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Digital Technologies and Digital Literacy in Tertiary EFL Writing Instruction: A Case Study of EFL Teachers and Third Year EFL Students at M'sila University

Thesis Submitted to the Department of English in Fulfilment of the Degree of Doctorate in Sciences: Didactics of English as a Foreign Language.

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Mrs. HAMOUMA Chahrazad
Date: 19/11/2023

Dedication

To my dear parents,

To my husband,

To my little boys: Mohamed Abd Essamed & Omar Youcef,

To my brothers and sisters,

To all my friends

Acknowledgments

The completion of this thesis would not have been possible without the assistance and encouragement of several people. First and foremost, I would like to express my heartfelt gratitude and sincere appreciation to my supervisor Dr. Nadia MENEZLA for her competent guidance and constant support throughout the thesis writing process. This project could not have been accomplished without her insightful observations, cooperation and patience.

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Abstract

In the modern era, digital technology and digital literacy have become major components of English as a Foreign Language (EFL) teaching, including EFL writing context. This study aims to investigate the impact of digital technology integration in enhancing third year EFL students' writing performance and to determine the extent to which their digital literacy proficiency supports the development of their writing skills. Additionally, the study attempts to examine the level of digital literacy competence among EFL teachers and students, teachers' attitudes towards the use of technology tools in EFL writing instruction, and the current status of technology integration in EFL writing class. Quasi-experimental research design was used with a mixed-methods approach to collect data from one hundred fifty (150) EFL third year students and forty (40) EFL instructors at the English department of M'sila University. Thirty five (35) students participated in each of the control and experimental groups. The control group were taught the writing course utilizing the traditional teaching method, while the experimental group received technology-enhanced instruction. Quantitative data included survey responses from eighty (80) students and forty (40) instructors, eighty (80) papers of a writing test related to students' perceived level of digital competence, and seventy (70) pre- and post-test papers. Qualitative data included students' responses to the open-ended questionnaire and interviews with five (05) teacher participants. The quantitative data were analyzed using descriptive and inferential statistics, while the qualitative data were evaluated using content analysis method. The study findings revealed that EFL teachers had a high level of digital literacy, although they were more proficient with fundamental technologies than with advanced ones. EFL students had an unsatisfactory level of digital literacy; they were proficient with social networking but lacked expertise with sophisticated technologies. The findings indicated that despite EFL teachers' positive attitudes towards new technologies, the adoption of technology in EFL writing instruction remained restricted. The majority of EFL teachers utilized technology for low-level tasks rather than high-level tasks. This limited utilization of technology in EFL writing instruction was attributed to a variety of contextual variables. Additionally, the study findings supported the research hypotheses, indicating that there is a statistically significant relationship between digital literacy proficiency and EFL writing skills, and that digital technology integration has a positive impact on the development of EFL students' writing performance. Based on these findings, relevant implications and suggestions were proposed, including the appropriate integration of technology tools in EFL writing courses, the improvement of digital literacy skills among EFL teachers and students, the provision of technology resources, the recognition of digital literacy's potential for enhancing writing abilities, and the comprehension of teachers' attitudes towards technology-enhanced writing instruction.

Keywords: Digital literacy; digital technology; EFL students; EFL teachers; writing skills.

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List of Abbreviations and Acronyms

AWR	Analytic Writing Rubric
BECTA	British Educational Communications and Technology Agency
CALL	Computer-Assisted Language Learning
CAS	Computer Attitude Scale
CMC	Computer-Mediated Communication
EAP	English for academic purposes
EFL	English as a Foreign Language
ELT	English Language Teaching
ESL	English as Second Language
ESP	English for specific purposes
FL	Foreign Language
ICT	Information and Communication Technology
ISTE	International Society for Technology in Education
IT	Information Technology
ITC	Item-Total Correlation
IWB	Interactive Whiteboard
JISC	Joint Information Systems Committee
L1	First Language
L2	Second Language
LMS	Learning Management System
SNS	Social Networking Sites
SPSS	Statistical Package for the Social Sciences
SWODL	Survey of Web-Oriented Digital Literacy
TELL	Technology-Enhanced Language Learning
TPCK	Technological Pedagogical Content Knowledge
UNESCO	United Nations Organization for Education, Science and Culture
ZPD	Zone of Proximal Development

GENERAL INTRODUCTION

This introductory part provides a background for the study by presenting the current state of knowledge on the viability of digital technology and digital literacy in EFL writing instruction and by examining the most prominent studies conducted about the research issues. In addition, it describes the research problem, which led to the formulation of research questions and hypotheses, as well as the study's objectives, significance, and organizational structure.

1. Background of the Study

Writing is usually recognized as the most important aspect of EFL proficiency because it helps students to engage in effective communications in the real world (Rao, 2007; Richards & Renandya, 2002). EFL students must grasp not only the language, but also the techniques of writing skills in order to present their academic and professional works on a global stage, thereby enhancing their competitiveness in the modern workforce (Craig, 2012). According to Melouk and Merbouh (2014), writing is a complex activity that requires ample time to reflect on a topic, examine relevant research, and organize one's thoughts. EFL students who are taught to write effectively can better grasp the language, think critically about it, and convey their thoughts coherently. By contrast, those who are deficient in this area may experience academic problems or possibly fail the writing courses (Rao, 2007). In this respect, a large number of studies have indicated that the use of technology resources available in the modern age is an efficient strategy to help students improve their EFL writing skills, especially given the fact that today's students are more likely to have grown up with digital technologies than with notes and books (Azmi, 2017; Craig, 2012; Godwin-Jones, 2003; Goldberg, Russell, & Cook, 2003).

It is highlighted that the utilization of digital tools, such as blogs, wikis, interactive whiteboards (IWBs), and PowerPoint presentations, has been a tremendous benefit for EFL writing classrooms

(Chao & Huang, 2007; Godwin-Jones, 2008; Miyazoe & Anderson, 2010; Richardson, 2010). The increasing advancement of digital technology has drastically transformed the methods of EFL writing instruction and the mechanisms by which students develop academic writing abilities (Azmi, 2017; Craig, 2012). It promotes the use of authentic language learning materials (Craig, 2012; Warschauer & Kern, 2000), interactive multimedia resources (Elola & Oskoz, 2017; Zhang & Barber, 2008), and collaborative writing tasks in online spaces (Burbules, 2006). It prompts EFL teachers to embrace new pedagogical approaches, techniques, tools, materials, and equipment to suit the needs of their learners as digital natives (Hampel, 2006). Additionally, the use of technology in EFL writing classes offers a stimulating, creative, and learner-centered environment that affects EFL teachers' and students' attitudes, beliefs, and behaviors (Chen, 2016; Craig, 2012; Peterson, 2012).

According to an extensive body of research, the successful adoption of technology in the EFL writing program has enormous potential for the development of students' writing skills (e.g., Adas & Bakir, 2013; Ahmed, 2016; Chen, 2016; Godwin-Jones, 2008; Miyazoe & Anderson, 2010; Thorne, 2005). It enables EFL students to practice situated writing in and outside of classroom settings, access a plethora of web-based knowledge, engage in a variety of instructional writing tasks and exercises, and interact with teachers, peers, or native English speakers from around the world (Godwin-Jones, 2008; Miyazoe & Anderson, 2010; Sykes, Oskoz, & Thorne, 2008). As a result of their ongoing exposure to authentic input and practice of online writing in a variety of contexts, EFL students' writing performance increases and they develop into more independent English learners (Chen, 2016).

The use of Web 2.0 tools such as blogs and wikis in EFL writing course promotes the development of writing performance by transforming students from passive learners to active and productive participants in online assignments and discussions (Godwin-Jones, 2008; Miyazoe &

Anderson, 2010). They enhance the conventional instructional practices by shifting the teacher's role from a controller to a guider and facilitator, therefore allowing students to work more autonomously in web-based writing environments (Kessler, 2009; Warschauer & Kern, 2000). Moreover, they provide students with prompt and precise feedback, which might motivate them to improve their writing performance (Chen, 2016; Pavlenko & Lantolf, 2000).

Several studies have revealed that the use of digital technologies in EFL writing classroom has positive effects on students' perceptions and attitudes (Adas & Bakir, 2013; Ahmed 2016; Chuo, 2007; Özdemir & Aydın, 2015). Due to the ways in which it improves communication and collaboration among students and classroom members as a whole, technology creates a low-anxiety environment where EFL students can engage in meaningful writing contexts (Elola & Oskoz, 2017; Pavlenko & Lantolf, 2000). In addition, it offers a variety of features that accommodate the different learning styles and interests of students and encourage them to take responsibility for their own learning (Azmi, 2017; Borden, 2011; Thorne & Payne, 2005).

Given the increasing use of digital technologies in tertiary contexts, digital literacy; which is considered as a requirement for life in the twenty-first century, becomes an essential competency in all educational fields (Hague & Payton, 2010; Sharpe & Beetham, 2010). It comprises the ability to access, organize, interpret, evaluate, use and produce web information in order to function effectively in a knowledge society (European Commission, 2007). This suggests that both instructors and students need to be digitally literate to meet the academic standards of the contemporary world. They must develop their ability to use technology resources to locate, analyze, and assess information, as well as their capacity to engage meaningfully in online environments (Barell, 2010; Lent, 2012; Trilling & Fadel, 2009; Warschauer & Matuchniak, 2010). To achieve this, they should exhibit a variety of skills, including critical thinking, decision-making, problem-solving, and creativity (Hague & Payton, 2010; Warschauer, 2008).

In recent years, research in the fields of digital literacy and EFL language proficiency has demonstrated that they mutually reinforce one another (De Bot & Stoessel, 2002; Hafner, 2015; Mudra, 2020; Wei, 2000). It has been increasingly evident that a high level of digital literacy competence is fundamentally beneficial for language learning. Digitally literate students are better equipped to learn English writing skills, as argued by McLoughlin (2011), since they can access information, do research, read and produce digital material, make proper decisions, and apply logic to their studies. Thus, digital literacy makes English usage more significant, empowering, fascinating, and natural for students. According to Hafner (2014), digitally savvy students can adapt their register, style, and discourse identity to their intended audience more effectively. They can utilize multiple language forms and multimedia modalities, such as pictures and sounds, based on their assumptions of their relationship to the target audience. This indicates that learning to read and write digitally facilitates the development of English academic skills and discourse identities (Warschauer, 2011).

Many studies have shown that learners with a greater level of digital literacy generate a higher quality and quantity of English writing (Caws, 2006; Elola & Oskoz, 2017; Hafner, 2015; Mudra, 2020; Warschauer & Ware, 2006). This is due to the fact that having the essential skills to use critically new technologies improves learners' motivation and autonomy, facilitates access to learning resources, allows for meaningful discussions with authentic audiences, and offers opportunities for producing and editing online written works (Murray & Hourigan, 2006; Warschauer, 2011).

Since the rise of digital literacy concept, various studies have demonstrated that there is a digital divide between students' and teachers' technological competency (Levin & Arafah, 2002; Oblinger & Oblinger, 2005; Prensky 2001). According to Prensky (2001), students who are known as digital natives have a greater familiarity with technology tools. On the other hand, teachers, who

are considered digital immigrants, need to acquire the knowledge and skills necessary to utilize digital technology effectively in the classroom. To be innovative educators in the twenty first century and to help end the digital divide, teachers must develop their understanding on how to incorporate technology resources appropriately into the curriculum (Mishra & Koehler, 2006).

EFL teachers are required to improve their digital literacy proficiency in order to engage students in the learning process and foster the development of their academic and linguistic skills (Ertmer, 2005; Kim, 2002; Knobel, 2011). This new generation of students; who has grown up with continual access to digital technologies, place high demands on educational institutions to provide technology-based learning environments, and on teachers to comprehend how to effectively incorporate digital tools in classrooms (Oblinger & Oblinger, 2005). Therefore, EFL teachers must be adept with digital technology and have a critical understanding on how to adequately use advanced technology in EFL writing instruction (Lee, 2000).

Due to the vital role that digital literacy and digital technology occupy in educational environments, the Algerian government has taken a number of initiatives to incorporate digital technologies into higher education. It has launched a wide range of projects, some of which include an initiative by the Ministry of Education to provide technological infrastructure for all the educational institutions by the year 2005, as well as distance education initiatives, virtual university, the research network, and other similar projects (Hamdy, 2007). These programs sought to increase access to computer technologies in tertiary environment, enhance technology integration across all subject areas, and support the development of instructors' technological skills.

Although the Algerian government is increasingly promoting the use of technology into higher education settings, there is still a low adoption of digital technology in EFL writing instruction. This indicates that the government's initiatives may not always affect teaching approaches and lead

to innovative changes in learning environments. Several concerns regarding digital technology incorporation, such as applicability, effectiveness, and digital expertise have started to receive significant pedagogical attention in recent years. However, there are few studies conducted about the viability of digital literacy proficiency and technology integration in EFL writing classroom. In light of this, it is crucial to investigate the current state of technology integration in EFL writing instruction, the actual level of digital literacy competency among EFL teachers and students, and the efficacy of technology integration and digital skills in fostering EFL students' writing development.

2. Statement of the Problem

Despite all the evident advantages of digital literacy skills and technology integration in educational environments, various studies have revealed that the learning potential of technologies is not being completely exploited in EFL writing contexts. There is a growing emphasis in the literature for systematic research on digital literacy practices and technology adoption in tertiary EFL writing contexts. Empirical research on computer-based technologies is much needed to enhance the existing body of literature and better understand how digital skills and technology incorporation are affecting learning opportunities in EFL writing classroom. Therefore, it is essential to comprehend how digital skills and the use of technology resources support the development of writing performance among EFL students. It is also crucial to investigate teachers' and students' access and use of new technologies in EFL writing classroom, and examine if a digital divide, which would separate individuals into two groups: digital natives or digital immigrants, exists within the study participants.

3. Research Questions and Hypotheses

In light of the problem stated above, this study addresses the following research questions:

1. How do EFL teachers and students evaluate their levels of digital literacy competence?
2. What are the attitudes of EFL teachers towards digital technology integration in EFL writing instruction?
3. To what extent do EFL teachers integrate digital technologies in EFL writing instruction?
4. How does EFL students' digital literacy competence affect their academic writing development? In other words, is there any relationship between EFL students' digital literacy proficiency and their academic writing performance?
5. What is the impact of digital technology integration on EFL students' writing performance?

Based on the above-addressed questions, the current study attempts to assess the following hypotheses:

H1: There is a statistically significant relationship between EFL students' digital literacy proficiency and their academic writing performance.

H2: Digital technology integration has a positive impact on the writing performance of EFL students.

4. Research Objectives

This research is conducted to evaluate the potential of digital technologies and digital literacy for the learning and teaching of EFL writing skills. It attempts to assess teachers' and students' digital literacy competencies, analyze their beliefs and attitudes towards technology integration in EFL writing classrooms, and examine the current status of technology integration in EFL writing instruction. The major objective of this study is to investigate the relationship between EFL

students' digital literacy proficiency and their EFL writing abilities, as well as the influence of technology integration on the enhancement of EFL students' writing achievements.

5. Methodology

This study utilized a quasi-experimental research design with a mixed-methods approach to collect and analyze quantitative and qualitative data from a sample of forty EFL teachers and one hundred fifty third year EFL students at the English Language Department of M'sila University. The quantitative methods employed in this study included writing tests and survey questionnaires, while the qualitative methods consisted of semi-structured interviews and open-ended questions. The use of the mixed methods approach provided relevant information on the research inquiry from two different perspectives, allowing for a more comprehensive analysis than designs based on the use of either a quantitative or qualitative approach. This design allowed the researcher to evaluate instances of agreement and disagreement between the two types of data; hence, triangulation could be achieved in this study by integrating different data findings. Descriptive and inferential statistics were used to analyze the quantitative data, and content analysis was used to assess the qualitative data.

