second, I would like to thank my sympathetic father MOHAMMED for his love and financial support. Third, I would like to express my gratitude to my beloved and only brother Youssef and my adorable sisters: Selma, Nadia, khawla, Merriam, and Sara who got my back in hard moments. I would also like to express my thanks to my relatives; Wahid, Aziz and my uncle Ahcen. Besides, I would express my awful thanks to my grandmothers: Nawara and Zayneb (May Allah protect them) for their prayers and love. Finally, I would like to thank my intimate and whole-hearted friends; Sonia, Nabila, lamia, Manal, Wahida, Sana, Abir and the sweetest girl I have ever met ‘Zayneb’ without forgetting my amazing partner and lovely soul mate Chaima who bore and provided the full support and back up...

Khadidja

Acknowledgements

We would like first to thank Allah for giving us

strength to complete this humble work.

First and foremost, we want to voice out a big “thank you” and express our appreciation as well as our gratitude to our supervisor Mrs. Radia KHERBOUCHE for her guidance, unconditional help and support. Without her good sense of supervision, this work could not see the light. Thank you for your endless pieces of advice and your constructive feedback which greatly helped us to proceed in our work.

Second, we would like to acknowledge our limitless thank, in advance, to all members of the broad examiners who have kindly accepted to examine this humble piece of work: Mrs. Sara LEKKAT and Mrs. Safia NEGHIZ for devoting their precious time to examine and evaluate this dissertation.

Third, we are extremely thankful to all EFL university teachers and students, at the department of English at the University of Mohammed Seddik Ben Yahia, Jijel, who were enthusiastic to participate in this research. Without their cooperation and willingness to help; data collection could not have been completed.

Finally, we would like to express our deepest appreciation to our families for their unconditional love, help and prayers. We can never express the gratitude we have for each single person of them. We truly appreciate their patience and support which matter immensely.

Abstract

Nowadays, there is no need to go any further than one's house to see and use different forms of ICT (Cell phones, computers, internet…). ICTs invaded all sectors of life including education. Through ICT use in education, learning can occur anytime and anywhere, especially in hard times when Covid-19 led to school closures worldwide. Yet, integrating ICTs in education is not without problems; students encounter many barriers and challenges as far as access and use of those technologies are concerned creating what is called "Digital Divide". Hence, this study aims at analysing the digital divide among EFL students at Mohammed Seddik Ben Yahia University, Jijel and departed from this hypothesis: "If there is a digital divide among EFL students at the University of Mohammed Seddik Ben Yahia, Jijel, their academic achievement will be affected to some extent". To reach the underlined aim, the researchers used two instruments: a students' questionnaire and an interview with teachers. First, the questionnaire was administered to 150 students of different study levels. Second, the interview was conducted with eight EFL teachers of different subjects. The final results revealed that there is a digital gap "divide" among university students mainly at the level of "access" and "use" of ICTs what consequently affected their academic achievement to some extent. On the light of the findings, some solutions were suggested to heal the existing disparities.

Key Words: ICTs, Digital Divide, Academic Achievement

List of Acronyms and Symbols

EFL: English as a Foreign Language

EOC: The End of Course Test

ICTs: Information Communication Technologies

NTIA: National Telecommunications and Information Administration

N: Number

OECD: Organization for Economic Co-operation and Development

P: Page

Q: Question

SES: Socio-Economic Status

%: Percentage

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General Introduction

1. Background of the Study

The use of modern technologies has become an important feature of the educational sector in developed and developing countries alike, especially during the COVID-19 pandemic and due to the new demands of learning that paved the way for multiple approaches such as “Distance learning”, “Blended Learning” and “Hybrid Learning”. The distribution of access to information and communication technologies, however, varies among people in general and students in particular, creating what is known as the “digital divide”. This gap is one of the influencing factors on learning; it affects students’ performance and their achievement in the learning process.

The issue of digital divide and its impact on students’ achievement has increasingly become a focus of attention for many researchers all over the world. For instance, Hutchings (2019) pointed out, in her work entitled “An Analysis of The Digital Divide among Elementary Students and Its Effect on Their Education”, that “… access to the Internet, or the lack thereof, affected student achievement”(p. 30). Additionally, Wang (2020), in her work entitled “The Effects of the Digital Divide on Rural Texas Students”, examined the extent to which the digital divide affected students’ performance and opportunity in rural and urban regions in Texas high schools. She found that students who live in areas with high rates of broadband access tend to perform better on the EOC (End of Course Test) than students who do not (p. 75).

In the same context, Talley (2012) in his work “Testing the Digital Divide” studied the relation between students’ use of the distinct technologies and their achievement and examined how students’ achievement is affected by the digital divide as measured by state assessments in reading as well as in mathematics. The study revealed that “there was a

statistically significant relationship between students' level of access to school technology and their academic achievement scores on the MSA [Maryland School Assessment] for eighth-grade reading and mathematics" (p. 106). According to that study, students who have more access to Internet tend to have higher achievement compared to those with less access. The results also indicated that "low-achieving reading schools tend to have less access compared to high-achieving reading schools" (p. 107). Similarly, in their work "Scaling the Digital Divide", Vigdor and Ladd (2010) stated that achievement is affected by students' access to home computer since schoolwork, written assignments can be completed efficiently using computer technology (p. 10).

This study comes as an attempt to turn the light on the issue of the digital divide and students' academic achievement. Thus it could be significant for EFL teachers, learners, and future researchers. First, the research might be significant for EFL teachers because it highlighted the issue of digital divide among university students who live either in urban or rural areas. That is, teachers should deal with such an issue seriously and ensure that all their students have opportunities to access and use ICT tools before assigning them to do homework, projects or presentations and require them to undertake online or distant exams. Second, this study is significant for EFL learners since it shed light on the importance of having enough digital skills to benefit from the available technologies and achieve better results. Third, as long as there have not been any researches conducted to investigate the aforementioned variables at the Department of English, Mohammed Seddik Ben Yahia University, Jijel, the study in hand might be significant for future researchers to rely on as a source and as a starting point towards an in-depth investigation of the so-called digital divide.

2. Statement of the Problem

Throughout the researchers experience as university students at Mohammed Seddik Ben Yahia University, Jijel, and based on some students' and teachers' perspectives about the integration of information communication technologies (ICTs) in education, it seems that not all students can access and use ICTs despite their vital role in learning and teaching. Some students do have access to ICTs and use them regularly and effectively while others have a limited or even no access what creates digital disparities. Hence, this gap among university students "Digital Divide" becomes really problematic for the majority of EFL university students since it may have crucial impact on their academic achievement especially with the evolution of E-learning and the accelerating trends and approaches to learning and teaching.

3. The Aim of the Study

Being such a fertile field of research, many scholars show their interest in studying the phenomenon of digital divide from different dimensions and its impact on different sectors (economy, health, society, etc). Other scholars, however, were mainly interested in analyzing the issue of digital divide in the educational sector by investigating the relation between students' use of the distinct technologies and their achievement and examining the effect of the digital divide on students' performance in both rural and urban regions. The current study, hence, aims at analysing the impact of digital divide on EFL students' academic achievement at the University of Mohammed Seddik Ben Yahia- Jijel.

4. Research Questions

To achieve the above-mentioned aim, the following research questions were highlighted:

1. Does the digital divide really exist and how is it related to academic achievement?

2. What are teachers' and students' perceptions about the impact of the digital divide on academic achievement?

3. To what extent academic achievement is affected by the digital divide?

4. How can the issue of digital divide be reduced?

5. Research Hypothesis

Academic achievement is the main concern of every student at any level. Therefore, in this study, which aims at investigating whether the digital divide has any impact on students' academic achievement, it is then hypothesized that:

- The existence of a digital divide among EFL students at the University of Mohammed Seddik Ben Yahia, Jijel will affect their academic achievement to some extent.

6. Research Methodology

Based on the nature of the research topic and to achieve its aim, two research instruments were adopted. First, a questionnaire was administrated to one hundred and fifty (150) students at the department of English, Mohammed Seddik Ben Yahia University, Jijel. It was made up of 25 questions; multiple choice questions, likert scale questions and open - ended questions. Second, an interview was conducted with eight (8) teachers at the same department. The methodology used in this research work is both quantitative and qualitative.

7. Organization of the Dissertation

The present study is divided into two chapters. The first chapter, on the one hand, is the theoretical background of the current research work. It reviews the literature and it consists of two sections; they both discuss the main concepts related to the digital divide and

academic achievement. The first section is entitled “Digital Divide”, and it tackles the history of the digital divide and its definition, its levels and dimensions, the factors influencing the digital divide, digital divide in education and the solutions researchers and policy makers suggest to bridge this phenomenon in order to reach what is called “digital equity”. The second section is entitled “The Impact of Digital Divide on Academic Achievement”. The main points addressed by this section are: the definition of academic achievement, its measures, factors influencing students’ academic achievement, how to improve university students’ academic achievement and finally the effects of digital divide on academic achievement. The second chapter, on the other hand, represents the fieldwork; it displays the data gathered by means of a questionnaire and an interview and is mainly devoted to the analysis and interpretation of the obtained results. In addition, it discusses the main findings and provides answers to the research questions that either confirm or reject the research hypothesis.

Chapter One: Literature Review

Introduction

Digital divide is one of the issues that appeared with the emergence and the growing dependence on the distinct technologies in our daily lives. With the widespread of Information Communication Technologies (ICTs), digital divide becomes more prevalent than ever. The first section, on the one hand, is set up to discuss the issue of the digital divide. It tackles many aspects related to this issue including its history, definition and levels. In addition, the section seeks to explain the determinant factors that influence the digital divide. Moreover, it is devoted to clarify the issue of digital divide in the educational sector (at the university level). Furthermore, it discusses some effective solutions as to bridge the digital gap, and reach the so-called “digital equity”.

The second section, on the other hand, is evoked to explore different aspects related to academic achievement. First, it seeks to clarify the concept of academic achievement and to shed some light on its measurements and the factors that affect it. Additionally, it is devoted to discuss some strategies used to improve students’ academic achievement. Moreover, this section aims at eliciting the relationship between the digital divide and students’ academic achievement and how the digital divide can affect EFL students' academic achievement.

Section One: Digital Divide

Section One: Digital Divide

1.1.1. The History of Digital Divide

The digital divide has been a focus of attention for years. Gonçalves (2016, p. 3) pointed out that the publication of the "Falling Through the Net" series reports turned on the light on the issue of digital divide. He further stated that "it is frequently associated to the former Assistant Secretary for Communication and Information of the US Department of Commerce's, Larry Junior" (p. 3). Besides, according to Dolan (2017), the term digital divide first appeared in a report by the U.S. Department of Commerce in 1996. The term was used to refer to the gap between those who have computers "haves" and those who do not "have nots" (as cited in Hutchings, 2019, p. 4).

Additionally, Hutchings (2019) claimed that when the term digital divide first appeared, it was used to focus mainly on the access to the different technologies, but lately it encompasses several distinct aspects (p. 4). For Pierce (2018, p. 1), "…the term became solidified by White House Aide "Albert Hammond" and by "Larry Irving", Assistant Secretary for communications and information". Gunkel (2003) argued that it is true that the concept of digital divide began in the early 1970s but journalists were credited with using this term in the mid-1990s (as cited in Pierce, 2018, p. 1).