6. Significance of the Study

The significance of this study rests in the fact that it focuses on crucial research questions that demand investigation in EFL writing context. A great deal of research on digital technology and digital expertise in writing instruction has been published in the United States, Australia, the United Kingdom, and Western Europe; however, a limited number of studies have been conducted in Algeria regarding the subject matter. Few studies had examined the relationship between EFL students' levels of digital literacy and their actual proficiency in writing skills. The lack of

comparable research on digital technology and digital literacy in the Algerian tertiary EFL writing context brings this study to the forefront.

Additionally, this research is significant because it allows EFL teachers and students to voice their perspectives and concerns about their digital skills and uses of technology in EFL writing instruction. The research participants may personally benefit from the study by evaluating their technology expertise and reflecting on their digital practices in web-based writing environments. They may identify digital weakness areas to which they need to make improvements for an optimal applicability of digital technology in EFL writing classroom.

Hopefully, the findings of this study will help educators, policy makers and curriculum designers gain a better understanding of the current status of digital technology and digital literacy proficiency in EFL writing instruction, find efficient ways to promote the use of technology tools in EFL writing classrooms, and open up new opportunities for enhancing EFL students and teachers' digital competencies. Although this is a case study with no intended generalizations, the findings of this research may serve as a useful source of reference for future studies on digital technology integration and digital literacy in other similar EFL writing contexts.

7. Thesis Structure

The structure of this thesis paper is as follows:

The general introduction provides the context of the study and describes the research problem, research questions, hypotheses, objectives, significance of the study, and the organizational structure of the thesis.

The first chapter of literature review provides an overview of research literature on digital literacy and technology integration in EFL writing instruction and discusses how they enhance the learning and teaching of EFL writing skills in tertiary contexts. In addition, it examines studies on

EFL writing instruction utilizing Web 2.0 technologies, such as blogs and wikis, and offers an overview of the most prominent approaches to teaching writing. This chapter concludes with a discussion of the major learning theories that support technology integration and digital literacy development in EFL learning contexts.

Chapter two related to research methodology presents the research methods, data collection procedures, and analysis methods utilized in this study. It starts with a review and justification of the research design chosen for this study, and then provides a description of the study participants, and the research methods comprised of survey questionnaires, semi-structured interviews, and writing test scores. Also, it outlines the study experiment, data collection procedure, and analysis methods. The chapter ends with a review of the piloted research tools and a discussion of the ethical considerations underlying this study.

Chapter three of results and analysis presents the quantitative and qualitative findings of the study. It provides results related to the levels of digital literacy proficiency among EFL teachers and students, perspectives on digital technology integration in EFL writing instruction, the current status of digital technology incorporation in EFL writing classrooms, the relationship between EFL students' digital literacy proficiency and their actual writing performance, and the impact of technology integration on the development of EFL writing skills. This chapter compares and contrasts findings obtained from different instruments to provide an in-depth analysis of the research issues.

Chapter four provides the discussion and implications of the study. The first section of the chapter provides interpretation on the following research inquiries: digital literacy skills of EFL teachers and students, teachers' views and uses of digital technologies in EFL writing instruction, the learning potential of digital literacy proficiency in EFL writing classroom, and the impact of Web 2.0 technologies on enhancing EFL students' writing performance. The second section of this

chapter proposes implications for the appropriate use of digital literacies and digital technology in EFL writing contexts.

The general conclusion summarizes the major findings of the study, outlines the study's limitations, and proposes recommendations for further research.

CHAPTER ONE: LITERATURE REVIEW

Introduction

The purpose of this chapter is to examine the literature relevant to the study focus. Since the focus of this study is on digital technologies and digital literacy in tertiary EFL writing instruction, the review of literature starts with an overview of all the issues related to digital technology integration in EFL writing instruction, followed by a conceptualization of digital literacy to show how it can support the learning and teaching of EFL writing in tertiary pedagogical settings. Afterwards, a background on the main teaching approaches to writing skills is provided. Then, research literature pertinent to the incorporation of interactive Web 2.0 tools such as blogs and wikis in EFL writing instruction is presented. The final section discusses the main learning theories that support technology integration and digital literacy development in EFL learning contexts.

1.1 Digital Technologies

Digital technologies have become a necessary instrument to achieve social, economic and educational goals. Recently, students and teachers consider new technologies as an integral part of their life which they can easily utilize for accessing educational resources, finding online information, exploring encyclopedia and doing research (Barnes, 2003; Jonassen et al., 2003; Thorne & Payne, 2005). Thus, it is necessary for EFL teachers to make a good use of new technologies in their classrooms in order to prepare their students for the future in the best possible way. This section presents key concepts related to digital technologies, it discusses as well the role of advanced technology in enhancing EFL instruction, its efficiency in improving the learning of EFL writing skills and the main barriers that hinder its effective incorporation in EFL writing contexts.

1.1.1 Conceptualization of Digital Technologies

Nowadays, digital technologies have affected all the life sectors including economics, politics, communication and education. They are claimed to have great potential in reshaping the nature of each life sector (Bates, 2005). With respect to educational fields, digital technologies are assumed to affect peoples' learning and teaching styles, they can provide a new way of perceiving information and “trigger a different kind of relationship between the teachers, the learners, and what is being learned” (Laurillard, 2013, p. xvi). In the last decade, several concepts related to digital technologies have emerged such as Computer-Assisted Language Learning (CALL), Computer-Mediated Communication (CMC), Information and Communication Technology (ICT), Information Technology (IT), Learning Management System (LMS), e-learning, online learning, web-based instruction, computer-based instruction, technology-enhanced learning, virtual learning, educational technologies, multimedia learning, etc. (Garrison & Anderson, 2003). These concepts have been extensively examined by many scholars and researchers in a variety of educational settings.

Digital technologies are very wide in nature, they include a large set of hardware and software that can be used unlimitedly in different ways (Guri-Rosenblit, 2001). Lever-Duffy & McDonald (2011) defined digital technologies that are incorporated in educational fields as “any technology used by educators in the support of the teaching and learning process” (p. 5). According to Levy (2000), digital technologies that are used in the educational sector; commonly referred to as educational technologies, encompass a set of hardware and software that is used by individuals for multiple learning purposes. Examples of these technologies include computers, mobile devices, cameras, video recorders, interactive whiteboards, multimedia tools, Web 2.0 tools such as Blogs and Wikis, communication tools as Skype, Moodle and Email, and educational software such as

Adobe Reader, PowerPoint, Microsoft Word, etc. Such technologies help both students and teachers to achieve various educational objectives (Bates, 2005).

Digital technology integration is defined as the inclusion of technology-based tools to enhance the learning and teaching process in any educational area, where students can apply technology skills to learn meaningfully (Dockstader, 1999). Technology integration does not refer only to the utilization of technology-based resources in classrooms but also to the application of teachers' Technological and Pedagogical Content Knowledge (TPCK) to serve students' learning through critically creating, using and managing technology-related materials in pedagogical contexts (Pierson, 2001; Richey, 2008). According to Bitner and Bitner (2002), the effective technology integration depends on several factors such as the availability of digital resources, technical support, lesson designs and most importantly teachers' attitudes and skills. Teachers are actually regarded as the only individuals who play a vital role in determining the successful outcomes of technology integration in classrooms (Guri-Rosenblit, 2001).

The use of digital technologies bears a tremendous potential for education in general and for Foreign Language (FL) learning in particular. Lankshear, Snyder, and Green (2000) argued that digital technologies provide "authentic forms of social practice and meaning" (p. 45). This means that technology integration allows for communicative practices and authentic interactions among FL users. Nevertheless, researchers have maintained that achieving educational outcomes is not simply guaranteed through the application of technologies in classrooms. This is attributed to the fact that the use of technology does not have promising consequences in pedagogical settings, if it is not accompanied by an adequate integration, and if teachers do not recognize the importance and usefulness of new technologies in promoting learning performance (Bates, 2001; Cennamo, Ross, & Ertmer, 2010; Laurillard, 2013).

Bates (2001) strongly emphasized that new technology integration in higher education contexts complements the traditional methods of teaching instead of replacing them:

Computers are now commonly used for PowerPoint presentations to deliver lectures, and the Internet is now being used more and more to access Web sites to support lectures. Technology used this way does not replace either the teacher or the classroom. Using technology to supplement classroom teaching does not radically change teaching methods. It merely enhances what would be done in the classroom in any case. (p. 17)

Likewise, Hanna (2003); in a study conducted about the teaching models in higher education settings, concluded that digital technology does not ultimately change the traditional norms of learning and pedagogical practices of teaching. However, its application assists teachers to deliver some lectures and carry out some activities in an easier and better way. Additionally, Collis and van der Wende (2002) asserted that there is no radical change caused by the use of technology in universities and institutions. This is because teachers tend to be usually confined to the use of emails, Power Point, word processor and search engines in their instructions. Thus, they are merely engaged in a blended learning; a type of learning that is based on the use of both traditional teaching methods and technology-related resources (Dockstader, 1999).

1.1.2 Integration of Digital Technologies in EFL Instruction

Digital technologies have been widely applied in FL learning contexts for developing courses and supporting learning activities (Lever-Duffy & McDonald, 2011; Peterson, 2012). Their usage in FL instruction is defined as a process where “a learner uses a computer and, as a result, improves his or her [foreign] language” (Beatty, 2003, p. 7). Few years ago, there has been a widespread expectation that the integration of technology would transform the FL learning and teaching methods. It was believed that technology will make a ‘paradigm shift’ in FL instruction through enabling student-centered learning, allowing for authentic opportunities to develop language

learning, improving creativity, enhancing information analysis and promoting problem-solving skills (Harasim et al., 1995).

For this reason, most of the universities and institutions have strived for supporting foreign language pedagogy with a set of multiple technologies (Guri-Rosenblit, 2001; Thorne & Payne, 2005). In fact, the use of digital technologies for English Language Teaching (ELT) in higher education settings becomes a necessity, and universities that lag behind their integration are claimed to “be unable to meet the needs of knowledge based societies and as a result will not survive the change in paradigm of education” (O’neill, Singh, & O’donoghue, 2004, p. 320).

According to Thorne (2005), digital technologies are applied in EFL learning contexts for various purposes such as information retrieval from different resources; multi-media presentations; communication between teachers and learners; interactions among learners (both in or outside of classroom settings); drill-based practices; quizzes and tests; publishing and reading notice boards; classroom management, etc. Their application can also help in other areas such as cooperation among teachers, development of research communities and publication of academic works (Beatty, 2003; Caws, 2006).

Many studies have suggested that technology is a motivational tool which can increase EFL learners’ interest and engagement with the instructional process, and this will in turn contribute to enhance their language competence and overall learning performance (Azmi, 2017; Crook et al., 2010; Lankshear et al., 2000; Lightbown & Spada, 2006; Thorne, 2005). Peterson (2012) argued that the integration of digital technologies in EFL classrooms does not only increase learners’ motivation. Interestingly, these technologies can also enhance students’ language retention, as they offer students ample opportunities to practice English language comfortably and help them in reducing their level of anxiety; thus, lowering the “affective filter” that usually occurs in traditional learning classes (Krashen & Terrell, 1983; McLaughlin, 1990).

In addition, digital technology integration in EFL instruction is believed to foster communication and interaction (Azmi, 2017; Dowling, 2003). When technologies are used in EFL classrooms, students will be exposed to various authentic materials, engaged more in learning autonomy and provided with several opportunities to practice situated authentic interactions (Craig, 2012; Warschauer & Kern, 2000). Furthermore, the implementation of technologies in classroom settings enables EFL instructors to meet the learning needs of students and cater for the different types of learners, i.e. visual, auditory, kinesthetic and read-write learners (Borden, 2011). With technology, teachers can vary the presentation style of their lectures to satisfy the different interests of learners, they can also provide sufficient support and appropriate feedback according to students' individual differences (Azmi, 2017; Thorne & Payne, 2005).

Equally important, technology-enhanced learning assists EFL students to select what they want to learn and how they want to learn through using various digital resources (Craig, 2012; Hampel & Stickler, 2005). This indicates that they can control their own learning; consequently, the instructor's role changes from a classroom dominator to knowledge facilitator. Quite clearly, the student-centered approach which was highly emphasized during the 1970s and 1980s becomes more feasible with technology integration (Dockstader, 1999; Warschauer & Kern, 2000). Nowadays, EFL students can have access to infinite number of electronic resources. They no longer need to stick to the teachers' suggested textbooks, and can manage their learning process without involving teachers (Dowling, 2003; Fairman, 2004).

Apparently, the integration of technology in EFL instruction has consequences on the teacher, whose role significantly shifts from being a controller, knowledge holder and transmitter to become a facilitator, collaborator and motivator (Azmi, 2017; Fairman, 2004). In this respect, Prensky (2001) strongly highlighted that students of this digital age are no longer the ones "our educational system was designed to teach" (p.1). Therefore, he advised that the teachers' roles, teaching

curriculum and instructional methodology should be reconfigured to meet the learning needs of the current generation of students. This cannot be done without the integration of ICT into classroom practices which would promote FL learning potential and help students to find their multiple identities (Hampel & Stickler, 2005; Prensky, 2001; Thorne, 2005).

Overall, research literature supports immensely the integration of digital technologies in EFL instruction (Azmi, 2017; Cennamo et al., 2010; Chen, 2016; Bates, 2005; Lever-Duffy & McDonald, 2011; Peterson, 2012; Thorne, 2005; Sykes et al., 2008; Warschauer & Kern, 2000; Zhang & Barber, 2008), as these technologies have great potential in:

- 1) facilitating the understanding process through the use of multimedia tools that help in elaborating difficult concepts; for instance, utilizing concrete visual and auditory aids to explain abstract ideas.
- 2) improving learners' motivation, interest and cognitive performance.
- 3) enhancing communication and interactions; for example, the Web 2.0 tools as blogs and wikis can be used to facilitate interactions between instructors and students, between wide communities and among peers.
- 4) providing opportunities for contextualized learning through the use of digital resources that enable students to engage in authentic practices and benefit from formative feedback.
- 5) catering for the individual differences of learners through the use of various technological tools to prepare for lectures, simulations, quizzes, feedback, etc.
- 6) facilitating the academic research process by making it easier to collect and analyze different types of data such as primary and secondary data.
- 7) encouraging continuous learning out of classroom settings through the use of electronic devices for retrieving information from multiple web-resources.

Although digital technology integration in EFL instruction settings holds many benefits for the teaching and learning process, it should not be treated as a panacea that will solve all the educational problems, it should be rather viewed as an instructional aid that enhances the pedagogical practices and learning outcomes (Beatty, 2003; Pierson, 2001). In this regard, Davies (1997) asserted that “technology has to be treated as an aid and not as a panacea” (p. 29). This implies that some pedagogical issues such as learning objectives, course designs, teaching guidelines and strategies should be well planned for in order to ensure an effective adoption of technology in EFL learning contexts (Azmi, 2017; Craig, 2012). Additionally, Hampel (2006) argued that learners usually know how to utilize new technologies but may not know how to use them constructively for the sake of their learning. Therefore, he suggested that teachers should play a role in instructing students about how to use digital resources efficiently for the development of their English communicative competence.

A series of recent studies has advised that the maximum advantages of technology integration in EFL instruction can be gained if the following set of principles is applied (Bates, 2005; Bitner & Bitner 2002; Hampel, 2006; Hattie & Yates, 2013; Higgins, Xiao, & Katsipataki, 2012).

Firstly, teachers’ professional development of technology use ensures an effective integration of technology in classrooms. Therefore, some training programs about the adequate application of technology should be offered for instructors in order to improve the overall pedagogical practices and learning performance.

Secondly, the advantages were found to be higher when technology is used as an additional aid to supplement the traditional instruction rather than as a replacement.