1.1.2. Defining the Digital Divide

The development and extensive use of Information Communication Technologies (ICTs) led to the emergence of several challenging problems in different sectors. The digital divide is one of these problems. According to The Greenwood Dictionary of Education (2003), digital divide is "the gap created by inequities in access to technology and the information it provides" (p. 106). In the same context, Cullen (2001) described the digital divide as "… the gap that exists in most countries between those with ready access

to the tools of information and communication technologies and the knowledge that they provide access to and those without access or skills" (pp. 311-320). That is, it is the disparity between people who have the ability to access and use the various ICTs and those who have not. Additionally, Levine and Taylor (2018) stated that "the digital divide is the term commonly used to describe the divide between those who are able to access the Internet via a home broadband connection and those who don't" (p. 9). In sum, the digital divide "commonly refers to the gap between those who do and those who do not have access to new forms of information technology" (Van Dijk, 2009, p. 1). That is, there is a distinction between individuals in term of accessing modern technologies (ICTs).

According to Websters' Dictionary, the term digital divide is also used to refer to "the economic, educational, and social inequalities between those who have computers and online access and those who do not". Additionally, Wang (2020, P. 5) defined the term digital divide as "the gap in access and use of technology resources between groups. That is to say, the distribution of ICTs is unequal; when some can use ICTs, other individuals in other areas are left behind. Additionally, the Organisation for Economic Co-Operation and Development (OECD) (2001) defined the digital divide as "the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the internet for a wide variety of activities" (p. 5). That is, access to ICTs and internet usage for distinct activities varies among individuals creating the so-called digital gap or digital divide.

Moreover, Gaillard (2001) stated that "digital divide is the line that separates those who have computer access, along with corresponding skills and use the Internet, from those who neither have access to computer technology nor the Internet" (as cited in Tarman, 2003, p. 4). That is, individuals equipped with computers, digital skills and internet access

are separate from those who are not. Besides, Campbell (2001) stated that digital divide refers to “Situations in which there is a marked gap in access to or use of ICT devices” (p. 1).

Furthermore, Norris (2001) argued that digital divide is “any and every disparity within the online community” (p. 4). In the same context, Wilson (2006) defined this phenomenon as “inequality in access, distribution, and use of information and communication technologies between two or more populations” (p. 300). The distribution of ICTs is unequal and hence, not all individuals have equal opportunities to use the available technologies. According to Cooper and Weaver (2003), digital divide is “the gap ... between those who have the expertise and training to utilize technology and those who do not” (p. 3). i.e., the disparity among individuals is not only limited to the unequal access and use of ICTs but it extends to digital literacy, which not all users have. Calderaro (2010), however, added that the digital divide is the “gap between those who actively use and contribute to the Internet, and those who are only influenced by it” (p. 39).

All in all, definitions of the digital divide vary from writer to writer and from researcher to yet another, but it is widely agreed that the digital divide is the gap between those who have access to ICTs and use them and those who do not, and it is this working definition that the researchers adopt in this research paper.

1.1.3. Levels and Dimensions of Digital Divide

Back and forth in the literature, a few studies tackled the issue of digital divide, yet very few were devoted to study its levels and dimensions (See table 1). For instance, Adhikari (2018) categorized the digital divide into three main groups: digital access divide, digital capability divide and digital outcome divide (p. 6). Similarly, Dewan and Frederik (2005) have suggested two variants of the digital divide. The first variant indicates the access

divide meanwhile the second indicates the capacity divide, which is represented by the inequality in the ability to use technology by those who already have access (as cited in Al Kaabi and Qawasm, 2020, p. 566). Hargittai (as cited in Adhikari, 2018, p. 6) has categorised the digital divide phenomenon into two different levels; the first level is "access to ICTs" and the second level is the "ability to use ICTs meaningfully".

Table 1

Classification of Digital Divide Literature

Type of digital divides	Factors	Reference in literature
Digital Access Divide	financial condition, income, educational level, occupation geographical location	(Cai, 2008; Cullen, 2011; De Haan, 2003; Dijk, 2012 ; James, 2001, 2007a, 2007b, 2008, 2009 ; Morakanyane, 2010 ; Parker, 2001 ; Van Dijk, 2005 ; Zhong, 2011)
Digital Capability Divide	Digital skill, educational level, control over available technology	(Cole, 2001; Deursen& Dijk, 2009; Dijk, 2006, 2012; Gaziano,2010 ; Ghobadi & Ghobadi,2015 ; Harigittai,2002b ;Park, 2002 ;Van Dijk& Hacker, 2003 ; Wei , Teo, Chan &Tan, 2011;Yoori & Se-Hoon, 2009)
Digital Outcome Divide	attitude and motivation, behavior and willingness, nature of technology usage , and the ability meaning making	(Brandzag, Heim & karahasanović,2001;Brosnan, 1998; Gunkel, 2003; Lenhart et al., 2003 ; Partridge, 2003; Wei et al.,2011;Zhong, 2011)

Note: Adopted from Adhikari et al., 2016, p. 324-325.

1.1.3.1. Digital Access Divide

The emergence of ICTs has transformed the way how people live by providing several facilities and opportunities. People now are living the digital age which is marked by the use of multiple ICT tools (smart phones, computers, internet, etc), but not all of them have

access to these ICTs. According to Adhikari (2018), the use of the different services offered by digital technologies differs among individuals which limited the provided opportunities including the ability to access, operate and use the digital tools (pp. 4-5). That is, not all people can benefit from the services provided by the digital technologies due to certain obstacles.

The digital access divide, also referred to as the first level digital divide, is the disparity in terms of access to the various devices or even the internet. While some people have access to digital devices, software or hardware, others have limited or even no access to them. In sum, researchers such as Van Dijk (2005, 2017), Zhong (2011), and Cullen (2001) all agreed that the digital access divide is the divide between those who have access to ICTs and those who do not (as cited in Adhikari, 2018, p. 38).

1.1.3.2. Digital Capability Divide

According to the Cambridge Dictionary; capability is ″the ability to do something″. Having access to the various ICTs facilitates the life of many people by providing them with several opportunities (Jobs, numerous educational resources, etc). However, inequalities in having digital skills prevent many of them from using the available ICTs to the fullest and benefiting from the opportunities they provide. This lack of capacities and skills is referred to as the digital capability divide. Digital capability refers to the necessity of having digital literacy skills in order to use and benefit from the technologies at hand. Thus, the second level of the digital divide or "digital capability divide" means that not everyone who has access to the various technologies can use them appropriately. Some individuals may have access to ICTs but they do not have the needed skills to benefit from the opportunities they provide. Therefore, ICT literacy, "the ability of individuals to use ICT appropriately to access, manage, integrate, and evaluate information, develop new

understanding, and communicate with others …" (MCEETYA, 2007, p. 3), is required to use the available technologies. Therefore, Van Deursen and Van Dijk (2009) distinguished between four types of digital skills:

- **Operational Skills:** These skills are required to operate the digital media.

- **Formal Skills:** Handling the special structures of digital media (menus, hyperlinks…) requires such skills.

- **Information Skills:** These skills are needed and required to be used while searching, selecting or evaluation information in digital media.

- **Strategic Skills:** To benefit from the information in digital media, and to use it effectively for certain professional or even personal purposes and goals such skills are used.

1.1.3.3. Digital Outcome Divide

According to Adhikari (2018, p. 7), "Digital outcome divide" is another level of the existing digital divides which is also referred to as "the third level of digital divide". The term is used to refer to the difference in the results realized by the users of ICTs. It is defined as the inequality of outcomes achieved by ICT and digital media users based on factors like individual's motivation and attitudes towards technology, nature of technology usage, and ability of meaning making (as cited in Adhikari et al., 2016, p. 325). According to Ragnedda and Kreitem (2018, p. 13), the inequalities in the tangible advantages obtained by users while accessing and using the internet is referred to as the third level of digital divide.

According to Adhikari et al., (2016, pp. 327-328), the outcome divide is resulted from the two previous divides. That is to say, users' results are affected by the access divide and

capability divide. Individuals' outcomes are influenced by the extent to which they have access to the various ICTs. In addition, their results are controlled by the skills they master to use and benefit from the distinct ICTs. Individuals with higher access to the different technologies and full mastery of the needed skills to operate ICTs will consequently have better outcomes than those with limited access or lack of digital skills.

1.1.4. Factors Contributing to the Digital Divide

There are several factors that contribute to the digital divide. For instance, Yu (2006, pp. 240-241) provided an overview of several studies on the digital divide and information inequality and recognized several social aspects (age, gender, race, etc) which generally influence the limited usage of ICTs and thus, contribute to the digital divide (as cited in Gudmundsdottir, 2010, pp. 22-23). In addition, according to Cullen (2002, p. 3), there are many groups of people who cannot benefit from the various ICTs: Elderly people, women, people with low literacy skills, people with low income and those who live in rural or isolated places.

1.1.4.1. Age

Yu (2006) stated that "increased age associated with decreased levels of access limited modes of use and patterns" (pp. 240-241). That is to say, age is one of the determinant factors that influence the use of ICTs since young people tend to use these tools more than elderly people. While younger generations nowadays are obsessed with modern technologies as they have a vital role in their everyday life, elderly people are not. In the same context, Srinuan and Bohlin (2011, p. 12) claimed that "elderly people show greater reluctance to adopt new technologies than teenagers". Similarly, Wang (2020, pp. 15-16) argued that "the younger generations who have never known a life without technology are more likely to frequently use and own more technology...".

1.1.4.2. Geography

Adhikari (2018, p. 6) stated that the geographical location is one of the influencing factors that contribute to the division between individuals in terms of access to ICTs. Additionally, Wang (2020, p. 17) found that "rural areas represent the part of our nation that is severely disconnected to our growing digital economy. Rural regions face unique challenges that contribute to and worsen the effects of the digital divide" since urban inhabitants have consistently higher levels of broadband adoption than those who live in rural areas, i.e., rural residents have limited or even no access to broadband due to several reasons such as the lack of infrastructures and the inability to access to high- speed internet.

1.1.4.3. Income

According to Srinuan and Bohlin (2011, p. 10), "An individual or country in a more privileged socio-economic situation is expected to have a smaller digital gap". That is, the socio-economic status is another determinant factor contributing to the digital divide; people with low incomes can neither afford nor have access to the various technologies while those with higher incomes possess and make use of all technologies. Additionally, Adhikari (2018, p. 39) claimed that "individuals and societies with lower financial status ...may have poor or no access to ICTs putting them into the wrong side of the digital divide". Furthermore, Wang (2020, pp. 14-15), in her study entitled "Scaling the Digital Divide", found that lower-income Americans have lower levels of technology adoption and therefore, they tend to possess less technological skills which hinder them from fully participating in the country's economic, political and social spheres. In the same vein of thought, Becker, Washington, Naff, Woodard and Rhodes (2020, p. 7) affirmed: "Students

from more affluent homes tend to have more consistent internet access, and at the same time tend to demonstrate higher digital fluency than their less affluent peers".