Thirdly, technology should be utilized at a regular time. Its use for a very long period is proved to be less efficient for the learning development.

Fourthly, effects are stronger when the learner-centered approach is utilized in technology-enhanced instruction. This means that learners can control their own learning in some areas such as choosing the process and pace of learning a particular knowledge content.

Fifthly, there will be more benefits of technology integration if learners are given tutorial assistance or extra learning time. This would particularly help learners with low abilities or special needs.

Finally, collaborative work with technologies is better than individual work. However, some students may need assistance and training on how to make a collaborative use of technology.

1.1.3 Impact of Digital Technology Integration on EFL Writing Skills

Given that EFL writing skills are considered amongst the most essential skills for students to be competent in English language and academic research, scholars and educationalists have proposed the use of ICT in higher education settings for helping students become better writers (Azmi, 2017; Craig, 2012). Many research findings have revealed that the use of digital technologies in EFL writing curriculum results in positive outcomes of learning (e.g., Adas & Bakir, 2013; Ahmed, 2016; Caws, 2006; Chen, 2016; Chuo, 2007; Cunningham, 2000; Godwin-Jones, 2008; Miyazoe & Anderson, 2010; Murray & Hourigan, 2006; Peterson, 2012; Thorne, 2005; Warschauer, 1996). Most significantly, technology implementation allows EFL teachers to make an efficient use of different instructional tasks in order to improve students' writing performance (Hampel, 2006). It has been reported that the use of various multimodal teaching resources such as audio and visual-based forms enhances the overall comprehension of EFL writing skills (Elola & Oskoz, 2017; Zhang & Barber, 2008).

Moreover, it is assumed that technology-enhanced writing instruction has immense potential for increasing EFL students' motivation (Chen, 2016; Craig, 2012; Peterson, 2012). EFL Students

are reported to feel more motivated when using computers and mobile devices than when using the traditional method of pen and paper (Adas & Bakir, 2013; Ahmed, 2016; Chuo, 2007; Warschauer, 1996). For example, engaging students in web-based writing activities is a useful tool to foster their motivation. As students know that they are writing for real audience, they would exert more efforts in doing their written tasks and would pay much more attention to the accuracy of their language (Godwin-Jones, 2008; Meyer & Rose, 1998; Murray & Hourigan, 2006). Nevertheless, EFL teachers need to play a critical role in ensuring the effectiveness of technology-enhanced instruction through planning well for the web-based writing activities (Caws, 2006).

Another value that digital technology can bring to EFL writing instruction is the provision of opportunities for authentic written communication with native speakers (Burbules, 2006). It is quite known that chances for real communications are limited in the traditional based-EFL writing instruction as “FL classes in particular, due in good part to their isolation from ready contact with the focus language beyond the class setting, are often bounded contexts providing limited opportunities for committed and consequential communicative engagement” (Thorne, 2009, p. 85). Therefore, technology integration in EFL writing instruction is advantageous because it offers infinite opportunities for practicing authentic situated writing (Miyazoe & Anderson, 2010).

In addition, the feedback that EFL students receive from online readers will develop their writing performance and enhance their motivation in the overall learning process (Chen, 2016; Pavlenko & Lantolf, 2000). The scaffolding provided through feedback assists students to develop Vygotsky’s concept (1978) of the Zone of Proximal Development (ZPD), which refers to the distance between what learners can learn by their own and what they can learn with the assistance of others (Lightbown & Spada, 2006; Miyazoe & Anderson, 2010). As an illustration, the web-based writing activities offer EFL students a learning community where they can brainstorm ideas, share knowledge, compose texts, edit drafts and exchange feedback for developing their writing

skills (Godwin-Jones, 2008; Sykes et al., 2008). Therefore, instead of receiving traditional knowledge delivery from teachers, EFL students can be engaged in online collaborative writing communities that have stronger potential in building their situated-writing competence (Elola & Oskoz, 2017; Pavlenko & Lantolf, 2000).

In a study conducted about the effects of online collaborative writing interaction on the learning of writing, in which CMC tools were used to engage students in sessions of written text chatting, Peterson (2012) found that teachers and peers' online scaffolding has many benefits for the improvement of lexical and syntactical accuracy, organization of ideas and writing creativity. Likewise, several research studies which examined the effectiveness of digital technologies on enhancing students' writing development have concluded that the use of technology influences positively writing performance; therefore, these studies called for technology integration in EFL writing instruction as it creates a different student-centered learning environment where even shy and demotivated students can shine (Adas & Bakir, 2013; Ahmed 2016; Chuo, 2007; Özdemir & Aydın, 2015). In this respect, Craig (2012) pointed out that students are usually more mindful and motivated in virtual learning environments because they know that there is an audience out there viewing what they write.

In brief, the main advantages of digital technology integration in EFL writing instruction lie in its efficiency in providing safe and motivating learning environments where students can enjoy collaborative writing tasks, learn more about content areas, explore authentic materials, exchange experiences, practice situated writing and benefit from online feedback (Caws, 2006; Godwin-Jones, 2008; Thorne, 2005; Warschauer & Kern, 2000). Evidently, the use of new technologies in EFL writing instruction becomes a requirement in higher education context. The role of higher education policy makers is thus to provide technological equipment and technical support for EFL teachers, who should in turn ensure an effective integration of technologies in classrooms so that

learners can profit from the positive effects of Technology-Enhanced Language Learning (TELL) (Craig, 2012; Murray & Hourigan, 2006; Thorne, 2005).

1.1.4 Barriers to Digital Technology Integration

Despite the great value that new technology holds for the learning and teaching process, there is a limited and low integration of it in tertiary EFL classroom settings during the last two decades (Chen, 2008; Lee, 2000). Many studies have shown that the low integration of technologies is attributed to a set of reasons. It is widely reported in research literature that teachers never or rarely use technologies because they encounter a variety of barriers which include: (1) lack of digital resources, (2) lack of technical support, (3) negative attitudes towards technology integration (4) teachers' lack of digital competence, (5) teachers' workload, (6) insufficient time and (7) inadequate level of digital literacy among students (Bates, 2005; Ertmer, 1999; Hunter, 2001; Lee, 2000; Pedro, 2007; Pelgrum, 2001; Rahimi & Yadollahi, 2011). Factors impeding the effective adoption of advanced technologies in ELT contexts are discussed below.

To begin with, the major barrier that hinders digital technology adoption in EFL higher education settings is the lack of digital resources and technical support (Lee, 2000). According to Bates (2005), there is a lack of computers for teachers and students, shortage of technological resources, limited or no access to the Internet and outdated materials in many tertiary educational contexts. Moreover, there is insufficient technical support provided for university teachers (British Educational Communications and Technology Agency [Becta], 2004; Pedro, 2007; Williams, 2003). Teachers need professional development opportunities that aid in the development of their digital abilities, and provide them with the technical expertise to properly integrate innovative technology for educational objectives (Ertmer, 2005; Hunter, 2001).

Additionally, numerous study findings have suggested that teachers and administrative staff's negative attitudes towards ICT use in classrooms is another factor that can affect technology integration (Chen, 2008; El Aggoune & Ghaouar, 2019; Ertmer, 2005; Pelgrum, 2001; Zemsky & Massy, 2004). Although many teachers are provided with a variety of digital tools, some of them still prefer to teach using the traditional teacher-centered instruction (Gray, 2001). It is evident that; along with the availability of digital resources and technical support, the positive attitudes of the administrative staff and teachers towards TELL is another key factor for ensuring the success of technology integration in EFL instruction (Lee, 2000; Rahimi & Yadollahi, 2011). Therefore, Ertmer (2005) and Gray (2001) advised that the central issues of technology integration should be on teachers' beliefs and their involvements in the TELL process, rather than technology itself.

It is also important to note that some teachers have concerns about the use of digital resources in EFL writing instruction for the fear that academic writing skills can be negatively affected by the use of digital media and that the advanced new technology might be distracting in EFL writing classrooms (Warschauer & Kern, 2000). In this respect, Murray and Hourigan (2006) posited that these issues can be efficiently addressed in the educational curriculum. They suggested that online writing activities should mirror academic writing as much as possible to maximize the positive effects of digital resources, and highlighted that students' digital literacy skills should be developed to minimize the risk of technology distractions as a way to manage online learning environments.

Furthermore, other research studies have indicated that teachers' lack of digital competence is a critical contributor to the low integration of technologies (Becta, 2004; Chen, 2008; Ertmer, 1999; Hunter, 2001; Pelgrum, 2001; Trucano, 2005). According to Trucano (2005), teachers are usually competent in using digital technologies for searching and accessing web-information, planning lessons, presenting information and recording or saving files. However, they are generally claimed to be less digitally competent as compared to their students. The limited digital competence of

teachers influence their confidence, attitudes and reactions regarding the incorporation of new technologies in EFL instruction (Chen, 2008; Lee, 2000; Rahimi & Yadollahi, 2011).

Another factor that might affect the integration of digital technologies in tertiary EFL instruction is teachers' overwhelming workload (Rahimi & Yadollahi, 2011; Zemsky & Massy, 2004). Higher education instructors are actually required to undertake multiple pedagogical, academic, administrative and technical tasks. For instance, in many university contexts, teachers are supposed to have different roles such as lecturers, tutors, researchers, editors, course designers, teamwork collaborators, computer experts and others (Gray, 2001; Guri-Rosenblit, 2004; Williams, 2003). Wilson et al. (2004) strongly believed that digital technology integration in language learning requires teachers to undertake extra tasks such as preparing the online course design and digital instructional materials, managing online participation and collaboration, evaluating learning progress, offering feedback, creating safe and comfortable learning environment, assessing tests, troubleshooting and resolving technical problems, etc. Under those circumstances, teachers may have reservations about the involvement in the TELL process and instead prefer to deliver their courses using the traditional teaching methods (Rahimi & Yadollahi, 2011).

Equally important, the lack of time is another constraint that contributes to teachers' reluctance of technology integration in EFL classrooms (Bates, 2005). Many research findings have reported that teachers are reluctant to use TELL as it is time consuming (Becta, 2004; El Aggoune & Ghaouar, 2019; Ertmer, 2005; Pelgrum, 2001; Rahimi & Yadollahi, 2011). Unlike traditional face-to-face instruction, teaching online is a demanding endeavor which requires teachers to devote much of their time to prepare for the course materials (Williams, 2003). Therefore, teachers would usually prefer to use the familiar traditional face-to-face instruction because it is well-understood and less demanding (Chen, 2008; Zemsky & Massy, 2004). According to Guri-Rosenblit (2004),

university teachers claim that technology usage takes much of their time. Even responses to frequent students' emails might be a disruptive task for some teachers as it invades their own space. Therefore, quite often EFL teachers resist adopting digital technologies in their teaching practices.

An additional important impediment to the adoption of digital technologies in EFL learning settings relates to the inadequate level of digital literacy and digital divide among students (El Aggoune & Ghaouar, 2019; Hargittai, 2010; Kvavik, Caruso & Morgan, 2004; Lei, 2009; Pedro, 2007). This implies that there are disparities in students' digital skills and competencies of advanced technologies. Many students lack a satisfactory level of technical skills and do not have the ability to use certain digital tools, though they are assumed to be "digital natives" and masters of digital technologies (Hargittai, 2010; Lei, 2009). Research has indicated that most of the students are good at manipulating social networks, and that is not sufficient to learn efficiently in online environments (Lai & Gu, 2011; Trucano, 2005; Winke & Goertler, 2008). Quite clearly, such digital divide among students contributes to the low integration of digital technologies in classroom settings (Warschauer, 2008; Wenglinsky, 2005).

The above discussed barriers; which have been reiterated in most of the literature research on digital technology adoption in EFL learning contexts, indicate that the use of new technologies remains limited, despite their great and rapid development. Henceforth, it is recommended that tertiary educational institutions identify the types of barriers they encounter in order to provide effective solutions for them (Williams, 2003). Generally, there is a consensus in literature that overcoming challenging barriers does not lie in technology provision, rather it lies chiefly in providing teachers with professional training and support regarding the pedagogical uses of technologies so that they can successfully integrate them in classroom settings (Bates, 2005; Becta, 2004; Guri-Rosenblit, 2004; Lei, 2009; Vrasidas & Glass, 2005). Therefore, it is quite important

to develop teachers' digital literacy in order to maximize the potential of an effective integration of digital technologies in EFL writing instruction.

The following section discusses notions on digital literacy and reviews some perspectives on digital divide. Additionally, it examines the role of digital literacy in improving EFL learning and teaching practices as well as its effects on developing EFL writing skills.

1.2 Digital Literacy

As today's world is embracing the idea of lifelong learning through the use of digital technologies, digital literacy becomes a necessity for English language teachers and learners because it allows them to acquire various skills and capabilities across a range of learning opportunities (Hague & Payton, 2010; Sharpe & Beetham, 2010). This section firstly examines a number of concepts related to digital literacy, then it looks at some emerging issues that have been frequently associated with digital literacy such as digital divide, digital natives and digital immigrants. Afterwards, the section explores the interrelationships between digital literacy and EFL learning and teaching process, and provides a discussion of the main contributions of digital literacy to the improvement of EFL writing skills.

1.2.1 Conceptual Framework of Digital Literacy

Acknowledging that digital technologies have changed the way of doing business, communicating, studying and teaching, digital literacy becomes then a requirement for making a successful participation in all life aspects including society, workplace and education (Hague & Payton, 2010). Today's teachers and learners are expected to acquire some digital skills including searching and using web-information, critically evaluating web-data, managing computer software and applications, communicating online, using and managing different types of multimedia files such as visual and audio types (Warschauer, 2008).

Initial notions of digital literacy appeared with the development of internet and computers. In 1970, the term “information literacy” surfaced to refer to individuals’ ability of searching, assessing and using information. Afterwards, the concepts of technological literacy, online literacy and digital literacy emerged by the end of 1990 (Dhillon, 2007). In fact, the origins of the term digital literacy trace back to the scholar Paul Gilster (1997), but some other terms have been used as well by different scholars such as multiliteracies (The New London Group, 1996), information literacy or web literacy (Mackey & Ho, 2005), media and information literacy (United Nations Organization for Education, Science and Culture [UNESCO], 2008), and digital competence (Gutiérrez & Tyner, 2012).

Numerous definitions have been given to the concept of digital literacy. Gilster (1997) was the first scholar to define digital literacy as “the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers” (p.1). Gilster (1997) stated explicitly that digital literacy is about “mastering ideas, not keystrokes” (p.1), thus it involves using one’s critical thinking and problem solving skills in order to evaluate efficiently web-information.

Likewise, Buckingham (2006) concurred that digital literacy is not a matter of pointing and clicking, articulating that:

The skills that children need in relation to digital media are not confined to those of information retrieval. As with print, they also need to be able to evaluate and use information critically if they are to transform it into knowledge. This means asking questions about the sources of that information, the interests of its producers, and the ways in which it represents the world; and understanding how these technological developments are related to broader social, political and economic forces. (p.267)

Obviously, Buckingham (2006) viewed that digital literacy encompasses the skills which can support the appropriate usage of new technologies as well as the critical ability to search, evaluate,

discern, build and communicate digital knowledge in situated contexts. Martin (2008) supported Buckingham (2006)'s definition of digital literacy, emphasizing that digital literacy involves:

The awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process. (p.167)

In the same way to Gilster (1997) and Buckingham (2006), Martin (2008) argued that digital literacy does not refer to the technical knowledge and competent use of digital technologies, but rather to the critical and reflective use of technologies for constructive goals. This implies that digital literacy requires contextualization, it goes beyond the knowledge and mastery of new technologies usage to the involvement in complicated, non-linear, intellectual and social practices that enable individuals of living, learning and working in the digital age (Joint Information Systems Committee [JISC], 2014).