1.1.4.4. Educational Level

Srinuan and Bohlin (2011, p. 15) found that many factors contribute to the digital gap among individuals including: skill and experience, education, etc; people with a high educational level tend to use the distinct ICTs better than those with lower educational levels since multiple skills are required to benefit from the available ICTs. Unlike individuals with higher educational levels, uneducated individuals do not master these skills so they cannot use the ICTs at hand appropriately.

1.1.4.5. Gender

According to Van Dijk (2005, pp. 111-113), many differences in internet usage are associated with gender. That is to say, the use of ICTs is influenced by this factor. Additionally, Srinuan et al., (2011, p. 14) argued that men use ICT tools more than women and this is what Cooper and Weaver (2003) confirmed when they said that "Compared with men, women are underrepresented in their use and ownership of computers" (p.5). In the same context, Ingram (2021) found that "women, in particular, have been short changed of the benefits of connectivity, with the gender divide in internet use widening" (p. 4). Furthermore, Jung (2006, p. 34), while examining students' use of ICTs, found that "male students were more likely to play computer games, and own electronic music devices and wireless adapters than female students".

1.1.4.6. Race

As far as race is concerned, Cooper and Weaver (2003) argued that "Although computer purchase and use rose for both Whites and Blacks over the last several years, the gap between racial groups has widened…computer ownership was higher among White students than it was among Black students" (p. 4). Additionally, Vigdor and Ladd (2010, p. 7) found that "almost 90% of White students have a computer at home, compared to 75% of Black students". That is, there is a gap between racial groups; White people tend to have access to the different technologies more than Black people. From a different perspective, Gorski (2005, p. 11) claimed that "White students are increasingly likely to build confidence and mastery over computer and internet technologies, know, as "net savvy" ... Students of color are less likely to be exposed to these technologies".

1.1.5. Digital Divide in Education

Lately, the educational sector witnessed an extensive use of different ICTs either by learners or teachers. However, COVID-19 pandemic and the emergence of E-learning revealed the existence of distinct divides as well as the absence of equity in this sector. Consequently, there is a gap between underprivileged students and their counterparts in the use of the various ICTs, i.e., while some of them have access to ICTs, others have limited or even no access to them. Even worse, they may lack effective digital skills, or lack ease and speed internet (no stable internet connection), too. This inadequate access can hinder many students from doing certain tasks such as preparing assignments, projects or homework that are crucial to realize better achievement. Hutching (2019) pointed out that there exist several differences in access to the internet among students with different demographics (p. 7). These unequal opportunities are determined by multiple factors including the income gap, the geographical gap, etc. Judge, Pukett and Cabuk (2004), in

their attempt to examine access to computers among public school children, found that "higher poverty schools had significantly fewer computers and software programs" (p. 392).

According to Liu (2021, p. 8), "the existence of a digital divide between students from various socio-economic backgrounds has made many underserved communities in rural and developing nations suffer severely." Students living in isolated areas face several problems while learning. For instance, they cannot do their homework because of the unequal digital opportunities. In the same context, Baiuzzaman, Rafiquzzaman, Rabby, and Rahman (2021, p. 8), stated that students from rural areas and students from city-urban areas do not have the same digital opportunities, thus there is a distinction in the participation in online classes. The same thing happened to students belonging to low-income families. Those students cannot continue their online schooling due to the lack of infrastructures amenities.

1.1.6. Bridging the Digital Divide

The phenomenon of digital divide increased gradually within nations worldwide. Thus, it's high time governments acted to eliminate this problem as well as to help the disadvantaged individuals benefit from the different ICTs. Cullen (2002) stated that "there are no quick or easy solutions to the problem of the digital divide, either within nations or between nations" (p. 9). The digital divide is a widespread issue that cannot disappear at once. Therefore, there are no easy solutions to close this gap and there will be no immediate results. According to Ingram (2021):

> Bridging the digital divide and setting common rules of the road are bigger than any one donor. Building and innovating the infrastructure and software required to fuel digital development

> which is beyond the capability of government and requires partnership with the private sector. (p. 10)

That is to say, the digital divide is a complex issue and thus governments and rich people (donors) have to collaborate in order to reduce the divides.

According to OECD (2001), “Because the television is a familiar and relatively cheap household appliance, interactive television services could bring the Internet to poor, elderly and other low-access groups and thus help to bridge the digital divide” (p. 29). Hence, in order to eliminate the digital divide, the OECD suggested the use of digital televisions that might be means of diminishing the problem and healing the disparities. Those tools are cheaper and easy to be used, thus they can be used as an alternative. As an attempt to bridge the digital divide, Blunt, Cole, Martz and Sloan. (2021, p. 4) found that “Utah legislators have worked to decrease the gap caused by the digital divide by passing legislations, such as the ‘Smart School Technology Act’ of 2012, which encouraged the deployment of an integrated school-wide technology plan in public schools. Moreover, Moran (2016) argued that “providing devices in the early childhood setting familiarizes students with technology, and reinforce the use of technology to enhance learning” (p. 4). In the same context, Cullen (2002) claimed that libraries have a significant role in closing the digital divide throughout initiatives to promote information literacy… (p. 14). Besides, Tarman (2003, p.23) stated that in order to close the digital gap “liberalization to reduce communication costs needs to be considered. This policy should be backed up with the creation of a universal service providing access to Internet”. Furthermore, Tarman (2003, p. 24) added that low-interest loans should be offered for public equipment in both rural and urban districts, equipment prices should be pared down for poor as well as for low-income families and free web training sessions should be organized for all those who are left behind.

1.1.7. Towards Digital Equity

According to Miller, McComas and Hopkins (2021, p. 1) “digital equity is a state of fair access and effective use of technology necessary to participate in modern society where we increasingly experience education, work, human services, politics, and economy of the internet”. To improve ICT access and use, as mentioned in OECD (2001, p. 31), governments implemented distinct policy measures including infrastructure development, regulatory initiatives to improve network competition, assistance and ICT support for people living in rural areas, etc. According to Moore (2021, p. 6), the federal government in New York launched several investments to reach digital equity and address the digital inequalities that appeared during the COVID 19 pandemic. Moore stated that “the federal government has launched major investments in broadband and infrastructure, including the Emergency Connectivity Fund, an E-rate Program to allow emergency connectivity through schools and libraries…a federal subsidy to temporarily reduce the cost of household internet subscriptions for low-income households” (p. 6)

Initiatives to bridge the digital divide and reach digital equity have been taken by governments in different countries (USA, UK, Canada…). For instance, in the US and according the Office of Innovation and Technology (2022), “The city of Philadelphia has been engaged in digital equity work for over fifteen years, beginning with “the wireless Philadelphia efforts” to bring low-cost wireless access to everyone”. Accordingly, many inclusion initiatives were set to reach the target. The city of Philadelphia succeeds in managing a portfolio of digital equity programmes. These programmes ensured access to the internet, find a working device, and even enable thousands of Philadelphians to receive digital literacy training. In Canada, the federal government launched numerous initiatives including: the Digital Literacy Exchange and the Connecting Families Initiatives to bridge

the digital divide and reach the so-called digital equity (Andrey, Masoodi, Malli and Dorkenoo, 2021, p. 8).

Section Two: Academic Achievement and Digital Divide

1.2.1. Defining Academic Achievement

1.2.2. Measures of Academic Achievement

1.2.2.1. Grades

1.2.2.2. Educational Degrees

1.2.2.3. Standardized Achievement Tests

1.2.3. Factors Influencing Students' Academic Achievement

1.2. 3.1. School Facilities

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1.2.4. Improving Students' Academic Achievement

1.2.4.1. Using ICT Tools

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1.2.4.3. Managing Time

1.2.5. The Importance of Academic Achievement

1.2.6. The Impact of Digital Divide on Academic Achievement

Conclusion

Section Two: Academic Achievement

1.2.1. Definition of Academic Achievement

Academic achievement is the knowledge that an individual acquired through school programme or curriculum. It has been defined and perceived differently by several researchers: Vences (2014), Tian (2018), Eric and John (2013) to name a few. For example, Vences (2014) defined academic achievement as "a combination of ability and effort, presumably ability being equal to those with higher motivation, more effort and will, who achieve higher grades" (p. 39). That is, academic achievement is the accomplishment or acquired proficiency of an individual in a given skill or body of knowledge.

Moreover, it refers to “the students' learning outcome of a school curriculum [and] is a crucial indicator of education (Tian & Sun, 2018, p. 1). In the same vein of thought, Eric and John (2013, p. 20) stated that "academic achievement could be defined as the outcome students obtain through curriculum learning at school over a certain period of time". They further added that academic achievement is the degree to which students reach the curriculum objectives for a specific period of time (p. 22). Academic achievement has also been defined in several dictionaries such as “the Dictionary of Education” by Carter (1959), where he defined academic achievement as the knowledge attained or skills developed in school subjects usually determined by test scores or marks assigned by teachers (as cited in Ijsrr,2014, p. 93). Academic achievement hence refers to the scores obtained by students as a result of their accomplishment of a school programme.

1.2.2. Measures of Academic Achievement

Academic achievement is important in the educational sphere and due to its importance, some researchers such as Allen (2005) and Spinath (2012) who focused on the ways of its measurement. Spinath (2012, p. 2) in his research distinguished two important measures of academic achievement. These measures are: grades and educational degrees, and standardized achievement tests.

1.2.2.1 Grades

Grades play an important role in determining the students ' academic achievement particularly in higher education settings. According to Spinath (2012, p.2), grades are pedagogical means that is usually used to evaluate and quantify the students' academic achievement in school and higher education setting. He stated that" “grades are... valid measures of academic achievement because allocation and selection decisions for higher education and job position are, to a large extent, based on grades. This makes grades a very important issue for psychological research." (2012, p. 2). In other words, evaluation in education is the attempt to apply standardized estimation of varying levels of accomplishment in a course; grades are considered as measurement to evaluate the level of students' success. In the same context, Spinath (2012, p.3) emphasised the importance of grades by saying that grades help students to know their strengths and weaknesses in a certain course so that they can recognize their weaknesses in the coming tests. In the same vein of though, Allen (2005) considered grades as a standard to assess the student’s real level. He claimed that “if the grades are not accurate measures of the student’ achievement, then they do not communicate the truth about the level of students’ academic achievement” (p. 218).

1.2.2.2. Educational Degrees

Spinath (2012, p. 3) argued that "Educational degrees are another type of indicator of academic achievement. Educational degrees depend directly on the grades accumulated over the educational career; they are the most important prerequisite for admission to higher education and job position". That is to say, educational degrees are the most important type of academic achievement measures which based on the marks achieved in the academic career. Thus these degrees help the students to determine their supreme educational level and get a good future job.

1.2.2.3. Standardized Achievement Tests

Standardized achievement tests are another type of academic measurement according to Spinath (2012, p. 3). He stated that “Standardized achievement tests vary with regard to the degree to which they are curriculum based. A test that is meant to assess knowledge and skills that have been acquired at school has to be curriculum based". That is, these tests are designed following the curriculum. In addition, these standardized achievement tests are planned to give clear measuring of students' academic achievement.

1.2.3. Factors Influencing Academic Achievement

A number of theoretical studies have been conducted to determine the factors that affect students' academic achievement (e.g., Gardner in his theory of motivation and socio-economic model, 1985). It was found, thus, that achievement depends on many factors including school facilities, motivation, and proper guidance.

1.2.3.1. School Facilities

School facilities are significant factors that influence students’ academic achievement. For instance, Asiyai (2012) supported the idea that "school or Campus facilities are

resources for teachers and students to improve their learning and teaching process to achieve reproductive learning" (pp, 195-205). Moreover, these facilities were enumerated by Alimi, Ehinola, and Alabi (2012) where they identified that “the main element to boost academic achievement in the school system is school facilities. They include school buildings, classrooms, laboratories, libraries…” (pp. 44-48). Additionally, there are other facilities that can affect the students’ academic achievement such as teacher tools and teaching aids. Asiabaka (2008) also clarified the purpose for such facilities by saying that the purpose of providing a decent facility at school is to enhance the learning activity and it is booster to increase students’ achievement (pp. 10-21). Hence, it can be extracted that the availability of good school facilities has a positive effect on high school achievement and students’ learning.

1.2.3.2. Motivation

Motivation is one of the important elements in the process of second/foreign language learning as it has a huge impact on language learning achievement. According to Gardner (2001, pp. 1-19), who is one of the founders of L2 motivation, motivation includes three elements: effort (the effort to learn the language), desire (wanting to achieve a goal) and positive affect (enjoy the task of learning the language). Similarly, Chern (2002, p. 97) argued that "students’ motivation for learning English has remained at the level sufficient either to fulfil the course requirements or to pass the entrance examinations to the next level of schooling." Thus, motivation is considered as a forcible factor that force learners to do their best and to have the desire to achieve success in any learning environment.

1.2.3.3. Socio-economic Status

Among social and environmental factors**,** socio-economic status is crucial in exerting great influence on academic achievement of the students. Socio-economic status of

families effects students' academic achievement. According to Parson et al. (2001), "Socio-economic Status (SES) is the term used to distinguish between people's relative position in the society in terms of family income, political power, educational background and occupational prestige"(as cited in Rofikul, 2017. p. 666). In the same vein of thought, Spinath (2012, p. 7) declared that "most frequently, SES is assessed by occupation, education, income, or a combination of all. It is a general finding that the SES of a family is associated with children's academic achievement and their highest educational degrees".

Therefore, socio-economic factors, such as family income level, parents' level of education influence the quality of education as well as the students' accomplishments. For example, students from a family with high income may outsell good grades since the majority have the capacity to study in high quality schools and obtain supplemental education sources.

1.2.4. Improving Students' Academic Achievement

Improving academic achievement is one of the main goals of teachers and students in any learning context. Students' achievement measures the content that learners learn over a period of time and it can only be improved if the learner follows certain strategies like the use of ICT tools, peer tutoring mechanism, and time managing strategies.

1.2.4.1. Using ICT Tools

The role of Information and Communication Technologies (ICTs) as a tool to improve educational achievement has attracted growing attention in recent years. The educational systems have participated in the sweeping changes brought about by the global dissemination of them. The use of different ICT tools in the field of education has a vital role as stated by Becta (2007) "ICTs spread opportunities for communication within educational institutions and beyond them, creating new learning possibilities for students,

including those for whom the formal education system cannot provide coverage" (as cited in Alderete and Formichella, 2012, p.84). Similarly, ICTs have been introduced in schools to transform teaching and learning processes and improve strategies for academic achievement (Kozma et al., 2003). That is, the use of ICT tools in the educational sphere is beneficial for facilitating the learning process and improving the academic achievement.

1.2.4.2. Peer Tutoring

Peer tutoring is a teaching strategy that involves students' interaction to help each other's learning by one student occupying the role of tutor and the other as a tutee (Hott, Walker& Sahni, 2012, p.1). It is a technique that is used by students to interact with their classmates to accomplish certain tasks or to do assignments. Several studies that were carried out on the impact of peer tutoring revealed that it has a positive role in the instructional process. For example, in an evaluation study by Brost (2011) where the primary purpose of his research was to evaluate the effectiveness, shortcomings, and practicability of the peer tutoring programme that already existed in a college, he found that the mean score of the experimental group was significantly greater than the mean score of the control group, which means that peer tutoring improves the academic achievement.

1.2.4.3. Managing Time

Time management is one of the important factors that affect students' final results or achievement. It is a behaviour of fixing time in order to achieve certain goals. Researches regarding the impact of time management have gained popularity in the modern era. As reported by Forsyth (2009), ″Time management is a crucial skill. It can enhance personal productivity, allow you to focus on priorities, and ultimately act directly to improve your effectiveness and hence the overall success of the organization″ (p. 1). Nasrulah & Khan,

(2015) also have directly maintained that "time management plays a vital role in improving student's academic performance and achievement" (p. 66). Moreover, technology has an effective role in preserving time through using online calendars, programmes, and extensions including: free timer sites, browser extensions, and digital apps like rescue time.

1.2.5. The Importance of Academic Achievement

Academic achievement is important for every student because it reflects his/her improvement and determines his/ her status and level. The importance of academic achievement has been emphasised by Spinath (2012). He distinguished three perspectives: individual perspective, societal perspective, as well as educational and psychological perspective. With regards to the individual perspective, Spinath explained the importance of academic achievement on students by saying

> School grades and scholastic achievement tests are used as selection criteria for jobs and higher education. The strength of the association between academic achievement and indicators of life success is moderate... higher academic achievement open choices as to what university and course of study one enrols in and, later, what job one pursues, where, and with whom (p. 1).

That is, students who have high academic achievement and high grades are lucky to get a good future job and the priority to study in superior schools. As far as the societal perspective is concerned, Spinath (2012) said that "Academic achievement is the most important prerequisite for societal prosperity. The more educated a society is, the higher the chances for a positive socio-economical development." (p. 1). This means that the students' level is very important to function efficiently and effectively in their societies as well as to contribute in the development of those societies in all sectors.

1.2.6. The Effect of the Digital Divide on Academic Achievement

The digital divide has affected the educational sector in general and students' academic achievement in particular, especially in the recent few years since the system turned to the use of online interaction and technologies. In education some researchers referred to the digital divide as the homework gap (as mentioned in Wang' PhD thesis, 2020) since students may face rising challenges when they do their homework because they do not have access to the internet. According to a study from Hyspanic Heritage Foundation, 50% of students expressed that they were unable to complete their homework assignments because they lacked access to the internet and 42% reported that they received a lower grade because lack internet access (as cited in Wang, 2020, p. 20).

Furthermore, Lynch (2017.) argued that students without Internet cannot make connections with teachers or classmates, complete research, or access online homework help (as cited in Hutchings, p. 8). That is, they faced difficulties in submitting assignments on time and fails at obtaining correct and sufficient information that fit their concern as well. However, students belonging to high socio-economic status and have access to digital technologies may become competent and achieve better results compared to their counterparts.

Conclusion

Countries worldwide witnessed the spread of the digital divide phenomenon. On the one hand, this disparity among individuals can be in the level of access to the distinct technologies, the skills used to benefit from the available ICTs or in the level of outcomes. Second, multiple factors contribute to the widespread of this gap including: Age, geography, income, educational level, gender and race. Furthermore, the digital divide invaded the educational sphere creating inequalities among students and even teachers,

thus this gap should be bridged, and the inequalities among individuals should be eliminated to reach digital equity.

On the other hand, this digital exclusion affects academic achievement, which is considered as a turning point in the teaching and learning processes. It is an important factor for individuals, societies, and in field of psychological research as well. Additionally, it helps students in their educational journey and guides them to achieve their personal objectives for a better future. Therefore, students' academic achievement can be affected negatively by the digital divide which is an issue that creates digital inequalities among students in different study levels.

Chapter Two: Research Methodology and Data Analysis and Discussion

Introduction

This chapter is devoted to fieldwork, which investigates and analyses the impact of the digital divide on EFL students' academic achievement at the department of English, in Mohammed Seddik Ben Yahia University, Jijel. It explains the methodological approach used in this study starting with a description of data collection procedures, the population and the main tools used to conduct this research. Then, the analysis of the data obtained via students' questionnaire and teachers' interview is conducted and displayed in order to reach some conclusive results.

2.1. Data Collection Procedures

In order to analyse the effect of the digital divide on students' academic achievement, a questionnaire for students and an interview with teachers were designed as the research instruments of this study. First, a questionnaire was administered to EFL students of Mohammed Seddik Ben Yahia University. It was directly handed to the respondents during their regular English sessions in the period from 15 to 30 May, 2022. In order to answer the questionnaire, students were given enough time to read and answer each question carefully. However, the attempt to collect all the answers' sheets was not that easy; 9 students did not give the answers' sheets back.

Second, an interview was designed to probe teachers' standpoints about the issue of digital divide. The interview was conducted during the period of the second semester exams (academic year 2021-2022) but reaching the underlined objective (interviewing ten teachers of English) was not such an easy task due to many factors: teachers' hesitation, refusal to be recorded, busy schedule… During the recording sessions, each teacher was met individually so that one's answers will not be influenced by another.

2.2. Research Population and Sample

The population of this study comprises two groups; EFL students and teachers at the Department of English, Mohammed Seddik Ben Yahia University, Jijel. First, 150 students from different study levels have been randomly chosen as the sample of the study. This selection was based on the consideration that the digital divide is not relative only to one study level; all students may encounter this issue. Second, other participants in this study were eight (8) teachers at the same department who were chosen randomly, too, for an interview that aims at getting more information about the phenomenon of digital divide and comparing the results obtained via the students' questionnaire.

2.3. Students Questionnaire

2.3.1. Administration and Description of the Questionnaire

The students' questionnaire was administered to 150 students from different study levels at the department of English, Mohammed Seddik Ben Yahia University. It was made up of 25 questions; multiple choice questions, likert scale questions and open - ended questions. As far as multiple choice and likert scale questions are concerned, students were asked to tick the appropriate answers that mostly appeal to them. Through open- ended questions, students were asked to provide free responses or justify their point of view. All questions were categorized under four implicit sections on the basis of their underlined objectives.

The first section is entitled "Digital Access" and comprises ten questions (Q1_Q10). This section aims at collecting some general pieces of information about the targeted students including their gender, age, and living area (Q1-Q3). Then, a couple of questions were addressed in hopes of getting a clear image of students' familiarity with ICTs (Q4-Q7), their attitudes towards the factors that may influence the use of ICTs (Q8-Q9), and their usage of such tools for educational purposes (Q10).

As far as the second section is concerned, three questions were designed to collect information about students' digital skills (Q11-Q13). In Q11, students were asked whether they have the sufficient skills to use ICTs. In Q12, however, the participants were expected to rate the digital skills they possess (from good to bad) whereas the last question in the section was designed to gather data about the students' attitudes towards how the lack of such skills may influence ICT usage (Q14).

The third section which is entitled "Academic Achievement" and "Digital Divide" (Q15-Q23) tackles distinct points about students' level, academic achievement, and how can the digital divide effect students' academic achievement. Given that academic achievement and digital divide are the research variables that the study revolves around, students were given the opportunity to answer a couple of questions and express themselves regarding the topic by ticking the box they adjudged relevant to them.

The fourth section 'Bridging the Digital Divide' deals with some suggested solutions as to heal the digital inequalities. This section comprises two questions (Q24-Q25): In question 24, students were asked to say whether the problem of digital divide can be solved or not whereas question 25, which was a four-Likert scale, was designed to rate the students' agreement with six statements related to some possible solutions to bridge the digital gap and reach digital equity.