The UNESCO (2008) conceptual framework of digital literacy shared Martin (2008)'s indicators of digital literacy; accordingly, a digitally literate individual is the one who can

- a) be aware of what information is needed to resolve problems.
- b) find and critically evaluate web-information.
- c) retrieve and save information.
- d) use information efficiently, appropriately and ethically.
- e) construct and share knowledge in social communities.

According to Coiro et al. (2008), being digitally literate means having the competence to access, locate, assess and use various digital data that is available on the Internet. Digitally literate individuals; as noted by McLoughlin (2011), know how to select and use digital resources effectively, have a good grasp of digital information, display good critical thinking abilities and

benefit from the available digital technologies through using them in purposeful ways. Similarly, Hague and Payton (2010) asserted that digitally literate people have good critical thinking skills and knowledge on how to use digital technologies appropriately. According to them:

To be digitally literate is to have access to a broad range of practices and cultural resources that you are able to apply to digital tools. It is the ability to make and share meaning in different modes and formats; to create, collaborate and communicate effectively and to understand how and when digital technologies can best be used to support these processes. (p. 2)

Being regarded as an essential requirement for life in the digital age, research has indicated that digital literacy is a fundamental skill that is needed in all educational contexts. This implies that teachers and students have to be digitally literate in order to take part effectively in the modern world. To be so, they should have many skills including critical thinking, decision-making, problem-solving abilities and creativity, they should as well develop their capability of using digital technologies to find, analyze and evaluate information, and their ability to participate both actively and ethically in collaborative communities (Barell, 2010; Lent, 2012; Trilling & Fadel, 2009; Warschauer & Matuchniak, 2010). Therefore, being literate has clearly evolved from the mastery of reading and writing printed texts to being able to critically use and create web-pages, blogs and wikis, as well as utilize a dynamically digital variety of mobile devices, social networks, applications and software (Morrell, 2012).

The European Reference Framework considered digital literacy; along with language and traditional literacy, as one of the basic requirements that every citizen should have for lifelong learning. Digital literacy is defined by this framework as:

The confident and critical use of Information Society Technology (IST) for work, leisure and communication. It is underpinned by basic skills in IT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet. (European Commission, 2007, p. 7)

Clearly, the European framework underscored the skills of using technological tools to access, evaluate, understand, create and share information in a critical way. These skills are the same to the ones emphasized by Gilster (1997), Buckingham (2006), Martin (2008), Hague and Payton (2010), and other scholars who regarded critical thinking as being the key component of digital literacy rather than the technical skills used to find information.

Equally important, the DigEuLit project of Martin and Grudziecki (2006) stressed the importance of “situational embedding” in digital literacy, which refers to the successful usage of digital technologies in different life situations. According to Martin and Grudziecki (2006), digital literacy is conceived on three developmental levels; namely, digital competence, digital usage and digital transformation.

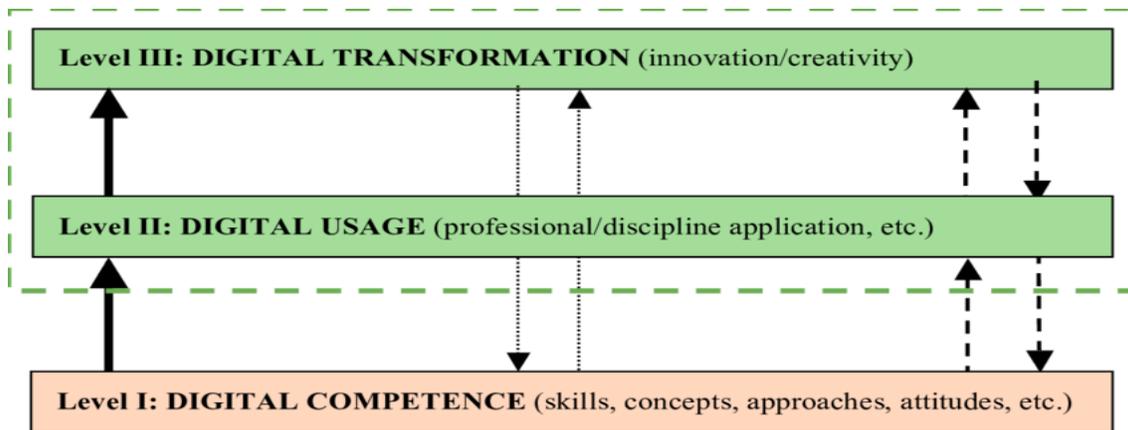


Figure 1. 1 Levels of digital literacy development (Martin & Grudziecki, 2006, p. 255)

As shown in Figure 1.1, the lower level of digital competence is the foundational level of development, which covers a set of skills that range from developing basic digital skills to acquiring more critical and evaluative skills. Examples of digital competences include being able to find and assess information, create and edit files, use digital tools such as word processor, emails and multimedia, etc. (Martin, 2008). The digital usage level, the most crucial level, is the stage in which individuals apply their digital competences within specific professional contexts, this is referred to

by Martin (2008) as “the situational embedding”. At this level, each individual brings his/her personal and professional experiences to the digital environment in order to find and process information, then complete a particular task or develop a solution to an addressed problem. The ultimate level of digital transformation takes place when digital usage brings about changes in individuals such as developing one’s creativity, innovation and professional knowledge (Martin & Grudziecki, 2006).

At a more specific level, the framework of Eshet-Alkalai (2004) presented five key literacies incorporating digital literacy, this includes photo-visual literacy, reproduction literacy, branching literacy, information literacy and socioemotional literacy. First, photo-visual literacy is the ability to find and understand information presented through visual forms. Second, reproduction literacy refers to the users’ skills of creating, managing and editing works via using a variety of multimedia forms. Third, branching literacy is the literacy which enables users to navigate systematically through hypermedia environments so that they can understand nonlinear information and construct knowledge. Fourth, information literacy is the ability to analyze and critique a plethora of web-information that is presented in digital resources. Finally, socioemotional literacy refers to the individuals’ skills of behaving appropriately in social communities and networks, remaining safe in digital environments and having an adequate awareness of issues associated with internet risks such as privacy, legal and ethical issues. Hence, the term digital literacy, as shown in Figure 1.2, embraces a range of vital skills: (1) technical: technical and operational skills; (2) cognitive: critical and analytical skills; and (3) social–emotional: communicative manners and online safety skills (Ng, 2012).

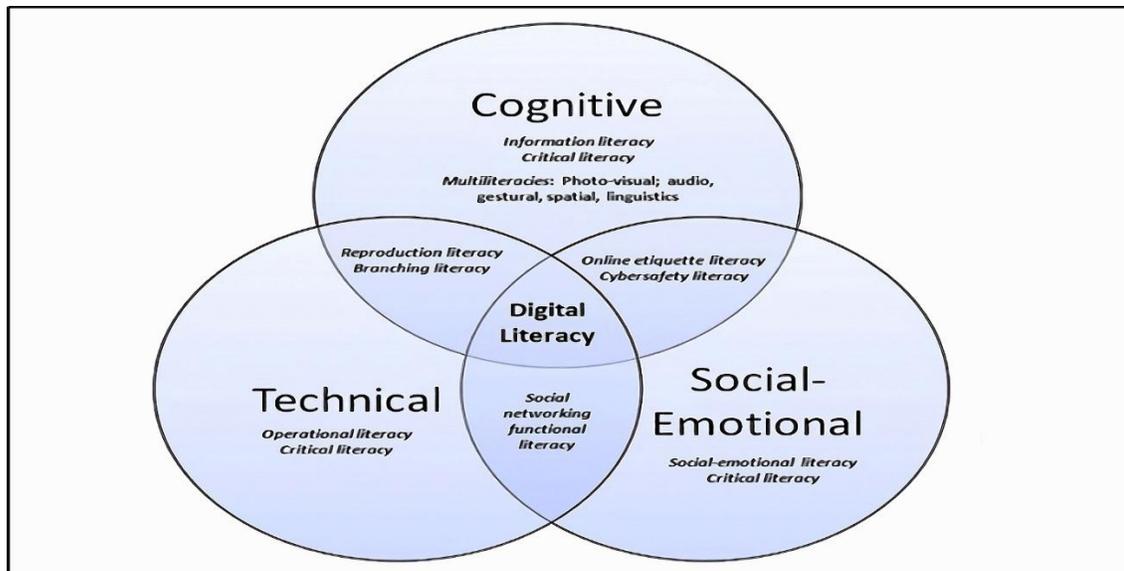


Figure 1. 2 Digital literacy framework (adapted from Ng, 2012, p.1067)

The above framework of digital literacy suggests that the concept of digital literacy has gone beyond the view of having technical skills to having the ability to critically understand and appropriately use digital content. Being digitally literate requires the holistic development of a set of skills which encompass technical, cognitive and social–emotional skills. This involves having the skills to locate and use a rich variety of digital resources, the capability to critically evaluate and understand digital texts and the ability to create and communicate knowledge via digital technologies. Accordingly, the concept of digital literacy as a complex skill, cognitive ability and social practice has a vital role in the process of meaning construction. Therefore, courses about it should be incorporated in instructional curriculums of higher education.

Another significant area of research on digital literacy has explored frameworks for measuring digital literacy skills. Both summative and formative assessments have been used to evaluate digital competence of students and educators (Dede, 2009). Among the most popular assessment frameworks of digital literacy is the one developed by the International Society for Technology in Education (ISTE) in 2007, which described the digital competencies that are required to live and

learn effectively in the 21st century life and provided six performance indicators. These indicators have been elaborated upon for describing the technological skills and competencies that are required in the digital age, and were used as a launching point for constructing assessment items in several researches. The ISTE (2007) six standards of digital literacy are summarized as follows:

- 1) *Creativity and Innovation*
- 2) *Communication and Collaboration*
- 3) *Research and Information Fluency*
- 4) *Critical Thinking, Problem Solving, and Decision Making*
- 5) *Digital Citizenship*
- 6) *Technology Operations and Concepts*

Another assessment framework is developed by Calvani et al. (2008), who defined digital literacy as an umbrella framework for a set of complicated literacies including skill, knowledge, ethics and creative production in digital environments. Calvani et al. (2008) proposed three aspects of abilities for assessment: technological, cognitive and ethical aspects. For the technological aspect, individuals need to use their abilities flexibly to resolve problems in technological contexts. The cognitive aspect refers to the ability of selecting, reading, evaluating and synthesizing digital information. The ethical aspect indicates that individuals' usage of digital technologies should be guided by morals and good principles. Obviously, each aspect is required to measure the development of individuals' digital literacy.

Additionally, Hargittai (2009) proposed a Survey of Web-Oriented Digital Literacy (SWODL) in which individuals can evaluate their competence of various digital skills. Scores on these skills may be used to correlate with education level. This type of assessment is assumed to be more effective as a measure of digital literacy proficiency than asking individuals to self-rate their overall competence. Thus, its application can be very useful in empirical research (Hargittai, 2009). The

use of 5-point Likert-item scale in the SWODL for asking individuals to rate their understanding and knowledge of multiple digital skills is considered “a stronger predictor of how well they are able to navigate online content compared with asking people how they think they can use the internet” (Hargittai, 2009, p. 131).

Although the assessment frameworks of digital literacy proficiency that were developed by the ISTE (2007) and Calvani et al. (2008) are successful in identifying competence indicators of various digital skill areas, they have a more focus on classroom use contexts. Conversely, the SWODL assessment of Hargittai (2009) was more designed for empirical research. Therefore, the SWODL (2009); which has been used in many research studies worldwide, was used as a foundation for this study.

1.2.2 Digital Divide

During the 1990s, the concept of “digital divide” appeared and was used to refer to the social and economic disparity between countries, societies and individuals who have access to computers and those who do not (Lankshear & Knobel, 2003; Rhodes & Robnolt, 2009; Warschauer, 2002). The idea behind this concept is that a significant divide concerning the use of technology has taken place between young and old generations, including that between students and teachers. Prensky (2001) has used the term “Digital Natives” to describe today’s students and the young generation born since 1980, whom he considered as being digitally literate, high-tech and native speakers of the digital language. According to Prensky (2001), today’s students are digital natives due to having innate abilities in technology usage:

Today’s students ... represent the first generation to grow up with new technology. They have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the others toys and tools of the digital age...Our students today are all “native speakers” of the digital language of computers, video games and the Internet. (p.1)

For those individuals who were not born in the digital age including teachers, Prensky (2001) has referred to them by using the term “Digital Immigrants”. Digital immigrants are called so because they are not digitally literate, they are considered to be low-tech and technology is not their native language. Prensky (2001) claimed that most of the teachers are unfamiliar with the new technological tools used by students, and consequently “. . . the single biggest problem facing education today is that our Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language” (p. 2).

Unlike the previous generations, digital natives behave and learn in new innovative ways as they have been extensively involved in the use of digital technologies. It is assumed that they have a different way of thinking, different intellectual and social qualities and different learning strategies. Today’s students are believed to rely on the use of new technologies for receiving and gaining information quickly, prefer active learning, tend to be engaged in interactive educational communities, enjoy learning games, have good multitasking skills and have low acceptance of teacher-centered lectures (Oblinger & Oblinger, 2005). In contrast, teachers or the so called digital immigrants prefer more serious learning approaches. They process information in a slow way, prefer to rely on printed-teaching materials and tend to deal with one thing at a time (Oblinger & Oblinger, 2005; Prensky, 2001). Such differences between students’ and teachers’ digital skills and interests lead to students’ feelings of alienation and dissatisfaction (Levin & Arafeh, 2002).

Though today’s students are considered digital natives, many study findings have revealed that there are differences in their digital skills and competencies of web-based activities (Bennett, Maton, & Kervin, 2008; Hargittai, 2010; Kvavik et al., 2004). These disparities continue to take place even if they have equal access to digital technologies. This implies that being digital native

is not a matter of only technology access; it is rather related to the involvement in digital practices. In a study on the digital skills of learners, Kvavik et al. (2004) found that most of the learners have a low level of digital skills, despite the fact they own and have access to various technological tools. They reported that only 21% of learners engage meaningfully in web-based activities. In addition, Lei (2009) reinforced this finding by asserting that there is no universal digital skill level among today's learners. Accordingly, these researchers suggested that digital divide exists even among students of this generation; thus, age should not be regarded as the only factor to differentiate digital natives from digital immigrants.

Many researchers have questioned Prensky's (2001) description of all today's learners as being digital natives (Bennett et al., 2008; Guo, Dobson, & Petrina, 2008). They pointed out that students come from different backgrounds, some of them do not have access to technologies, some have disabilities and some others are not comfortable with the use of computers. Therefore, the generalization that all today's students are digital natives is not true, because not all of them are high-tech or interested in learning with digital technologies as Prensky (2001) claimed (Guo et al., 2008).

According to Guo et al. (2008), Prensky's (2001) assumptions of digital natives and digital immigrants is exaggerated, they viewed that "the digital divide thought to exist between 'native' and 'immigrant' users may be misleading, distracting education researchers from more careful consideration of the diversity of ICT users and the nuances of their ICT competencies" (p. 235). These researchers concluded that today's learners are social networking savvy, yet not necessarily digitally literate. Hence, the concept of digital natives is not static and generalizable, it is rather widely dynamic in nature.

Some studies have found that the digital divide among students contributes to the decrease of their academic achievements (Warschauer, 2008; Wenglinsky, 2005). Therefore, it is highly

advised to provide students with academic support and training on how to use digital technologies appropriately for learning purposes. Warschauer (2008) noted that providing access to technologies in classrooms does not play a significant role in narrowing the digital divide among students, if it is not accompanied by an adequate pedagogical and technical support for learning how to use new technologies effectively. Hence, educational stakeholders should consider the need for developing digital literacy education programs to bridge the digital divide among students in an effort to boost students' academic outcomes.