2.3.2 Analysis and Discussion of the Results of the Students Questionnaire

2.3.2.1. Analysis of the Results of the Students Questionnaire

This section reports students' responses to the questionnaire and displays the data obtained in representative tables because they "make it easy to navigate our sort large amounts of data in various ways, allowing researchers to examine them from multiple angles" (Cloutier & Ravasi, 2021, p. 113).

Section One: Digital Access

Q1. Gender? a) Male b) Female

Table 2

Students' Gender

Options	**Number of Respondents (N)**	**Percentage (%)**
Male	14	9.93%
Female	127	90.07%
Total	141	100%

The ultimate purpose of this question is to disclose the number of males and females, and to find out who used those tools more. Surprisingly, checking *table 2* is enough to notice that the sustainable majority of participants (127) are females representing 90.07% of the target sample, whereas males only represent 9.93% of the students under scrutiny. Thus, based on the obtained data, no generalization concerning the relation between gender and ICT use can be made.

Q2. Age? a) 17-24 b) 25- 64

Table 3

Students' Age

Options	**N**	**%**
17-24	121	85.82%
25-64	20	14.18%
Total	141	100%

This question about students' age aims at finding to which group participants belong in order to find out whether or not there is a link between their age and the use of ICTs. As regards students' age, *table 3* shows that 121 students with a percentage of 85.82% are

aged between 17 and 24, whereas only 20 out of 141 students (14.18%) are aged 25 or more. As indicated in the table, hence, teens represent the large group of participants given that only 20 students belong to the second category (25-64 years old).

Q3. **Do you live in an urban area (city) or a rural area (countryside)?**

Table 4

Students' Living Areas

Options	**N**	**%**
Urban	102	72.34%
Rural	39	27.66%
Total	141	100%

The aim of this question is not merely to ask about where students live (in urban or rural area) but to check whether geography influences ICT access and usage or not in later questions (as in questions Q4, Q7, Q8 and Q11); whether or not students living in rural areas encounter problems in the access and use of ICTs. As it is shown in *table 4*, 102 of the surveyed students (72.34%) are living in an urban area while only 39 (27.66%) participants are living in rural areas.

Q4. Do you have access to information communication technologies (ICTs: Computers, cell phones, Internet, etc)?

Table 5

Students' Access to Information Communication Technologies

Options	**N**	**%**
Yes	141	100 %
No	0	0 %
Total	141	100%

This question was devised to disclose the number of students who have access to ICTs. That is, whether or not all students have access to the various ICT tools. As it is shown in *table 5*, all students under scrutiny (100%) do have access to information communication technologies even those living in rural areas (39 students). Then, from the displayed data, it can be said that university students are "digital-natives", i.e., familiar with ICT tools as they have access to them.

Q5. If yes, what kind of ICTs do you have access to?

a) Cell-phones b) Computers c) Internet?

Table 6

Accessible Types of ICTs

Options	**N**	**%**
Cell phones	138	97.87%
Computers	61	43.26%
Internet	98	69.50%

The purpose of this question is to find out the kinds of ICTs that students under scrutiny have access to. The findings represented in *table 6* show that the great majority of students with a percentage of 97.87% stated that they have cell phones, 69.50% of the participants have access to the internet (25 of them live in rural areas), whereas only 43.26 % of the surveyed students admitted that they have computers. Hence, the obtained results show that students do not have access to all types of ICT devices especially a computer with Internet connectivity which is said to be useful in learning both online and offline.

- Others?

This question aims at finding out other types of ICT tools students may have access to. To this end, students were given the opportunity to list all ICTs they possess. The findings show that 40 students reported that they have laptops while 15 participants claimed that they have gamers and smart glasses.

Q6. Do you use mobile (Cellular) data, Wi-Fi or both?

Table 7

Internet Service Type Students can Access

Options	**N**	**%**
Mobile (Cellular) data	41	29.08%
Wi-Fi	76	53.90%
Both	24	17.02%
Total	141	100%

Table 7 shows students' responses regarding the type of internet they can access. 53.90% or 76 of the participants reported that their internet service is generated using Wi-Fi whereas 29.08% (20 out of 41 participants live in rural areas) of the students claimed that they use mobile (cellular) data instead. However, only 17.02% claimed that they use both mobile data and Wi-Fi. Therefore, it can be deduced that the reason why some students use mobile data is that they live in areas where access to internet is restricted due to the poor infrastructures (rural areas).

Q7. How would you describe your internet connectivity?

a) Fast b) Average c) Slow d) No access

Table 8

Rating Internet Connectivity Speed

Options	**N**	**%**
Fast	21	14.89%
Average	77	54.61%
Slow	42	29.79%
No access	1	0.71%
Total	141	100%

Question 7 revolves around students' rating of their internet connectivity speed. The ultimate purpose of this question lies in finding out whether all students have stable and high-speed internet connection or not. According to the data gathered, it is noticed that half participants (54.61%) argued that their internet connectivity speed is average whereas 40 students, i.e., 29.79% (20 of them live in rural areas) rated it as slow. Additionally, 14.89% of the surveyed students claimed that it is fast while only one student (0.71%) affirmed he has "no access" at all. That is to say, the majority of the surveyed students (no matter where they live; city or countryside) do not have high-speed connectivity. Therefore, it can be deduced that the lack of access to stable and high-speed internet connection may hinder them from fulfilling their tasks and promoting their learning.

Q8. Do you think that people living in rural and isolated areas have limited access to ICTs?

Table 9

Students' Perceptions of Access to ICTs in Isolated Areas

Options	**N**	**%**
Yes	109	77.30%
No	32	22.70%
Total	141	100%

Akin to the aim of question three (Q3) which is about whether or not geography influences ICT usage, this question aims at collecting data about students' perceptions of the use of ICTs in isolated and rural areas. To this end, they were asked whether people living in such places have limited access to ICTs or not. As shown in *table 9,* 109 students with a percentage of 77.30% confirmed such stance, whereas 22.70% of the students under scrutiny believed that living in an isolated area has nothing to do with the limited access to ICTs. From the obtained results, one can deduce that students hold negative perceptions towards access to ICTs in rural and isolated areas.

Q9. Do you think that families with low income can afford ICT tools?

Table 10

Students' Perceptions of the Ability of Families with Low-income to Afford ICTs

Options	**N**	**%**
Yes	65	46.10%
No	76	53.90%
Total	141	100%

Again, the ultimate purpose of this question is to collect information about students' opinions with regard to the income and the affordability of ICT tools. To this end, the participants were asked whether or not families with low-income can afford the different ICT tools. The obtained results indicate that more than half of the surveyed students (76 out of 141) commented that families with low- income cannot afford ICT tools. Others, however, with a percentage of 46.10% believed these families can afford such tools despite the low-income. From the data gathered, it is crystal clear that students have negative attitudes towards the ability of low-income families to afford ICT tools.

Q10.Do you use ICT tools for educational purposes?

Table 11

Students' Experience in Using ICTs for Educational Purposes

Options	**N**	**%**
Yes	136	96.45%
No	5	3.55%
Total	141	100%

By this question, the researchers intend to find out whether students use ICTs for educational purposes or not. One can notice from the table above that the great majority of students with a percentage of 96.45% declared that they do use ICTs for educational purposes. Yet, only five participants with a percentage of 3.55% admitted that they do not use such tools in their language learning.

Section Two: Digital Skills

Q11. Do you think you have sufficient digital skills to use ICT tools effectively?

Table 12

Students' Perceptions of Their Digital Skills

Options	**N**	**%**
Yes	99	70.21%
No	42	29.79%
Total	141	100%

The aim behind this question is to find out whether students have sufficient digital skills to use ICT tools effectively or not. Table 12 indicates that many students with a percentage of 70.21% thought they have the necessary skills to use such tools. Yet, 29.79% of them said that they do not have sufficient digital skills to use ICTs.

Q12. How would you rate your level of skills in using ICTs? (ICT literacy)

Table 13

Students' ICT Level

Options	**N**	**%**
Beginner	10	7.09%
Basic skills	50	35.46%
Intermediate	31	21.99%
Competent	23	16.31%
Advanced	27	19.15%
Total	141	100%

This question seeks to look closely into students' level in using ICTs. In this regard, students were supplied with five options namely: "beginner, basic skills, intermediate, competent, and advanced". As it is plainly displayed in *table 12*, 50 participants with a percentage of 35.46% admitted that they only have basic digital skills whereas 21.99% of the surveyed students stated that they have an intermediate level. Additionally, 19.15% of the students under scrutiny claimed that they have an advanced level while 16.31% ticked the box "competent". The rest of the surveyed students with a percentage of 7.09% confirmed they are completely beginners, and selected the first option.

Despite claiming to have sufficient ICT skills in a previous question, when ranking their real level in digital literacy, many students (64.54%) admitted that they have not reached an advanced level yet (they are beginners or have the basic skills). Hence, they still need training as far as the efficient use of ICT is concerned.

Q13. What kind of digital skills do you have?

Table 14

Types of Digital Skills

Options	**N**	**%**
Communicating	113	80.14%
Information processing	52	36.88%
Data entry	39	27.66%
Emailing	67	47.52%

The present question probes into students' digital skills to see what kind of digital skills students have. As the table denotes, 80.14% of the students can communicate using technological devices, whereas 47.52% of them are good at "emailing". It is displayed,

however, that students who are good at “Information processing” and “data entry” represent 36.88% and 27.66% of the target students. Thus, it can be said that students are not skilled enough when it comes to data entry and information processing; two of the important skills that students need to enhance their learning experiences. That is, they need to be trained on how to use different types of ICT.

Q14. Do you think that the lack of digital skills influences ICT use?

Table 15

Students’ Opinions about the Impact of the Lack of Digital Skills on ICT Use

Options	**N**	**%**
Yes	123	87.23%
No	18	12.77%
Total	141	100%

This question was designed to elicit students’ perceptions of the impact of the lack of digital skills on ICT usage. When they were asked whether or not the lack of such skills influences ICT use, the great majority (87.23%?) of the students confirmed that the lack of digital skills influences ICT use, whereas the remaining students (12.77%) do not see there is a correlation between lack of digital skills and ICT usage.

- Why?

Students here were asked to justify their answers to Q14. The answers can be summarised as follow:

- Without digital skills, ICTs will not be used effectively.

- Lacking such skills will decrease students' confidence in using the emerging ICTs, and thus their productivity.

- "If you do not have the sufficient skills, you will not be able to solve the technical issues you may face independently".

- "Digital skills are important… a lot of my classmates do not know how to use Word or Power Point because they are not skilled enough."

- "You may need to use ICTs in different domains. So, if you lack digital skills you will not be able to use them easily."

Section Three: Academic Achievement and Digital Divide

Q15. As a student, how would you describe your level in English?

Table 16

Students' Level in English

Options	**N**	**%**
Very good	14	9.93%
Good	92	65.25%
Intermediate	34	24.11%
Bad	1	0.71%
Total	141	100%

This question was set to find out how participants evaluate their current level in English. Students' responses revealed that 9.93% of the students claimed that their level is very good, while 65.25% of them believed they have a good level. 24.11% of the students considered their level as being intermediate. However, only 0.71% of the participants

admitted their level is bad. These findings indicate that more than half of the surveyed students are satisfied with their level.

Q16. As a student what are the factors that may influence your academic achievement?

Table 17

Factors Influencing Students' Academic Achievements

Options	**N**	**%**
Motivation	56	39.72%
Family support	61	43.26%
Learning facilities	93	65.96%
School facilities	32	22.70%
Socio-economic status	23	16.31%

The main purpose of this question is to uncover students' opinions about the factors that may influence their academic achievement. According to the obtained results, the most influencing factors that affect students' academic achievement are learning facilities (65.96%) and family support (financially and emotionally) (43.26%), while 39.72% of the surveyed students claimed that motivation has a significant impact on their academic achievement. However, the least influencing factors from the students' perspectives are school facilities (22.70%) and socio-economic status (16.31%). Hence, since the learning facilities (computers, internet connectivity and other devices) are said to play a crucial role in enhancing students learning (according to 65.96% of students), the lack of such facilities may negatively influence students' achievement.

Q17. What may help students improve their academic achievement?

Table 18

Strategies that Help Students Improve their Academic Achievement

Options	**N**	**%**
Using ICTs to study, do research	91	64.54%
Asking questions	73	51.77%
Taking responsibility for their own learning	55	39.01%
Connecting with classmates and teachers	58	41.13%

This question revolves around the strategies that may help students improve their academic achievement. According to the collected data, 64.54% of the participants said that using ICTs to study and to do research helps them enhance their academic achievement, whereas 73 of them with a percentage of 51.77% considered asking questions of a great importance. Additionally, 41.13% of the surveyed students believed that to improve academic achievement, students have to take responsibility of their own learning (researching, developing learning autonomy using ICT…). Other students, however, with a percentage of 39.01% considered connecting with peers and teachers inside and outside the classroom as essential to improve their academic achievement. It becomes evident, thus that digital tools such computers and internet connection play a major role in education and that digital skills such as communicating and emailing (see Q13) are deemed necessary to connect with peers and teachers as to enhance their learning.

18. How often do use ICTs for educational purposes (doing homework, preparing assignment...)?

Table 19

The Frequency of Students' Use of ICTs for Educational Purposes

Options	**N**	**%**
Always	70	49.65%
Sometimes	71	50.35%
Rarely	00	00%
Never	00	00%
Total	141	100%

This question tends to find out the frequency of using ICTs for educational purposes. As *table 19* denotes, half of the students (50.35%) insured that they sometimes used ICT tools for educational purposes, whereas 49.65% of them stated that they always used ICTs for learning purposes. No student selected the last two options. This shows how the distinct ICTs invaded the educational sector and that students use them to a large extent in order to enhance their language learning.

Q19. Do your teachers ask you to do homework, projects and assignments on a regular basis?

Table 20

The Necessity for Doing Homework, Projects and Assignments.

Options	**N**	**%**
Yes	115	81.56%
No	26	18.44%
Total	141	100%

This question was designed to find whether or not students are given assignments and projects. From the results obtained, most of the surveyed students (81.56%) said that their teachers do give them assignments on a regular basis, whereas only 26 of the students under scrutiny claimed that they are not asked to do neither assignments nor projects.

Q20. Do the preparation and the submission of those assignments require the use of ICTs?

Table21

ICTs Use for the Preparation and the Submission of Assignments

Options	**N**	**(%)**
Always	80	56.74%
Sometimes	45	31.91%
Never	16	11.35%
Total	141	100%

The ultimate aim behind this question is to reveal whether the various ICT tools are needed to prepare and submit the assignments students are asked to do. Seemingly, the findings demonstrate that 56.74% of the students have the firm belief that the preparation and the submission of the given assignments always require the use of ICTs, whereas 31.91% of the participants stated that it is sometimes necessary to use ICTs in order to prepare or submit the assignments they are asked to do. Regarding the last option, only few students with a percentage of 11.35% argued that they never need those tools to prepare or submit the given assignments.

So, things start to make sense; if homework and assignments are graded and since the majority of students neither have high-speed internet connection (see Q7) nor sufficient skills to use ICTs (see Q12) for preparing and submitting the given assignments, then

their academic achievement will be affected to some extent by the digital divide (inequities in access and use of ICTs).

Q21. Are you required to undertake online quizzes/ tests?

Table 22

Undertaking Online Quizzes and Tests

Options	**N**	**%**
Yes	99	70.21%
No	42	29.79%
Total	141	100%

Under the banner of this question, students were asked if they are required to undertake online quizzes or exams. As revealed in ***table 22***, the substantial majority of the students (70.21%) said that they do undertake online tests, whereas 29.79% of the participants admitted that they do not. Akin to the results yielded from Q20, students' academic achievement is affected since not all of them have stable and high- speed internet connection and also the required digital skills to undertake online tests.

Q22. Is there a digital divide at your university?

Table 23

The Existence of a Digital Divide at the University Level

Options	**N**	**%**
Yes	89	63.12%
No	52	36.88%
Total	141	100%

The ultimate aim behind this question is to find out whether students at Mohammed Seddik Ben Yahia University are aware of the existence of the "digital divide" phenomenon which means that not all students have access to the different ICT tools, and

can use them effectively. As shown in ***table 23***, 63.12% of the students believed that there is a digital gap in their university while 36.88% of the participants claimed that there is no such an issue by ticking the option “no”. From the results obtained, it can be deduced that there is a digital gap among students.

Q23. Does digital divide have any impact on your academic achievement?

Table 24

The Impact of the Digital Divide on the Students’ Academic Achievement

Options	**N**	**%**
Yes	54	38.30%
To some extent	80	56.74%
No	7	04.96%
Total	141	100%

The ultimate aim behind asking such question is to finally delve into the impact of digital divide on academic achievement. That is, whether or not the inability to access and use ICT tools has an effect on students’ academic achievement. In essence, the majority of the participants with a percentage of 56.74% opted for “To some extent”. Additionally, 38.30% of the students under scrutiny ticked the option “yes”, whereas only seven students asserted that the digital divide does not have any impact on their academic achievement. Thus, it can be said that the digital divide has an impact on students’ academic achievement.

Section Four: Bridging Digital Divide

Q24. Can the problem of digital divide be solved?

Table 25

The Possibility to Solve the Problem of the Digital Divide

Options	**N**	**%**
Yes	122	86.52%
No	19	13.48%
Total	141	100%

This question centers on the students' opinions regarding whether the issue of digital divide can be solved or not. On the basis of the results displayed in ***table 25***, more than half of the participants with a percentage of 86.52% believed that there are solutions to such a problem, whereas the remaining students (13.84) ticked the answer "no" which means that they thought that this problem cannot be solved.

Q25. Rate your agreement with the following statements.

Table 26

Solutions for Bridging the Digital Divide

Statements	**Frequency (percentage)**			
Scale	**SA**	**A**	**D**	**SD**
a) The Ministry of Education is able to realize digital equity (equal access to ICTs) and narrow the digital gap among all students.	12 8.51%	73 51.77%	28 19.86%	28 19.86%
b) Infrastructures should be within the reach of the university community.	46 32.62%	70 49.65%	24 17.02%	1 0.71%
c) Libraries can reduce the digital gap among	85	34	18	4

students by providing free access to the different technologies (computers, e-books…)	60.28%	24.11%	12.77%	2.84%
d) There should be collaboration between governments and donors to narrow the digital gap.	52 36.88%	58 41.13%	28 19.86%	3 2.13%
e) Universities should provide free equipped training centres for both students and teachers to foster digital literacy.	67 47.52%	58 41.13%	7 4.96%	9 6.39%
f) Teachers have to encourage group work inside and outside the class as an initiative to bridge the digital gap in universities.	52 36.88%	55 39.01%	24 17.02%	10 17.02%

This question seeks to shed the light on students' standpoints towards certain solutions for the issue of digital divide. To this end, students were asked to rate their agreement with the given statements (a) to (f).

The results displayed in table 26 show that the majority of students (88.65%) either "agree" or "strongly agree" that universities should provide free equipped training centres for both students and teachers to foster digital literacy. In addition, 84.39% of the participants "agree" or "strongly agree" that libraries can reduce the digital gap among students by providing free access to the different technologies (computers, e-books…). Moreover, 82.27% of the students under scrutiny either "agree" or "strongly agree" that Infrastructures should be within the reach of the university community. Furthermore, 78.01% of the surveyed students ticked either the option "agree" or "strongly agree" that governments should collaborate with donors to narrow the digital gap. 75.89% of the participants, however, selected the option "agree" or "strongly agree" that teachers have to encourage group work inside and outside the class as an initiative to bridge the digital gap

in universities, whereas 60.28% of the students either “agree” or “strongly agree” that the Ministry of Higher Education is able to realize digital equity (equal access to ICTs) and narrow the digital gap among all students.

2.3.2.2. Discussion of the Results of the Students Questionnaire

This part is devoted to discuss the main findings obtained from the students’ questionnaire and to set some conclusions yielded in each section. To begin with, it is deduced that students seem to be familiar with ICTs as shown by answers to Q4. Simply put, all participants are digital-natives. Yet, they neither have access to all of those tools nor have stable and high-speed internet connectivity to use the technologies at hands as indicated by answers to Q5&Q7. That is, digital divide exists among EFL students at Mohammed Seddik Ben Yahia University at its first level “Digital Access Divide” (see Section One of the Literature Review).

Additionally, when reporting students’ answers, it becomes clear that students hold negative viewpoints towards the ability of families with low income to afford ICT tools and towards their availability in rural areas bearing in mind that 27.66% of the participants live in the countryside where access to information communication technologies is limited. Nevertheless, ICTs are woven to students’ life and become an essential thing that students seem to be open up to. Therefore, it comes with no surprise that almost all students (136 out of 141) use ICTs for educational purposes as indicated by answers to Q10.

Diving deeper into the use of ICTs and the need for sufficient digital skills, another conclusion is drawn from the students’ responses in the second section of the questionnaire. It comes with no surprise that all the students supported the idea that the lack of digital skills influences ICT usage. Yet, not all of them have the sufficient digital skills (data entry and information processing) as shown in answers to Q11-Q13.

As section three revealed, students' academic achievement seems to be influenced by different factors. Yet, the sustainable majority of students claimed that the learning facilities are the most influencing factors on their achievement. Moreover, students may improve their achievement if they use ICTs and take responsibility for their own learning (Q16- Q17). Regarding the use of ICTs for educational purposes, it is clearly shown in results obtained by Q18 that the majority of the participants always use them especially when they are asked to do assignments or undertake online tests (Q19-Q20-Q21). Therefore, ICTs, which not all students have or have the skills to use, are essential for better academic achievement as indicated in answers to Q22& Q23.

Concerning the last section, a question and a bunch of statements that tackle bridging the issue of digital divide were addressed to students. The conclusion drawn from the students' responses is that it is widely believed the problem can be solved if the government, universities, libraries, etc., assume responsibility for bridging the digital gap by launching programmes and initiatives that seek to create digital equity in societies in general and in schools and universities in particular.

2.4. Teachers Interview

2.4.1. Administration of the Interview

The interview was conducted with eight (8) EFL teachers of different specialties at Mohammed Seddik Ben Yahia University. It took place in the second semester of the academic year 2021-2022 during the period of examinations. The interview was conducted in a relaxing mood, and the teachers felt free to provide any additional information or explanation they may see necessary to discuss the issue addressed in this research paper.