In this respect, Lee (2000) asserted that teachers should be at the forefront of supporting the development of students' digital skills. Teachers need to have an adequate knowledge on the use of digital technologies so that they can integrate them in classrooms, and can help their students gain information about their uses. Mishra and Koehler (2006) concurred that teachers should develop their TPCK in order to use digital technologies efficiently. They should be digitally literate because they are the key factor to determine the success of TELL (Ertmer, 2005; Kim, 2002; Knobel, 2011). For this reason, the professional development of teachers' digital literacy is of vital importance in the research literature.

Overall, in order to promote digital literacy skills development, Warschauer (2002) suggested the provision of four resource types, these are 1) physical resources like computers and Internet access; 2) digital resources such as digital content and texts; 3) human resources including ICT training and education; and 4) social resources, including social communities which reinforce the learning of digital skills.

1.2.3 Role of Digital Literacy in EFL Teaching and Learning

One of the significant research areas of digital literacy is that there appears to be a mutual reinforcement of digital literacy proficiency and EFL language practices as linguistic competence

is developed by access to digital information for learning, while English is used as a medium of communication (De Bot & Stoessel, 2002; Hafner, 2015; Mudra, 2020; Wei, 2000). Therefore, exploring the relationships between digital literacy and EFL learning and teaching processes is of crucial importance as the two concepts correlate in this research.

Recent research findings have revealed that digital literacy proficiency enables access to a plethora of authentic learning resources, and the use of such resources has had a direct influence on EFL learning and instructional practices (Kern, 2000; Mudra, 2020). Today's students and teachers rely mostly on digital environments for language learning and teaching; hence, taking full advantages of these web-environments is evidently not possible if they do not have an adequate level of digital literacy (Sykes et al., 2008). While it is quite believed that digital literacy is transforming the ways of studying and teaching, research has shown that students and teachers should be instructed on how to utilize digital tools for specific educational objectives in order to ensure making an effective use of them. Most importantly, developing critical abilities of students and teachers to work with digital resources is the basic skill that should be highly emphasized (Martin & Rader, 2003; Selber, 2004).

According to Hull and Schultz (2001), the value that digital literacy brings to FL learning is the construction of a bridge between classroom and home literacies. This means that English language learning is not limited to classroom contexts, students from different cultural and linguistic backgrounds may widen their learning environments by taking advantage of digital tools to enhance their abilities and learning levels (Sykes et al., 2008; Thorne, 2005). Digitally literate students are assumed to take an active learning role through using web-based instructional environments for developing English language skills, research and presentation skills, literacy practices, content knowledge and creativity (Hafner, 2015; Pavlenko & Lantolf, 2000). As a result

of being able to gain and produce online knowledge, EFL students' participation and motivation to learn the target language increases (Peterson, 2012).

Additionally, digital literacy opens up new ways of teaching methods and offers a wide range of opportunities for communicative interactions (Mudra, 2020; Thorne, 2005). With regard to instructional methods, EFL teachers have the chance to enrich their teaching style by making a good use of the advent digital technologies and multimedia tools which support diversity in the ways of teaching. For EFL students, digital literacy practices generate possibilities of communication with English native speakers all over the world. They can involve into various communicative practices either in classrooms or at home (Warschauer & Kern, 2000). Throughout the development of communicative interactions, EFL students will obtain English native speakers' ability, competence, readiness and confidence (Peterson, 2012). Competence in English will help in turn EFL students to search, find, understand and contribute efficiently to complex English web-based learning resources (Lotherington & Jenson, 2011).

Based on their advanced level of digital literacy, EFL learners will be able to build their English skills, communicate and contribute meaningfully in online environments (Mudra, 2020). In this context, McLoughlin (2011) viewed that digital literacy fosters students' curiosity and creativity, and helps as well in developing English language skills as digitally literate students have the ability to gain information, do research, read-write multiple digital contents, select right choices and make logical decisions concerning their language learning. Therefore, digital literacy makes the use of English more purposeful, empowering, interesting and natural for EFL students.

Interestingly; in a study conducted about the impact of digital literacy proficiency on the academic skills of EFL undergraduate students, Hafner (2014) pointed out that digitally literate students tend to use different registers, styles and discourse identities as appropriate to the type of audience they address. They use a variety of English language forms and multimedia modes such

as image and sound according to their belief about the relationship they have with the audience. This suggests that digital literacy offers potential for developing English academic skills and discourse identities.

1.2.4 Effects of Digital Literacy on EFL Writing Skills

English writing is widely considered as a significantly important skill for the learning and teaching of English as a foreign language. Through writing, learners can compose a variety of written contents, express and exchange ideas, engage in critical and reflective analysis, exhibit their creativity, gain knowledge and experience on academic researches, and enhance their overall proficiency in academic language (Craig, 2012). Research has suggested that digital literacy enables the production of a higher quality and quantity of English writing (Caws, 2006; Elola & Oskoz, 2017; Goldberg et al., 2003; Hafner, 2015; Mudra, 2020; Warschauer & Ware, 2006). It was found that digital writing enhances more collaborative, situated and iterative practices as compared to pen and paper writing.

Digital resources facilitate the process of edition and revision more than the method of pen and paper. EFL learners can iteratively edit and submit their written works without being required to fully hand-write them; in addition, providing feedback to each other's works can be done in an easier and faster way (Chen, 2016; Warschauer & Ware, 2006). Therefore, EFL digitally literate learners have the opportunity to practice writing in diverse genres; consequently, they can increasingly gain knowledge on English writing skills.

Digital literacy is regarded as an essentially crucial skill for the learning and teaching of EFL writing skills (Caws, 2006; Hafner, 2015). With digital literacy, teachers and learners can reach a wide range of authentic educational materials without having to make a long journey to English-speaking countries (Gonglewski, Meloni, & Brant, 2001). Through integrating digital authentic

tools in EFL writing instruction, teachers can reinforce their students' use and practice of situated writing, as well as increase their participation and motivation in classroom learning (Adas & Bakir, 2013; Ahmed 2016; Chuo, 2007; Rico & Vinagre, 2000). Moreover, the use of such tools facilitates the meaning-making process and enhances the production of multimodal texts (Elola & Oskoz, 2017; Murray & Hourigan, 2006). Based on a study findings, Warschauer (2008) concluded that through the use of digital tools learners “developed sophisticated artistic and compositional skills as they explored the features of multimodal genres.....multimodal work also helped students think deeply about texts” (p.62).

According to Warschauer (2011), digital literacy supports the development of four major areas: Content, composition, community and construction, which are considered as key elements for an effective learning of EFL writing. The value that digital literacy brings to the four above learning areas can be explained in the following. Firstly, a variety of rich, interactive and infinite content on different topics can be accessed by EFL learners through the use of advanced digital technologies. They find the information they seek on web-sites, communicative tools, discussion forums, and other resources (Caws, 2006; Elola & Oskoz, 2017). Secondly, EFL learners gain more knowledge about this content with the support of some communities such as teachers and peers. It has been widely asserted that communication with others is necessary for learning as it helps students achieve a progress within their ZPD. They may discuss, exchange ideas and understand better about any learning content through communicating and interacting with their instructors or classmates (Chen, 2016).

Thirdly, EFL learners start constructing knowledge on the relevant content. Over time and with the continuous interactions with communities, their constructions will become more sophisticated (Hafner, 2015; Murray & Hourigan, 2006). Finally, during all of these situations, EFL learners are engaged in extensive writing practices, they may sharpen their ideas and develop their

compositions through using various online tools as web-sites, blogs, wikis, social networks, etc. (Black, 2009; Elola & Oskoz, 2017). While they receive content from digital tools, construct meaning about it with the help of a community, and at the same time get extensively involved in writing practices, EFL learners would widen their thinking, use the gained knowledge innovatively and develop their writing skills efficiently (National Commission on Writing, 2004).

A large number of research findings have supported the view that digital literacy provides opportunities for engagement in educational communities, which help in constructing knowledge and composing products, thereby developing one's learning progress (Caws, 2006; Hafner, 2015; Mudra, 2020; Rosatelli & Self, 2004). EFL students use online communities such as discussion forums, blogs and wikis to read, write and comment on the work of others in an interactive way, and the constructive feedback they get from others can lead to improvements in their writing performance (Ahmed 2016; Chuo, 2007; Murray & Hourigan, 2006). Therefore, the use of these communities is regarded as a valuable tool for EFL students to improve academic language, critical thinking skills and writing proficiency (Cunningham, 2000; Lin, 2014). In this respect, Bloch (2007) posited that digital literacy promotes academic writing skills, arguing that students might train on different types of writing, meaningful discourses and critical thinking if they are digitally literate.

It is evident that all of the pedagogical practices can be carried out without the use of digital technologies and the requirement of being digitally literate. Teachers can provide rich content, instructional feedback, opportunities to construct knowledge and compose written products in a traditional way (Chen, 2016). Nevertheless, having sufficient digital literacy skills to use critically new technologies amplifies each of these practices (Caws, 2006; Elola & Oskoz, 2017). This is attributed to the fact that digital skills allow for an easier access to rich content, offer more engagements in interactive communities, permit faster knowledge construction, present a plethora

of opportunities for producing and editing online written works, aid in contacting authentic audience, facilitate the publication of written works, provide online feedback, and improve learners' overall dependency and motivation (Goldberg et al., 2003; Hafner, 2015; Murray & Hourigan, 2006).

The following section presents an overview of the major teaching approaches of writing that have emerged over time and contributed to the implementation of various instructional practices. Particularly, it describes the approaches that have witnessed a paradigm shift since the 1970s, moving from emphasizing writing products to focusing more on writing processes.

1.3 Approaches to EFL Writing Instruction

English writing is considered as the most difficult skill for EFL students to master, this is due to the complexity of writing skills which require correct lexical choice, a good use of spelling and punctuation, as well as an effective use of planning and organization strategies (Melouk & Merbouh, 2014; Richards & Renandya, 2002). Additionally, students need to be aware about specific aspects related to academic writing including text type, audience type, register and rhetorical strategies. The complexity of writing skills, therefore, “lies not only in generating and organizing ideas, but also in translating these ideas into readable text” (Richards & Renandya, 2002, p.303). Henceforth, such complexity requires EFL teachers to select and implement the most appropriate teaching approaches in their writing instruction (Craig, 2012). To better understand the writing instruction, it is helpful to examine how writing has been taught in different ways over time. This section discusses the major approaches involved in academic writing teaching, including product-based approach, process-based approach, genre-based approach and process-genre approach. The strength and weakness areas of each approach are discussed thoroughly in distinct parts.

1.3.1 Product Writing Approach

The product writing approach, a dominant teaching approach during the 1960s and 1970s and one of the basic pedagogies that still holds steadfast in many EFL contexts, was firstly named by Fogarty (1959) as the “current-traditional rhetoric” approach in order to refer to the traditional teaching practices that were prevalent during that time (Matsuda, 2003a). This approach emphasizes the utilization of correct forms, grammar and translation in writing. In addition, it encourages teacher-centered instruction where students are supposed to learn what and how to write, and end up with written products submitted to teachers for evaluation. The written products are then corrected and graded by teachers without giving any extra input for learners who may not have the opportunity to see their written works again (Leki, Cumming, & Silva, 2008; Santos, 1992).

The product approach or current-traditional rhetoric requires students to focus on practicing writing sentences in correct grammatical forms without paying much attention to writing skills. (Badger & While, 2000). Under this approach, learners are given a sample text and advised to focus on its form and syntax. They are supposed then to thoroughly imitate the sample text in producing their writing, while emphasizing the correct use of grammatical forms instead of focusing on the flow and organization of ideas (Matsuda, 2003a).

Following the behaviorist learning principles, the product writing approach views teachers as holders of knowledge and masters of good writing. Students are expected to be recipients of teachers’ knowledge, they should manipulate learning all the necessary linguistic aspects in order to be successful writers (Leki et al., 2008). Notably, the features that characterize the product writing approach are shared by some other approaches. For instance; in the same way to the product approach, the “controlled composition” approach regards writing as a mastery of linguistic

structures. Under this approach, teachers should function as proofreaders who have to principally emphasize the learning of linguistic forms rather than concern themselves with promoting writing style and creativity (Silva, 1987).

Another characteristic of the product approach includes the teaching of contrastive rhetoric (Kaplan, 1967). Kaplan (1967) argued that there are linguistic and cultural differences between students' first language (L1) writing and second language (L2) writing; therefore, raising EFL students' awareness to such rhetorical differences should be underscored. For doing so, EFL teachers may include various learning activities and exercises in their writing instruction. For example, they may focus on drill-and-practice exercises, substitution or completion activities, practice of grammatical forms and imitation of writing models (Leki et al., 2008; Silva, 1987). The activities given are expected to enhance students' linguistic accuracy rather than the quality of their ideas and expressions (Matsuda, 2003a; Silva, 1987).

The objective of the product approach is to teach writing in a highly strict manner, the focus is on the written product itself rather than on the process of writing. Writing itself is seen as a manipulation and knowledge of structural forms, and writing competence is the consequence of imitating writing models provided by teachers (Badger & White, 2000). The product approach is teacher-centered, teachers deliver lectures on rhetorical forms, provide linguistic examples from literature and present writing patterns for replication. Students are expected to analyze literary examples, learn the linguistic rules and mechanics and then produce correct written language (Santos, 1992; Susser, 1994). Writing activities are timed, submitted, graded and then returned to students before moving on to the subsequent assignments.

Advocates of the product-based approach believe that it develops students' writing accuracy through enhancing linguistic knowledge. They think that the use of writing models for imitation is important for students' discovery and analysis, without such models students might continue in

committing their writing errors (Badger & White, 2000; Myles, 2002). Nevertheless, during the 1970's, educators and researchers started to express their dissatisfaction with this approach (Vygotsky, 2000). In this respect, Silva (1987) argued that “many felt that neither of these approaches adequately fostered thought or its expression – that controlled composition was largely irrelevant to this goal and that the traditional rhetorical approach’s linearity and prescriptivism discouraged original, creative thinking and writing” (p. 7). The problem with the product approach is that it lacks communications and interactions, and does not foster creativity or expression. Writing is beyond mere knowledge of syntactic forms and replication of textual structures; it is a process that entails a set of complex problem-solving activities (Vygotsky, 2000).

1.3.2 Writing Process Approach

The writing process approach has attracted the attention of many writing researchers and educators since the late of 1970's (Badger & White, 2000; Pritchard & Honeycutt, 2007). It was introduced by Vivian Zamel in 1976 as a reaction to the controlled composition and product-based approaches which emphasized the written products over the process of writing, overlooking the encouragement of thought and creative expressions (Matsuda, 2003b; Silva, 1987). This model was later on further developed by the two cognitive researchers Flower and Hayes (1981), who believed that learners utilize the same processes for L1 and L2 writing. Henceforth, they viewed that EFL students could adequately foster their writing development through the use of process-based instruction (Matsuda, 2003b; Wyse, 2009). According to Silva (1987), the wide criticism to the product approach of writing triggered researchers and educators in both English as Second Language (ESL) and EFL contexts to largely adopt the process-centered approach in writing instruction.

Faigley (1986) classified the writing process approach into two categories: Expressivist and cognitive writing. On the one hand, expressivist writing is individualized, personal and non-directive. Writing tasks based on the expressivist view encourage self-discovery, inner creativity and individual voices. Examples of such tasks include personal essays, reflective essays and journal writings that are useful in promoting the expression of thoughts and ideas (Barnard & Campbell, 2005). On the other hand, the cognitive writing model views writing as a complex, goal-based, recursive activity that aims at communicating meaning. In this regard, Zamel (1983) articulated that writing is a “non-linear, exploratory, and generative process whereby writers discover and reformulate their ideas as they attempt to approximate meaning” (p.165).