2.4.2. The Description of the Interview

Dornyei (2007, p. 134) defined the interview as “the most often used method in qualitative inquiries; it is regularly applied in a variety of applied linguistic contexts for diverse purposes”. The interview has many forms, face to face and group interviewing, and can be categorized under different types, namely, structured, semi-structured, and unstructured interview.

Therefore, in this study a semi structured interview consisting of eleven questions was conducted with eight teachers. These questions were planned earlier. The researchers met each teacher individually in order to ensure that none of their answers would influence another’s answers. Each interview took between 10 to 15minutes depending on the teachers’ answers and the direction of the questions and answers. The written questions are organized from the most general to the most specific. All the questions were open ended permitting the participants to provide free answers. Additionally, all the participants` answers were recorded using the researchers’ smart phones in the absence of appropriate audio taping devices. The major aim of the interview was to find out teachers' perceptions about the digital divide and its impact on students' academic achievement at Mohammed Seddik Ben Yahia University, Jijel. It also aimed to complement the questionnaire data and integrate another sample (teachers) to ensure covering the highlighted problem.

2.4.3. The Analysis of Teachers Interview Results

- Teachers’ Use of ICTs in their EFL Teaching

The ultimate aim behind this question is to find out whether the teachers at the department of English are familiar with the use of ICTs in teaching. All the participants stated that they use ICTs in their EFL teaching either at home or at university. One of them claimed that using such tools helps him get his students engaged and polish the way he

teaches. Moreover, all teachers confirmed they use different kinds of ICTs in their EFL teaching, depending on the modules they taught (or are currently teaching) including: laptops, data show, language translators, digital dictionaries, and social media groups.

-Digital Skills and the Implementation of the New Trends to Teaching and Learning

This question particularly aimed at finding whether the teachers at the department of English have the digital skills needed for implementing the newly- introduced approaches and trends to teaching. The teachers' answers vary between those who have the sufficient skills to use ICTs and those who do not. Additionally, some of the participants (three) had training in the use of such tools, whereas others admitted that they lack such skills what makes them frustrated when it comes to the integration of ICTs in their teaching.

- Teaching Activities and the Use of ICTs

Teachers use various activities that all require the use of ICTs. Most of them mentioned email-guidance while one teacher said he uses machine translation software. Another teacher, however, claimed that he uses all the listed activities. For instance, one teacher said "I use them all especially for supervising and tutoring. I designed many online assessments and tests. I put my lessons online in Pdf format, Word or PowerPoint. I use hyper-links to audios and video files…". Another teacher stated "Most of the times, it is discussions".

-Teachers' Perceptions of the Ability of their Students to Attend Online Classes

In an attempt to disclose teachers' standpoints about the ability of their students to attend online classes, the interviewees were asked whether all their students have the ability and the sufficient skills to attend an online class. All teachers believed that not all of their students can attend online classes due to the lack of digital skills or limited access to

ICTs. Some teachers added that the financial reasons and the absence of stable internet connectivity hinder students from doing so. The teachers' answers to this question go hand in hand with what students reported in the questionnaire; the existence of the "Digital Access Divide" among EFL students.

-Assignments as a Way of Assessment

All teachers said that they do give assignments to their students. For instance, a teacher stated "Yes, I always do that. In my oral expression sessions, I often ask them to prepare role plays". Another teacher added "Yes, I do. However, I find problems with students. The majority do not have access to the net". A teacher also claimed "of course, since my module is practical, there are a lot of assignments". The teachers' answers to this question go hand in hand with what students reported in the questionnaire (See Q19).

- The Use of ICTs for the Preparation and the Submission of Assignments

All the participants claimed that the given assignments require the use of ICT tools except one teacher who admitted that he prefers using the traditional approach (classroom instruction) because not all of his students have access to the internet to send the assignments via email and this is a clear reference to the digital gap. Moreover, the teachers stated that the assignments they give are always graded and taken into consideration in the final mark. For example, an interviewee said "Absolutely, I never give an assignment that is not graded. I do always take them into consideration to give the TD mark". Another teacher added: "Of course, they are part of their evaluation".

- Undertaking Online Tests

Teachers' responses revealed that students did take online tests in some modules. These tests required for sure the use of ICTs and high-speed internet connectivity. The question

that can be raised then is “How could students with limited access and skills manage to pass those tests?”

- Teachers’ Perceptions of Students’ Achievement in Online/ Paper Tests

The majority of teachers believed that students do achieve better results in paper-based tests (5 teachers) whereas 2 teachers selected online tests. Another response indicates that students’ achievement in both online tests and in paper-based tests is the same. For instance, one teacher said that “I think it is paper tests. We do not reach the level of teaching or testing online yet”. Another teacher added “For the current state of efforts, I think paper-based tests!”.

- The Absence of ICTs and its Impact on Students’ Academic Achievement

Some teachers argued that the absence of ICTs does affect students’ academic achievement while others stated that it makes no difference. For example, a teacher stated “Oh, yes. Absolutely, they do affect”. Another teacher deemed “I would say that these tools would help those who want to do well”. The teachers’ answers to this question go hand in hand with what students reported in the questionnaire (See Q23).

- The Factors Contributing to the Digital Divide

Some teachers considered that financial and geographical reasons do contribute to the issue of digital divide. Others stated that the lack of the educational level and the lack of digital skills are playing major roles in widening the gap. For instance, a teacher said “Well, teachers and students have not been exposed to any of digital trainings, therefore they lack digital skills which contributes to the issue”. Another teacher added “I would say economic or financial reasons are the most contributing factors”.

- Overcoming the Issue of the Digital Divide

Teachers believed that providing equipped classrooms and free trainings for both students and teachers is necessary to overcome the issue of digital divide among EFL University students in order to enhance their language learning achievement. For instance, a participant said “Big decisions should be taken by the authorities to equip the classrooms as the basic minimum”. A teacher, however, thought that students should not wait for anyone to help them ensure access to the needed ICTs. According to him, students should be independent financially to buy whatever devices they need. Another teacher said “Our university lacks ICTs. Computers are broken and the headphones do not work... classrooms should be equipped and the government should provide ICT environments along with free trainings for both students and teachers.

2.4.4. Discussion of the Findings from the Teachers Interview

In the light of what has been revealed by the interview results, one can lay down on a number of conclusions. The following paragraphs will hopefully present the conclusions driven from the overall analysis in a clear manner.

One conclusion that can be yielded from the analysis of the interview is that all teachers at the University of Mohammed Seddik Ben Yahia do use distinct ICTs in their EFL teaching, including web sites, digital books, blogs, animations, recordings, laptops, digital dictionaries and other ICT tools. However, not all teachers have the sufficient digital skills to use the technologies they have access to. Despite the fact that teachers lack digital skills, they do use some teaching activities including discussion groups, email guidance…..

Diving deeper, teachers were asked about their students and whether they could all manage to attend the online exams or not. The participants claimed that not all students can do that because they have neither the required skills nor stable internet connection.

Therefore, another conclusion that can be drawn from their responses is that students are asked to do assignments that require the use of ICTs which not all students have or had the skills to use. These assignments are graded and taken into account in their final marks what affects their academic achievement to some extent as stated by the majority. This was further confirmed by their confessions that students perform better in paper-based tests and not in online tests

While spotting the light on the digital divide phenomenon and how to overcome such an issue, teachers declared that the educational level, the geographical and financial reasons are the main factors that contribute to the issue. Hence, another conclusion that can be drawn from the teachers' responses is that providing equipped classrooms and free trainings for both students and teachers is necessary to narrow the digital gap.

2.5. Limitations of the Study

While conducting this research, we encountered a number of challenges:

1. **The Research Topic**: As a new research topic, it was so difficult and time consuming to find relevant references. And because there have not been any researches conducted to investigate the issue of "digital divide" at this university before; the concept was new for the majority of students as well as for teachers, so, the researchers were obliged to introduce the topic and provide explanations to each participant each time to avoid ambiguity or misunderstanding.
2. **Collection of the Questionnaire**: It was not easy to interact with 150 students of English at once and the attempt to deal with all of them failed. Unfortunately, only 141 of the students have answered the questionnaire; nine of them did not submit the questionnaire sheets back.

3. **Lack of Teacher Cooperation**: Some teachers were not cooperative as they refused to participate in the study. So, the underlined objective which was to conduct interviews with ten teachers could not be reached. Many of them said they have busy schedules while others claimed they can add nothing to the study.
4. **Access to ICT tools:** Belonging to the same community where the issue of the digital divide is widely prominent, the researchers themselves do not have access to different ICTs; they did not have their own personal computers, limited or slow internet connection, lack of audio recording devices and the lack of digital skills that are essential to collect the data.

2.6. Pedagogical Recommendations

Based on the results obtained from the students' questionnaire and teachers' interview the following recommendations are proposed:

1. EFL teachers should make sure that all students are able to access the internet and have the necessary devices before giving them assignments or asking them to undertake online tests.

2. Universities should provide both teachers and students with free equipped training centers as an initiative to enhance their digital skills and exchange digital literacy.

3. Universities should also equip libraries and classrooms and offer Wi-Fi hotspot for all the students.

4. Authorities should launch initiatives to renew the infrastructures in both rural and urban areas and ensure access to high-speed internet access.

Conclusion

In brief, the aim of this chapter was to analyse the effects of digital divide on EFL students' academic achievement at the University of Mohammed Seddik Ben Yahia- Jijel. To reach this aim, two research instruments were used: a students' questionnaire and an interview with teachers. These tools helped analyse how students' academic achievement is affected by digital divide. At the end of this chapter, it was confirmed that the issue of digital divide has a negative impact on students' academic achievement to some extent.

General Conclusion

Academic achievement is the main concern of every student because it determines his/ her level and grade. This latter, however, can be affected by different factors. Unfortunately, the digital inequalities among students have an impact on their achievement. This study, therefore, aimed fundamentally at analysing the effects of digital divide on EFL students' academic achievement at the University of Mohammed Seddik Ben Yahia- Jijel. Therefore, it has been hypothesized that "the existence of a digital divide among EFL University students will affect their academic achievement to some extent".

This study consisted of two main chapters to handle the matter at hand; the overall research work was divided into two main parts. The first chapter was an overview of the literature related to the research topic. It spotted light on the main concepts that the present research revolves around. The first section of the chapter was devoted to tackle the issue of digital divide whereas the second section dealt with academic achievement. As far as the second chapter is concerned, it was devoted to the fieldwork of the study.

After analysing and interpreting the data and bearing in mind the research questions which are:

1. Does the digital divide really exist and how is it related to academic achievement?

2. What are teachers' and students' perceptions about the impact of the digital divide on academic achievement?

3. To what extent academic achievement is affected by the digital divide?

4. How can the issue of digital divide be reduced?

It was found that though EFL university students do all have ICTs; they neither have access to all the various tools especially personal computers nor have stable/high-speed internet connection. Moreover, it was clearly noticed that they lack the needed digital skills to use the information communication technologies they have. Therefore, their academic achievement is affected to some extent since they were asked to prepare assignments and attend online classes, using ICT tools which not all students can use, that are all taken into account in their final marks. Furthermore, the sustainable majority of both students and teachers seem to hold negative perceptions about the impact of the digital divide on academic achievement. i.e., the digital divide has a negative impact on students' academic achievement. Lastly, the findings revealed that the issue of digital divide that does exist among EFL university students can be narrowed by taking some serious measures and initiatives.