Following Flower and Hayes’ writing process model of 1981, cognitivists underscore that writing is based on three main components: The task environment (writing assignment, text produced so far), the writer’s long-term memory (knowledge of topic, knowledge of audience, stored writing plans) and a set of cognitive strategies (planning, translating, reviewing, monitoring) (see Figure 1.3).

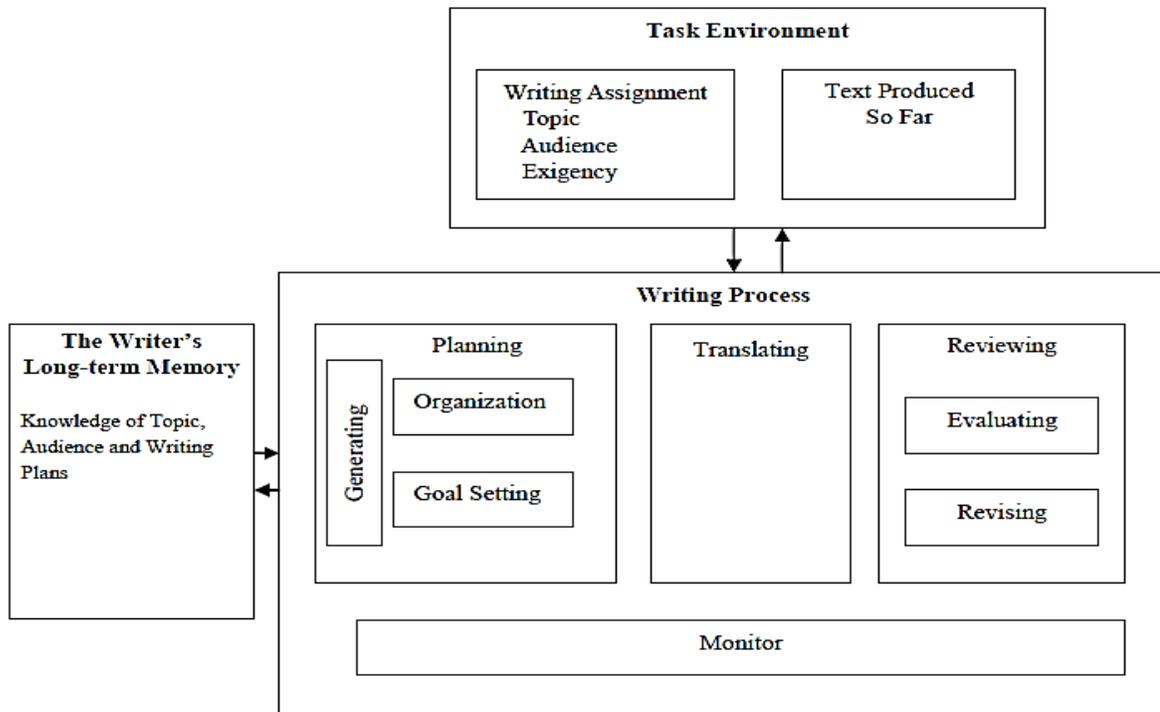


Figure 1. 3 Flower and Hayes' writing process model (Flower & Hayes, 1981)

As shown in the figure above, Flower and Hayes' writing process model (1981) illustrates that writing involves three basic units. First, the task environment which is related to anything outside the mind of writers. It involves the writing assignment that includes some elements such as the specification of topic, the type of audience and exigency, as well as the text produced so far which refers to the written product. Second, the long term memory which encompasses knowledge on the topic, knowledge of audience, determination of the writing plan and discourse type (letters, essays, argumentative, informative, descriptive writing, etc.). Third, the cognitive writing processes which involve *planning* (defining goals, forming ideas and organizing a coherent structure), *translating* (composing and transforming ideas into written text), *reviewing* (evaluating and editing the written text) and *monitoring* (examining the performance and progress of writing processes). Writing is thus explicitly viewed by cognitivists as a high-order thinking activity for constructing knowledge through the use of appropriate cognitive processes (Hayes & Flower, 1983).

More recently, the writing process model has taken into consideration the social aspect in writing practices. According to the social constructivist theory, social interactions and negotiations are of vital importance for the development of writing skills (Barnard & Campbell, 2005; Pavlenko & Lantolf, 2000). Allen (2005) stressed that writers are social learners who learn from both pedagogical and social settings. Communications with teachers and interactions with peers are useful for enhancing the overall writing competence. Therefore, writing activities should be situated in social contexts. In fact, there are several activities that students can collaboratively engage in; for instance, they may brainstorm ideas together, write together, revise each other's writings, exchange feedback and so on. Such activities can be conducted either face to face or via the use of technological platforms as wikis and blogs (Barnard & Campbell, 2005; Wyse, 2009).

Since the 1980s, the writing process model that consists of five stages including prewriting, drafting, revising, editing, and publishing stages have been widely implemented in EFL and ESL writing instruction contexts (Atkinson, 2003). As indicated in the figure below, these five stages are interconnected, cyclical, recursive and do not have a linear sequence (Hyland, 2003).

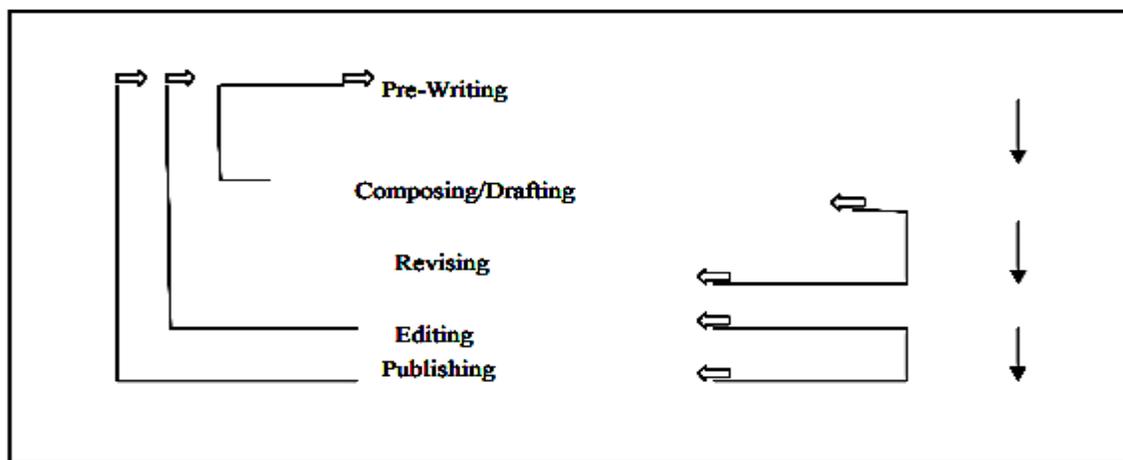


Figure 1. 4 Writing process stages (Tribble, 1996)

The writing stages shown in Figure 1.4 are not necessarily followed in the same sequential order. This means that students might go back and forth to any writing stage at any time they want. In this regard, Tribble (1996) underscored the recursive activities of the writing process by noting that “at any point in the preparation of a text, writers can loop backwards or forwards to whichever of the activities involved in text composition they may find useful” (p. 39).

As observed in the figure above, the writing process starts with the prewriting stage. At this stage, students start gathering data and ideas for writing about the given topic through the use of brainstorming. They may use various techniques such as planning, researching, outlining, listing, etc. (Badger & White, 2000; Graham & Harris, 2007). When they determine their writing direction, students move to the drafting stage. At the drafting stage, students start writing their first drafts based on the outline and structure that they have chosen during the pre-writing phase (Tompkins et al., 2014).

Following the drafting is the revising stage. During the revising phase, writers review and refine their drafts with the assistance of peers and teachers. Revision involves three main activities which are proofreading the draft, sharing the draft among the writing community and then editing it based on the received feedback (Strunk & White, 2000). According to Tompkins et al. (2014), “revision is not just polishing; it is meeting the needs of readers by adding, substituting, deleting and rearranging material” (p. 49). This implies that writers might do several changes to reach perfect compositions; for instance, they may correct mechanical errors such as spelling, punctuation, sentence structure, grammatical mistakes and so on. When the editing phase is over, writers move to the publishing stage in which they write their final drafts, and then share them with real audience such as teachers, peers, parents, online communities, etc. (Graham & Harris, 2007).

Proponents of the writing process approach stress that this model enhances exploration, discovery and creativity. It gives priority to the development of thinking and ideas over the teaching

of structural forms and grammar (Hyland, 2004; Pritchard & Honeycutt, 2007; Spack & Sadow, 1983; Zamel, 1983). In this respect, Barnard and Campbell (2005) stated that the process writing model emphasizes “creating and extending meaning, rather than merely conveying pre-conceived information” (p. 77). This approach does not explicitly teach writing, it considers writing as a skill to be learnt and not taught. Teachers play the role of facilitators, with minimal interventions to students’ learning. Their role is to aid their students “express their own meanings through an encouraging and cooperative environment with minimal interference” (Hyland, 2003, p. 18). The focus of the writing process is not on the final product, but rather on creating writers through the use of cognitive and metacognitive strategies in writing instruction (Tompkins et al., 2014).

Nevertheless, this approach has been under serious criticism especially in the context of L2 writing (Badger & White, 2000; Johns, 2003). The process writing approach considers teachers to be “by-standers with little to say about the ways texts are conventionally structured and used” (Hyland, 2004, p. 8). Teachers’ corrections and scaffoldings are delayed to the revising stage. This makes L2 learners; who have little linguistic input, face several difficulties in their writings. Additionally, this approach disregards the consideration of the text content and the target audience in the writing instruction. Moreover, it ignores the cultural and social aspects that have huge influence on the different types of writing (Atkinson, 2003; Johns, 2003).

Badger and White (2000) claimed that the process approach does not give much concern to the instruction on text types, although having knowledge on such linguistic aspects is crucial for successful writing. According to Johns (2003), the aim of the process writing model is to make L2 students authors even though they are not yet ready to be competent writers, to encourage students’ voices while disregarding instruction about registers and argumentation, and to focus on writing purposes while diminishing the importance of the targeted audience. Due to these drawbacks,

educators and pedagogical staff have moved to the consideration of the genre approach in the instruction of EFL and ESL writing.

1.3.3 Genre Writing Approach

The genre approach is another significant pedagogy for the teaching of both L1 and L2 writing, which was evolved as a reaction to the limitations of the process approach (Johns et al., 2006). The process writing approach has come under serious scrutiny for emphasizing the problem-solving strategies, while neglecting the linguistic, social and cultural resources that are of vital importance for writing development (Hyland, 2003; Johns, 2003). The genre approach addresses this drawback by basically focusing on the linguistic aspects as well as the social and cultural contexts in the writing syllabus.

The term genre refers to a text that is written for a specific purpose in a particular social or cultural context, and is viewed by a special discourse community (Silva, 1987). Nunan (1999) illustrated that different writing genres “are typified by a particular structure and by grammatical forms that reflect the communicative purpose of the genre” (p. 280). Some scholars believe that the term genre is an alternative to text type, but many others view that the two terms have opposite notions. According to Paltridge (2002), both genre and text type deal with language aspects, but in different ways. He pointed out that genre refers to a specific purpose of a text. There are many examples of genre including stories, novels, different essays, research reports, resumes, lectures, different types of letters, e-mail messages, online discussions, legal texts and so on (Johns, 2003).

Conversely, text type refers to the language type used in writing such as definitions, explanations, descriptions, narratives, persuasion, classifications, expositions, instructions, cause and effect, compare and contrast, problem-solution, argumentation, etc. (Paltridge, 2002). Knowledge on such a distinction between genre and text type is quite important for both English

for Academic Purposes (EAP) and English for Specific Purposes (ESP) classrooms as the two terms deal with different linguistic aspects (Johns, 2003; Paltridge, 2002).

The genre approach is a social-oriented pedagogy that focuses on raising students' awareness to social writing conventions of various text types (Hyland, 2004; Johns et al., 2006). It gets students engaged in communicative acts that let them consider significant writing aspects as the purpose, the audience and the genre structure (Leki et al., 2008). According to Badger and White (2000), the genre and product approaches are similar in many ways. The most common issue between them is that they both treat writing as a linguistic skill which requires explicit instruction. However, unlike the product approach, the genre approach puts more emphasis on the social context of writing. It provides explicit instructions on how to use language appropriately according to different social contexts.

The genre approach regards writing as a cultural and social practice. It emphasizes the social situations of writing and the rules of the target community (Johns et al., 2006). According to Kim (2006), this approach highlights that "...the context of a situation should be considered and analyzed in order to anticipate what linguistic features are required...The structural features that genres are made up of include both standards of organization structure and linguistic features" (p. 34). Paltridge (2002) noted that knowledge on different genres is taught explicitly in the writing class. Instructors using this approach focus on teaching multiple writing genres, linguistic and discourse features of mixed texts and the contexts in which these texts occur. The aim of the genre approach is to prepare students for communicative success in writing through training them on applying efficiently a variety of social and communicative rules (Swales, 1990). The emphasis of such a pedagogical approach, as indicated by Hyland (2003), is on the reader and the discourse conventions that should be mastered by students to reach successfully the target audience.

Dudley-Evans (1997) suggested that students follow three writing stages in the genre approach. At the first stage, students are given a model of a specific genre for observation and analysis. At the second stage, they are asked to practice some language rules related to a particular social context. Once they become familiar with the writing genre through analyzing the introduced model and practicing the relevant activities of language usage, students are then expected to move to the third stage in which they produce their own written texts. Unlike the process writing approach, teachers take authoritative roles in the genre approach, especially when scaffolding students' writing. These central roles of teachers gradually diminish after each writing stage. Teachers' roles shift from controlling instructors to facilitators when students start producing their texts. According to the sociocultural theory perspective, the vital role that teachers play in the genre pedagogies helps students improve their writing competence and extend their ZPD (Hyland, 2003).

Like the other writing pedagogies, the genre approach did not escape criticism. Much of the criticism given to this approach was directed to the roles that students play in the learning process. It is claimed that the explicit instruction on a particular writing genre makes students very dependent on their teachers. Under the genre-based pedagogy, students tend to view their teachers as the imparting of knowledge who should provide all the educational content and writing input, while they act as passive recipients of teachers' knowledge (Swales, 1990).

Additionally, Badger and White (2000) argued that teachers' provision of text models in writing classes discourage students from expressing their own ideas, and trigger them to fall in the trap of replication. Thus, students' creativity in writing can be inhibited. They also pointed out that the explicit instruction on writing genres leads students to focus on the writing form rather than the writing strategies. For these reasons, Badger and White (2000) proposed the so-called process-genre writing pedagogy as an alternative to the genre approach in writing instruction, which takes

into account providing instruction on different writing genres, following the writing stages and increasing students' active roles in the learning process.

1.3.4 Process-Genre Writing Approach

The weaknesses of the earlier approaches including the product approach, the process approach and the genre approach indicate that they are complementary (Badger & White, 2000). As a result of the shortcomings of these approaches, Badger and White (2000) suggested the process genre approach as a new writing pedagogy which synthesizes the strengths of the product, the process and the genre approaches. The process genre approach stresses that

Writing involves knowledge about language (as in product and genre approaches), knowledge of the context in which writing happens and especially the purpose for the writing (as in genre approaches), and skills in using language (as in process approaches), writing development happens by drawing out the learners' potential (as in process approaches) and by providing input to which the learners respond (as in product and genre approaches). (Badger & White, 2000, p.157-58)

According to Badger and White (2000), this approach is favorable for the modern writing classroom as it combines the key elements of the previous approaches, providing learners with model texts (as the product approach), emphasizing writing strategies (as the process approach) and offering genre knowledge (as the genre approach). When evaluating the earlier approaches, it is apparent that none of them are sufficiently suitable for the writing instruction. The product approach does not consider the writing processes, the process approach does not take into account genre knowledge and the genre approach undervalues the strategies needed for producing texts (Hyland, 2004). Therefore, good opportunities for enhancing writing skills can be offered through the process genre approach (Badger & White, 2000), as the following figure illustrates.

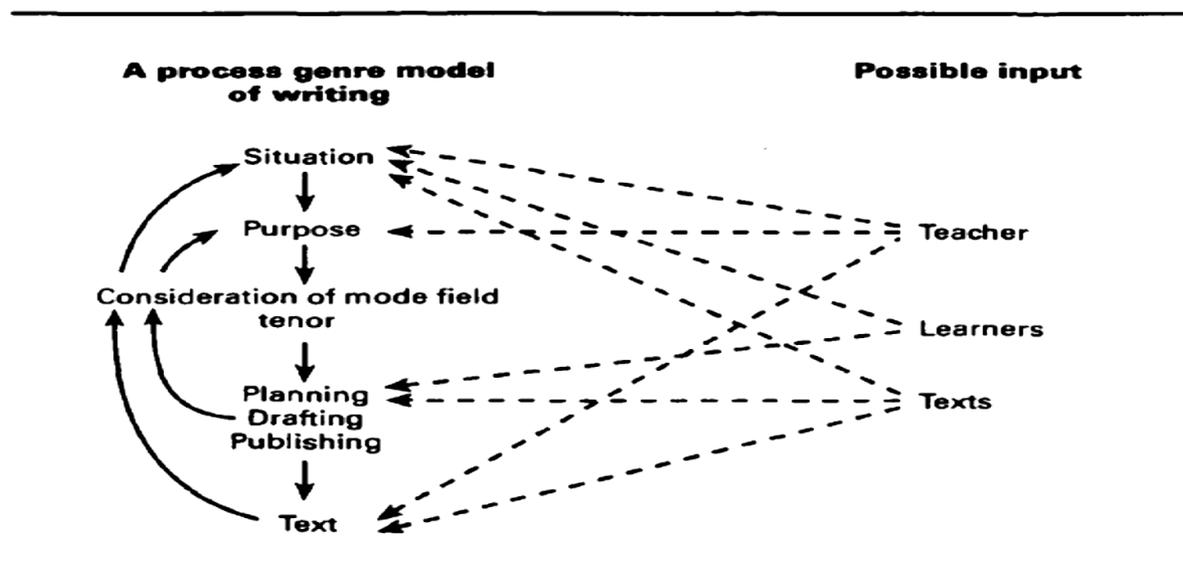


Figure 1. 5 Process-genre writing model of Badger & White (2000)

As shown in the above figure, Badger and White (2000) identified five key components of the process genre approach including the situation, purpose, consideration of mode/field/tenor, planning/drafting/publishing, and text. In this approach, teachers are required to explain for students the communicative situation and the writing purpose, and to provide them with an adequate illustration on some social aspects such as the mode (structure), field (subject matter) and tenor (audience) of writing. Students need to know to whom, why and how they write a particular text. They need to follow the main writing stages such as planning, drafting and publishing for producing their texts, and can jump between these stages as they want since the process genre approach does not require a linear sequence of stages. This model defines three sources of learning input: the teacher, the peers and the model text. Input provided by teachers and peers can be useful for students to generate ideas. In addition, the provision of model texts is valuable for instructing students on the organizational development, the grammatical and rhetorical features of the target genre (Hyland, 2004).

Badger and White (2000) provided an example to explain how the process genre approach functions in writing classroom. The example given here is about students who learn to write a good description for car dealership. Students should recognize that the intention of their writing is to sell the car (purpose), that it appeals to a certain type of audience (tenor), that it contains some specific information (field), and that there is a particular organization that should be followed for writing about car descriptions (mode). With this approach, students are offered model texts to learn about the organization, structure and language used for writing about a given genre. Then, they experience the process of writing stages such as planning, drafting, revising and publishing instead of producing a text right away. It is suggested that teachers and peers' input or feedback should be presented throughout all the writing stages to further enhance students' writing skills (Keh, 1990).

In the process-genre approach, teachers play the role of guiders, monitors and facilitators, while students take active roles in the learning process, and participate more effectively in the writing tasks. Students are required to write their texts individually through the guidance of their teachers who are "available to help, clarify, or consult with them individually during the process" (Yan, 2005, p. 22). When students finish working on their individual compositions, teachers introduce feedback towards students' writing. Teachers may also ask students to peer-review and evaluate their written works (Yan, 2005). Quite clearly, this approach offers students appropriate input and guides their composing process simultaneously. It makes students get familiar with various writing genres, and at the same time get involved in the processes of prewriting, drafting, revising and editing.

Through the analysis of this writing approach, it is apparent that the process genre approach is the most appropriate to develop students' writing skills. The present study recognizes that this approach to writing is effective in enhancing students' linguistic and pragmatic competencies. It allows learners to use appropriate language, structures and strategies in their compositions.

Therefore, this study draws on the process-genre approach in order to meet students' academic writing needs and develop their writing strategies.

In the current study, EFL students enrolled into academic writing class were required to focus on composing different text types (argumentative, expository, narrative, cause and effect, compare and contrast, etc.), and at the same time give equal importance to applying the writing process stages. It was assumed that the use of the process genre approach would develop students' writing skills. Writing development would be achieved by providing students with sufficient genre knowledge, and by bringing out their potential through planning, collecting information, drafting and revising activities.

Most significantly, it should be noted that technological tools such as blogs and wikis were utilized to support all the stages of the process genre writing. The researcher's role was to provide adequate linguistic input, explicit instruction on how language functions in the social context, and training on the application of writing stages. Students were required to work both individually and collaboratively in writing class, and to conduct properly the five writing stages either via the face-to-face method or through the integrated technological platforms.

As previously described, a variety of digital technologies can be adopted for enhancing the learning of EFL skills including academic writing skills. In the following section, types of digital tools used to support EFL writing skills are introduced and discussed with respect to their effectiveness in fostering English writing performance.

1.4 Use of Web 2.0 Tools in EFL Process-genre Writing

Writing is considered as the most complex skill to be mastered by EFL learners. This is due to the fact that EFL learners have to master a set of sub-skills required for writing such as grammar, vocabulary, spelling, punctuation and reading (Jones & Fortescue, 1987; Melouk & Merbouh,

2014). In this context, the advancement of digital technologies is claimed to contribute extensively to the improvement of the sub-writing skills mentioned above, and to the development of the overall writing competence (Cunningham, 2000; Godwin-Jones, 2003). Today, Web 2.0 tools such as blogs and wikis have become key instructional resources of writing, as they provide students with online environments that encourage engagement, collaborative learning, and exchange of ideas (Goldberg et al., 2003). This section looks at the motivations behind the use of Web 2.0 technologies in EFL writing instruction, and discusses the effects that these innovative platforms may have on a set of writing skills.

1.4.1 Wikis

Wikis are collaborative websites that many visitors can work on or edit, they are developed to facilitate collaboration and promote contributions. A widely acknowledged example of wikis is Wikipedia which has become one of the best known websites in the world (Richardson, 2010). The term “wiki” is taken from the Hawaiian word “wikiwiki”, which means quick, a referral to the accessibility and quickness of wiki sites (Parker & Chao, 2007). It was originally conceptualized by Ward Cunningham (1995), who created the first wiki as a cooperative website that could be constantly updated (Leuf & Cunningham, 2001). Today, wiki is considered as a “freely expandable collection of interlinked Web pages, a hypertext system for storing and modifying information – a database, where each page is easily edited by any user with a forms-capable Web browser client” (Leuf & Cunningham, 2001, p.14).

To put it differently, wikis are dynamic websites that can be constantly edited by authors, they are designed in a way that enable all users of a particular community to upload, create, edit and share content (Knobel & Lankshear, 2006). They allow “multiple participants to enter, submit, manage, and update web pages” (Lamb & Johnson, 2007, p. 57), and enable users to track down

history changes. Wikis are popular because they are easily accessible. Users can effortlessly create content, edit posts and comment on collaborative projects, all what they need is a computer with internet connection. Such ease of use enables contributors to quickly expand any wiki page (Parker & Chao, 2007).

There are various designs of wikis, but their format is basically simple. Generally, all wiki sites contain an 'Edit Page' where authors can write and edit their content, they may also upload textual, visual or auditory files on this page. In addition, some wikis include a 'Discussion' tab, which enables users to negotiate and comment on the posted works (Leuf & Cunningham, 2001). Most importantly, wikis provide a function for tracking down earlier modifications, teachers can use it to check the history and contribution process of each student to a collaborative task. Unlike blogs that have a chronological order, wikis are organized according to topics or content (Lamb, 2004; Leuf & Cunningham, 2001).

Parker and Chao (2007) regarded wiki as a communication tool that facilitates web-based writing. It engages students in a variety of collaborative writing opportunities, increases their potential for problem-solving and project-based learning, and puts more emphasis on the process-based writing rather than the product-based writing. Markedly, wiki supports process writing instruction because of the fact that its openness gives students the opportunity to receive scaffolding and feedback at any writing stage (Chao & Huang, 2007). Moreover, Godwin-Jones (2003) stated that wikis promote student-centered learning, as students are the ones who control what they write and publish on the wiki pages. In this regard, Richardson (2010) advised that the less controlling the teacher is in the wiki-based writing, the more beneficial the wiki learning environment can be for the development of writing skills.

Because they involve students in negotiating collaborative writing projects, wikis are claimed to develop students' problem solving abilities and writing skills. While taking part in the feedback

and revision process, students can identify their writing weaknesses and strengths, and can use this knowledge for enhancing their overall writing performance (Godwin-Jones, 2003; Kessler, 2009). Another advantage of wikis is that they make the learning of writing become an enjoyable process rather than a set of fixed drafts. Through wikis, students may use pictures, graphics and videos to ameliorate their writing. This is obviously appealing to the digital generation, who need attractive instructional tools in their learning (Warschauer & Grimes, 2007). Again, as already mentioned, most of the wikis provide a history tracking function for viewing the contributing students and checking the writing changes that have been made. This option helps teachers to analyze students' needs and support those who need assistance (Kessler, 2009; Lamb, 2004).

Writing on wiki pages is regarded as a social practice. It helps learners to produce multiple pieces of writing, and assists teachers to assess easily the posted written works as they have plenty of time to check their students' works out of classroom settings (Richardson, 2010). Notably, wikis promote autonomy and cooperation. Learners can collaboratively work on a project without the need of teacher's presence, and can easily interact with each other. Their interactions may revolve around giving a new idea, discussing a concept, providing comments on a post, etc. (Kessler, 2009). They can collaboratively edit the written products published on wikis, and may make the necessary modifications on the written draft itself without the need to send back and forth the required revisions for each other (Arnold, Ducate, & Kost, 2012).

Richardson (2010) reported that the use of wiki facilitates collaborative writing. It offers students opportunities to work cooperatively, create content, share knowledge and function efficiently in a society that appreciates team efforts. While working collaboratively, students learn from each other and benefit from the provided peer assessment. Additionally, Warschauer and Grimes (2007) concluded that wiki-based writing assignments are more motivating than the

conventional ones. In the wiki learning environment, students are reported to write collaboratively with interest, enthusiasm and high attention to complete classroom assignments.

In fact, engagement in wiki-based writing is assumed to provide support for students' ZPD (Warschauer, 2005). The constructivism theory of learning emphasizes collaborative learning environments and social interactions. It is believed that students can construct meaningful knowledge and extend their ZPD through collaborative writing projects such as working in a team to produce essays, articles, reports, etc., and through involvement in social interactions with teachers, professionals and peers (Jones & Brader-Araje, 2002). Often with the use of wiki platforms in EFL writing instruction, these constructivists' learning principles can be efficiently applied.

There are many studies that have highlighted the salient benefits of using wikis in EFL writing contexts (e.g., Chao & Huang, 2007; Franco, 2008; Kessler & Bikowski, 2010; Lundin, 2008; McPherson, 2006; Miyazoe & Anderson, 2010; Turgut, 2009; Wichadee, 2010). For instance, according to McPherson's study (2006), wiki application provides learners with authentic readers. Recognizing that they have an audience which views and evaluates their writing, students will work with more enthusiasm and motivation on wiki platforms. McPherson (2006) pointed out that wiki platform enables students to "participate in the collaborative and recursive process of adding, deleting, changing, and shaping the group's wiki writing" (p. 70), and allows them to use different multi-modal functions such as inserting photos, graphics and videos in their written texts. These features help students to express themselves better in writing and increase their interest in learning (Warschauer & Grimes, 2007).

The results of Chao and Huang's study (2007); which investigated the effects of wiki on EFL writing development, showed clear support for the use of wiki as a medium of scaffolding for enhancing writing expressions, correcting grammatical mistakes and revising linguistic forms.

Similar findings were reported by Kovacic, Bubas and Zlatovic (2007) who examined the application of wiki platform in ESP courses. These researchers designed various wiki-based writing tasks for EFL learners in Croatia. For instance, students were asked to collaboratively write letters, essays and articles. The results indicated that students found wikis highly interesting and useful. The wiki writing environment enriched their vocabulary, improved their writing skills and helped them to learn efficiently from each other.

Additionally, Franco (2008) conducted a study that aimed at enhancing autonomous learning and empowering student-centered writing in EFL contexts through the use of wiki application. Both qualitative and quantitative methods were used for collecting and analyzing data. The results of this study suggested that wikis have many advantages for EFL students' writing progress. EFL students reported to feel highly motivated and enthusiastic for being involved in such a collaborative community. Working collaboratively was quite supportive for developing their writing skills and promoting their independent learning.

In light of the reported study findings of Lundin (2008), who analyzed wiki use in first year composition classes, it is conceivable that wikis are effective in improving four key areas including digital composition, collaborative writing, critical analysis and online authority. Moreover, according to a study by Xiao and Lucking (2008); who investigated the impact of wiki-based assessment on university learners' academic writing skills, wiki has great potential in facilitating peer assessment and promoting writing performance.

It is notable that EFL students can make significant profits from wiki-based writing environments for the enhancement of writing creativity and critical interactions (Kessler & Bikowski, 2010). Turgut (2009) stated that the use of wiki helps students to generate new ways of writing, and increases as well their degree of motivation and self-confidence. Congruent with this, Kessler (2009) reported that learners tend to enjoy collaborative writing and autonomous learning

in wiki environments. He noted that most of the learners respond positively to peer feedback; however, they do not give much importance to the correction of mistakes that do not impede meaning. This indicates that learners do not always strive for total accuracy. In this context, Kessler (2009) advocated that it is essential to design various writing tasks on wiki pages for learners, who “may benefit simultaneously from autonomous contexts in which they do not feel compelled to strive for accuracy as well as contexts that provide explicit demands for accuracy” (p. 92).

A similar pattern of results was obtained by Miyazoe and Anderson (2010) in a study conducted about the impact of wikis, blogs and forums on the development of EFL writing competence. The findings of their study revealed that EFL students were satisfied with the blended course design, and wiki was the most favorite writing tool among learners because “any learner can take advantage of a wiki, regardless of his or her proficiency in terms of acquisition of the target language” (Miyazoe & Anderson, 2010, p. 194). In another study by Wichadee (2010), who compared 35 EFL students’ writing performance before and after the use of wiki, it was reported that students’ mean score of the post writing performance test had been higher than that of the pre-test. This implies that wiki contributes positively to the enhancement of students’ writing skills. The promising findings of Wichadee (2010)’s study showed that wikis positively influence students’ feedback, writing mechanics, organization, style and accuracy.