The results confirmed the hypothesis of the present study, which is "If there is a digital divide among EFL University students, their academic achievements will be affected to some extent".

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Appendix A

Students Questionnaire

Dear students,

You are kindly requested to fill in this questionnaire which is designed to collect information needed for a research work on digital divide among EFL university students and its impact on their academic achievement. We would be so grateful if you could answer the questions by ticking (√) in the corresponding box and providing full statements when necessary.

Thank you in advance.

Digital Divide (الثغرة الرقمية):

the Organisation for Economic Co-Operation and Development (OECD) (2001) defined the digital divide as "the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the internet for a wide variety of activities" (p. 5).

-ICTs: Information Communication Technologies

Section One: Digital Access

Q1. Gender: a) Male ☐ b) Female ☐

Q2. Age: a) 17-24 ☐ 25-64 ☐

Q3. Do you live in an urban area (city) ☐ or a rural area (countryside) ? ☐

Q4. Do you have access to information communication technologies (ICTs: computers, cell phones, internet, etc.? a) Yes ☐ b) No ☐

Q5. If yes, what kind of ICTs do you have access to?

a) Cell phones ☐ b) Computers ☐ c) Internet ☐

- Others:

…….

Q6. Do you use**:** a) Mobile (Cellular) data ☐ b) Wi-Fi ☐ c) Both ☐

Q7. How would you describe your internet connectivity?

a) Fast ☐ b) average ☐ c) slow ☐ d) no access ☐

Q8. Do you think that people living in rural and isolated areas have limited access to ICTs?

a) Yes ☐ b) No ☐

Q9. Do you think that families with low- income can afford ICT tools to their children?

a) Yes ☐ b) No ☐

Q10. Do you use ICT tools for educational purposes?

a) Yes ☐ b) No ☐

Section Two: Digital Skills

Q11. Do you think you have sufficient skills for using ICTs effectively?

a) Yes ☐ b) No ☐

Q12. How would you rate your level of skills in using ICTs (i.e., Digital Literacy)?

a) Beginner ☐ b) Basic skills ☐ c) Intermediate ☐

d) Competent ☐ e) Advanced ☐

Q13. What kind of digital skills do you have?

a) Communicating ☐

b) Information processing ☐

c) Data entry ☐

d) Emailing ☐

Q14. Do you think that the lack of digital skills influences ICT use?

a) Yes ☐ b) No ☐

- Explain how?

……

……

Section Three: Academic Achievement and Digital Divide

Q15. As a student, how would you describe your level in English?

a) Very good ☐ b) Good ☐ c) Intermediate ☐ d) Bad ☐

Q16. According to you, what may influence your academic achievement?

a) Motivation ☐ b) Family support ☐

c) Learning facilities (Internet, cell phones, libraries…etc). ☐

d) School facilities ☐ e) Socio-economic status ☐

Q17. According to you, what can help students boost their academic achievement?

a) Using ICTs to study, do research… ☐

b) Asking Questions during and after classes ☐

c) Taking responsibility for their own learning ☐

d) Connecting with classmates and teachers ☐

Q18. How often do you use ICTs for educational purposes (doing homework, preparing assignments…etc?

a) Always ☐ b) Sometimes ☐ c) Rarely ☐ d) Never ☐

Q19. Do your teachers ask you to do homework, projects and assignments on a regular basis?

a) Yes ☐ b) No ☐

Q20. Do the preparation and the submission of those assignments require the use of ICTs?

A) Yes ☐ b) No ☐

Q21. Are you required to undertake online quizzes/ tests?

a) Yes ☐ b) No ☐

Q22. Is there a digital divide at your university?

a) Yes ☐ b) No ☐

Q23. Does the digital divide have any impact on your academic achievement?

a) Yes ☐ b) To some extent ☐ c) No ☐

Section Four: Bridging Digital Divide

Q24. Can the problem of digital divide be solved?

a) Yes ☐ b) No ☐

Q25. Rate your agreement with the following statements:

SA: Strongly Agree A: Agree D: Disagree SD: Strongly Disagree

Statements	**SA**	**A**	**D**	**SD**
a)The Ministry of Education is able to realize digital equity (equal access to ICTs) and narrow the digital gap among all students.				
a) Infrastructures should be within the reach of the university community.				
b) Libraries can reduce the digital gap among students by providing free access to the different technologies (computers, e-books…)				
c) There should be collaboration between governments and donors to narrow the digital gap.				
d) Universities should provide free equipped training centers for both students and teachers to foster digital literacy.				
e) Teachers have to encourage group work inside and outside the class as an initiative to bridge the digital gap in universities.				

Appendix B

Teachers Interview

The use of modern technologies has become a distinct feature of everyone's life. These technologies led to several changes in many fields including education. With the spread of COVID19 pandemic, multiple approaches such as "Blended learning" and "Distance learning", which require the use of information communication technologies, has gradually introduced to the field of education. While many teachers and students can use these technologies and benefit from the opportunities they provide, others have limited or even no access to the various ICT tools including cell phones, computers, digital dictionaries, e-books and Internet etc. This disparity among individuals is referred to as the digital divide.

1. The use of technology facilitates the learning and the teaching process. Do you use ICTs in your EFL teaching? Is it at the university level or at home?

- Do you use any of these in your teaching? Online apps, digital dictionaries, E-learning blogs, social media groups, language translators, language applications…

2. "COVID19" and the new demands of learning paved the way for a set of new approaches (e.g., blended learning, distance learning and hybrid learning). The implementation of such approaches requires certain digital skills. Do you think you possess sufficient digital skills to implement the new trends to teaching and learning?

3. What teaching activities and practices do you use and which require the use of ICTs (discussion groups, email-guidance, online tutoring, online assessment…)?

4. For a successful online session, all participants (teachers and students) should have access to ICTs. Do you think that all of your students are able to attend online classes? Do they have the required skills to do so?

5. Assignments are one of the distinct ways to evaluate students. Do you ask your students to do assignments and projects…? How often you do so?

6. Do the preparation and the submission of those assignments require the use of ICT tools?

- Are the assignments graded? (Taken into consideration in the final mark?)

7. In your department, do students undertake online or distance tests/ quizzes/ exams?

8. If we take the students' achievement into consideration, when do students achieve better results? (In online tests or paper-based tests?)

9. Online tools, methods and platforms are supposed to create opportunities for the many not just the few. Do you think that the absence of these ICTs together with the technical issues students may face may affect their language learning and thus their achievement?

10. The world witnessed the widespread of the "digital divide" phenomenon especially in developing countries. According to you, what are the main factors that contribute to the digital divide

11. As an EFL teacher, what would you suggest to overcome the issue of digital divide among EFL university students in order to enhance their language learning achievement?

الملخص

في عصرنا الحالي، لم يعد المرء بحاجة للذهاب إلى أبعد من منزله لرؤية واستخدام أشكال مختلفة من تكنولوجيا المعلومات والاتصالات (الهواتف المحمولة، أجهزة الكمبيوتر، الإنترنت وغيرها) فقد غزت هذه الأخيرة جميع قطاعات الحياة بما في ذلك قطاع التعليم. فمن خلال إدراج استخدام تكنولوجيا المعلومات والاتصالات في التعليم، أصبح بالإمكان أن يحدث التعلم في أي وقت وفي أي مكان، خاصة عندما أدت جائحة كورونا (Covid-19) إلى إغلاق المدارس في جميع بقاع العالم. غير أن إدماج تكنولوجيات المعلومات والاتصالات في التعليم لا يخلو من العواقب؛ فالعديد من الطلاب يواجهون عراقيل وتحديات عدة فيما يتعلق بالوصول إلى هذه التقنيات واستخدامها وهذا ما خلق ما يسمى «الفجوة الرقمية». لذلك فقد هدفت هذه الدراسة إلى تحليل مدى تأثير الفجوة الرقمية على متمدرسي اللغة الانجليزية كلغة أجنبية في جامعة محمد صديق بن يحيى، جيجل وعلى تحصيلهم الأكاديمي انطلاقا من الفرضية القائلة: "إن الفجوة الرقمية بين متمدرسي اللغة الانجليزية تؤثر على تحصيلهم الأكاديمي لحد ما". ولقد تم استخدام أداتي بحث للوصول للغاية المنشودة: استبيان للطلاب ومقابلة مع الاساتذة. أولاً، تم توزيع الاستبيان على عينة متكونة من 150 طالبًا من مختلف مستويات الدراسة. ثانيًا، أجريت المقابلة مع ثمانية اساتذة للغة الانجليزية كلغة أجنبية. وقد كشفت النتائج أن هناك بالفعل "فجوة رقمية" بين طلاب الجامعة بشكل أساسي على مستوى «الولوج» و«استخدام» تكنولوجيا المعلومات والاتصالات مما أثر على تحصيلهم الأكاديمي إلى حد ما. على ضوء النتائج، تم اقتراح بعض الحلول لمعالجة التفاوتات الحالية.

الكلمات المفتاحية: تكنولوجيا المعلومات والاتصالات، الفجوة الرقمية، التحصيل الأكاديمي.

Résumé

Aujourd'hui, il n'est pas nécessaire d'aller plus loin que chez soi pour voir et utiliser les différentes formes de Technologie Information Communication (téléphones portables, ordinateurs, internet…). Les TIC ont envahi tous les secteurs de la vie, y compris l'éducation. Grâce à l'utilisation des TIC dans l'éducation, l'apprentissage peut avoir lieu n'importe quand et n'importe où, surtout en période difficile où Coronavirus a entraîné la fermeture d'écoles dans le monde entier. Pourtant, l'intégration des TIC dans l'éducation n'est pas sans problèmes ; les étudiants rencontrent de nombreux obstacles et défis en ce qui concerne l'accès et l'utilisation de ces technologies, ce qui crée ce qu'on appelle le « fossé numérique ». Par conséquent, cette étude vise à analyser la fracture numérique parmi les étudiants de l'anglais comme langue étrangère et s'est écarté de cette hypothèse : « l'existence d'un fossé numérique entre les étudiants de l'anglais comme langue étrangère à l'Université de Mohammed Seddik Ben Yahia, Jijel affecte leurs résultats scolaires une certaine mesure ». Pour atteindre l'objectif souligné, les chercheurs ont utilisé deux instruments : un questionnaire des étudiants et un entretien avec les enseignants. Premièrement, le questionnaire a été administré à 150 étudiants de différents niveaux d'études. Deuxièmement, l'entrevue a été menée auprès de huit enseignants de l'anglais comme langue étrangère. Les résultats finaux ont révélé qu'il existe vraiment un « fossé numérique » entre les étudiants universitaires, principalement au niveau de l' « accès » et de « l'utilisation » des TIC, ce qui a eu une incidence sur leurs résultats scolaires dans une certaine mesure. À la lumière des résultats, certaines solutions ont été proposées pour remédier aux disparités existantes.

Mots clés : TIC, Fossé numérique, Réussite scolaire.