Additionally, Lin and Yang (2011) explored EFL students’ perceptions of wiki use in writing instruction, and found that students have favorable attitudes towards the integration of this tool in writing class, though they may face some technical and psychological difficulties in its usage. In line with this, Chao and Lo (2011) concluded that EFL learners have positive attitudes towards wiki-based collaborative writing, due to the fact that wiki arouses their interest and enthusiasm in the learning process. Generally speaking, Kuteeva (2011) realized that the use of wiki leads to the following outcomes: It enhances academic writing performance, strengthens the author-reader

relationship, and raises students' caution to some writing issues such as consistency, formal coherence and grammatical correctness.

According to Alshumaimeri (2011), wiki is considered as an efficient writing tool that holds significant benefits for academic writing skills. He reached this conclusion after conducting an experiment on the usefulness of wiki-based writing with 42 EFL students from Saudi Arabia. In this research, Alshumaimeri (2011) compared the writing development of a control group that had a conventional writing instruction with that of an experimental group that received a wiki-writing programme. Notably, the results of the six-week experiment revealed that the experimental group produced better writing performance in terms of organization, cohesion and accuracy as compared to the control group.

A recent study by Arnold et al. (2012) highlighted that wikis have an immense potential for the development of EFL writing. The researchers studied the effects of wiki use on the writing development of 53 EFL learners from three different universities. Participants were required to use wiki tool to write their reviews on a novel they have read in the class, then learners' revisions and written products were evaluated to see if there was any progress in their writing. The study findings revealed that wiki has a huge potential for autonomous learning, collaborative work and writing improvement. However, teachers' guidance and support should be maintained throughout all the stages of writing on a wiki platform.

In sum, it appears that a large number of researchers have praised the potential of wikis for enriching EFL writing instruction, they considered wiki as a "powerful digital tool for knowledge development because it facilitates formal, topic-centric, depersonalized interaction" (Warschauer & Grimes 2007, p.12). Chiefly, the research literature pertaining to wiki use in EFL writing class strongly suggests that writing on a wiki facilitates communication and interaction (Chao & Huang, 2007; Parker & Chao, 2007), creates close relationship between the authors and readers (Kuteeva,

2011; Richardson, 2010), enhances students' authority and autonomy of learning (Arnold et al., 2012; Kessler, 2009), fosters critical thinking and collaboration among learners (Augar, Raitman, & Zhou, 2004; Godwin-Jones, 2003; Parker & Chao, 2007), exposes learners to a variety of web content (Knobel & Lankshear, 2006; Lundin, 2008), promotes students' awareness of audience (Kessler & Bikowski, 2010; McPherson, 2006), increases students' enthusiasm and motivation (Franco, 2008; Turgut, 2009; Warschauer & Grimes, 2007), and develops overall writing competence (Kovacic et al., 2007; Kuteeva, 2011; Miyazoe & Anderson, 2010; Wichadee, 2010; Xiao & Lucking, 2008).

1.4.2 Blogs

A blog is defined as a Web 2.0 publication system that allows users to write and publish their own individual journals, it consists of a set of posts that are arranged in a reverse chronological order, with the most recent post at the top (Crook et al., 2008). This web platform provides users with the opportunity to express themselves and expand their knowledge collaboratively (Thorne & Payne, 2005). In this respect, Huffaker (2005, p. 94) asserted that the use of blogs offers individuals "a personal space to read and write alongside a communal one, where ideas are shared, questions are asked and answered, and social cohesion is developed". Thus, blogs are regularly-updated online journals which enable users to express personal experiences, thoughts and ideas (Davies & Merchant, 2007).

Blogs have an asynchronous nature that makes it possible for users to create, post and share written works without time and space constraints (Crook et al., 2008). Typically, users can post not only written texts, but also photos, videos and audio files. In addition, anyone may read and respond to the published works since blogs could have an open access (Davies & Merchant, 2007). In fact, the application of blogs is increasingly growing in educational fields because they have useful

features that promote learning. First, they are easy to use. For instance, users may post their writing or leave a comment with a simple click on the submission button, and they can find the posted works easily as all archival blogs are organized in a chronological order with the dates stamped (Richardson, 2010). Second, they facilitate interaction and communication (Goodwin-Jones, 2003). Third, they have many benefits to literacy development (Huffaker, 2005; Wu & Wu, 2011).

Campbell (2003) pointed out that there are three types of blog use in language learning classrooms. First, the tutor blog, which is managed by the teacher for sending useful entries to students such as learning resources, course lectures and activities. In this kind of blog, only students enrolled in the class can comment on the teacher's posts. Second, the learner blog, which is used by an individual student or by a collaborative team of students as a journal for writing practice and personal reflections. Third, the class blog, where both teachers and students share the use of blog platform for collaborative writing, interaction and discussion. Campbell (2003) stated that these three types of blogs have different pedagogical purposes, thereby teachers should select the blog type that is best suited to students' needs and learning objectives.

Blog is a valuable instructional tool in EFL teaching and learning contexts. The use of blog in EFL classrooms is highly supported by the constructivist learning approach as it encourages student-centered learning, active learning and collaboration (Campbell, 2004; Chao & Huang, 2007; Godwin-Jones, 2003; Özdemir & Aydın, 2015). According to Warschauer (2005), the potential of effective learning through blogs has a strong connection with the constructivist theory, which underscores cognitive development, social interactions, authenticity and knowledge construction. Quite clearly, these principles are underpinned in blog-based learning which provides rich affordances to enhance cognitive and collaborative learning as well as practice of English use in a viable virtual environment (Miyazoe & Anderson, 2010).

Several research studies have demonstrated the usefulness of blogs for the improvement of communication, cooperation, critical thinking and language skills (Ducate & Lomicka, 2005; Özdemir & Aydın, 2015; Richardson, 2010; Sun & Chang, 2012, Zhang, 2009). As revealed in Sun's findings (2010), blog is an enjoyable tool in English language learning that promotes students' motivation, learning strategies, autonomy and authorship. Most importantly, blogs expose students to authentic and contextualized uses of language, and can serve as a means for reflection on their writing performance (Murray, Hourigan, & Jeanneau, 2007).

Godwin-Jones (2006) emphasized that blogs contribute immensely to writing development as they “encourage feedback and represent both a reading and a writing activity. In the best of cases, this kind of online writing stimulates debate, fosters critical analysis, and encourages articulation of ideas and opinions” (p. 10). In writing instruction, blog can be used as an online environment where students think, reflect and produce language for an authentic audience (Pinkman, 2005). Because of their flexible and asynchronous nature, blogs assist students to overcome their writing difficulties. They reduce students' stress and create a comfortable atmosphere for them to share knowledge, exchange personal ideas and maintain a social presence (Ducate & Lamicka, 2008; Richardson, 2010).

Blogs have been increasingly used in educational settings worldwide and a lot of support has been offered for its usage in EFL writing instruction (Campbell, 2004; Ducate & Lomicka, 2005; Miyazoe & Anderson, 2010; Sun, 2010; Ward, 2004). Zhang (2009) underscored that “blogs have formidable potentials as a useful tool for the teaching of EFL writing classes” (p.67). They are considered as an ideal resource for the learning of writing, because they facilitate self-expression, reflection, collaborative learning and knowledge exchange (Boas, 2011). Lowe and Williams (2004) argued that blogs support the writing process and provide students with an online community where they can interact, discuss ideas and offer feedback to each other, and by

“extending the discourse to a large community outside of the classroom, [the] student bloggers regularly confront ‘real’ rhetorical situations in a very social, supportive way” (Lowe & Williams, 2004, p. 2). For this reason, Boas (2011) highlighted the importance of blogging integration in instructional writing tasks such as projects, assignments, diaries, reflections and research papers.

Due to representing both reading and writing activities, blog is seen as a perfect medium for literacy development that can improve both EFL reading and writing skills (Ducate & Lomicka, 2005). Some researchers have posited that blog gives a purpose to writing, it makes students more cautious and thoughtful about their writing because they know they write for a real audience that will view and evaluate their written drafts (Barrios, 2003; Chao & Huang, 2007; Huffaker, 2005; Johnson, 2004). Blogging audience, in effect, can provide students with meaningful feedback, increase their sense of authorship and motivate them to produce a higher quality of English writing (Özdemir & Aydın, 2015). As Barrios (2003) and Goodwin Jones (2006) put it, the major benefits of blogging; which lie in strengthening the reader-author relationship, supporting student-centered learning, building grammar, improving writing techniques, facilitating interaction and collaboration, make it an environment conducive to the development of writing skills.

According to Johnson (2004), blogs afford students with the opportunity to view and check the written texts in and outside of classroom settings. Additionally, students can have access to many learning aids such as online dictionaries, grammar tutorial websites and writing resources when they are connected to blog platforms (Bloch, 2007). More interestingly, blogs help students express their academic identities and develop their assessment skills (Murray et al., 2007). In this regard, Sun and Chang (2012) confirmed that “blogs allow students to scaffold each other in navigating their writing tasks and processing academic writing knowledge, as well as negotiating and understanding their identities as academic writers” (p. 57). Blogs are likely to develop students’ academic writing skills through engaging them in the process of shaping, negotiating and creating

their writer identities. Furthermore, they help in improving the quality of students' feedback, and eventually affect the revision of the published drafts (Zhang, 2009).

A growing number of empirical studies have supported the integration of blogs in EFL writing contexts, it was reported in research literature that blogs have positive effects on EFL writing learning with respect to writing development, authenticity, learning style, attitudes towards writing, collaboration and interaction (e.g., Campbell, 2004; Chao & Huang, 2007; Ducate & Lomicka, 2008; Horváth, 2009; Murray et al., 2007; Özdemir & Aydın, 2015; Pinkman, 2005; Sun, 2010; Sun & Chang, 2012; Ward, 2004, Zhang, 2009). For instance, Özdemir and Aydın (2015) emphasized that blogs provide an innovative, reliable and authentic tool in EFL writing instruction. Bloch (2007) revealed that blogging assists students to enhance rhetorical writing strategies, it promotes academic writing as well as critical literacy and makes students “contributors and not just consumers of information on the World Wide Web” (Bloch , 2007, p. 138). Likewise, Sun (2010) asserted that the use of blogs enhances EFL writing performance, stimulates autonomous writing, and results in students' favorable attitudes towards writing instruction.

In a study by Campbell (2004); who analyzed EFL students' attitudes towards blogs using quantitative and qualitative data that were collected from surveys and interviews, it was revealed that students enjoyed learning with blogs, their motivation and confidence increased because this virtual platform offered them a collaborative learning space where they could autonomously practice and reflect on their written language. Ward (2004) explored the potential use of blogs in EFL writing instruction with first year EFL students from the United Arab Emirates, and found out that blog is an efficient technology that includes outstanding features for promoting reading and writing skills. He contended that this tool provides students with a genuine context for reading authentic texts and writing a wide variety of genre types.

Additionally, Pinkman (2005) investigated the effects of blog writing project on the improvement of the writing skills of 10 Japanese students. In her study, students were required to create written products each week and provide feedback to two or three classmates' writings. At the end of the project, data that were collected from students' questionnaires and interviews revealed that students responded positively to the use of blog in EFL writing instruction as it could promote their writing performance and arouse their interest in the learning process. Similar findings were indicated in Fellner and Apple (2006)'s study which showed that blogs lead to significant improvements in EFL writing fluency and lexical complexity.

Research literature demonstrates that blogs facilitate the development of different writing genres such as narrative, argumentative, expository and persuasive writing (Godwin-Jones, 2006; Lee, 2010; Thorne & Reinhardt, 2008). Godwin-Jones (2006) revealed that blogging leads to the development of argumentative and persuasive writing, facilitates feedback, encourages the exchange of ideas and supports collaborative learning. Similarly, Thorne and Reinhardt (2008) found that blogs are effective in improving students' narrative and expository writing performance. In accordance with these findings, Lee (2010)'s study indicated that blog is an efficient tool for fostering students' writing accuracy and fluency, language competence, feedback as well as motivation.

In a study conducted by Ducate and Lomicka (2008) about the outcomes of blog use as a long year project on EFL students' writing performance, they found that blogs positively affect writing creativity and expression, enhance ownership, create a comfortable learning environment and increase students' awareness of the target culture. Like Ducate and Lomicka (2008), Gallagher (2010) also concluded that blog use leads to enhancement in students' academic writing and motivation, and Boas (2011) reported that the unique features of blogs facilitate students'

engagement in the five process writing stages, including pre-writing, drafting, reviewing, revising and publishing.

Moreover, another study by Horváth (2009); which investigated the potential of blog for developing writing skills of Hungarian EFL students (N = 17), indicated that blog is a useful Web 2.0 tool that strengthens students' relationship with the writing community and contributes to the development of their learning autonomy. In this study, students expressed that they became more aware of each other's interests, ideas, language skills and backgrounds. Furthermore, they believed that peer comments helped them to develop their writing weaknesses and enhance their overall language competence. In this respect, Zhang (2009) pointed out that blog is a suitable platform for practicing EFL writing, expressing experiences and developing fluency. Nevertheless, it may not involve sufficient feedback and scaffolding. Therefore, it is advised to immensely encourage peer and teacher's feedback on blog learning environment to extensively enhance students' writing skills.

Similar promising results on the efficiency of blogs in EFL writing instruction were reported in Miyazoe and Anderson (2010)'s study, which investigated the use of forums, blogs and wikis in a blended-learning course of writing with 61 EFL learners at a Japanese university. This study aimed to explore the impact of the above three tools on EFL writing skills and the attitudes of students towards their usage. The research findings suggested that the three Web 2.0 tools affect positively EFL writing skills. Students stated that they were more content with the use of wikis, followed by blogs then forums. Regarding the outcomes of blog use, the research findings "indicated that students' vocabulary became much richer over the course of two semesters in the blogs" (p. 191).

While most of the research literature has highlighted the influential role of blogs in EFL writing development, few studies as that of Wu (2005) and Chiao (2006) have pointed to the drawbacks of

blog integration in writing class. The shortcomings reported in these studies are mostly related to technical aspects such as difficulties in utilizing blogs and potential risks of security. For instance, Wu (2005) used blogs in a freshman English writing class, and the results of blog surveys revealed that some students expressed negative attitudes towards blogs, lack of confidence and unwillingness to engage in blog assignments. Wu (2005) suggested that these negative results could be attributed to the newness of weblogs at that time. Similar findings were noted by Chiao (2006) who reported that a number of students held negative opinions on blog-based writing. Analysis of students' interviews and questionnaires showed that students' negative attitudes were related to the lack of privacy defense and feelings of insecurity (Chiao, 2006). To overcome these types of problems and avoid the negative outcomes of using blog as a writing tool in EFL writing instruction, Campbell (2004) suggested that students should be familiarized and trained on the use of blogs before asking them to engage in blog writing; in addition, their security and privacy should be constantly protected.

In short, despite differences in the applied methodologies, the majority of studies on blog use in EFL writing instruction have suggested that this environment has an immense potential for enhancing students' writing performance, attitudes, motivation, feedback, autonomy, critical thinking, authenticity, interaction and collaboration (Campbell, 2004; Chao & Huang, 2007; Ducate & Lomicka, 2008; Horváth, 2009; Miyazoe & Anderson, 2010; Özdemir & Aydın, 2015; Pinkman, 2005; Sun & Chang, 2012; Ward, 2004). Not surprisingly, educators are beginning to utilize it as a pedagogical tool for teaching EFL writing. Nevertheless, it should be noted that by no means is writing development always related to blogging. As Warschauer and Kern (2000) put it, blog is merely a tool that does not necessarily lead to the improvement of writing. In order to ensure its optimum efficacy, teachers should plan carefully for its integration; for instance, by

providing training on blog use and by offering sufficient feedback to help students value its application, thereby increasing their motivation in the blog-based writing instruction.

1.4.3 Other Technological Tools

In addition to blog and wiki platforms, there are some other technological tools which have great potential in enhancing EFL writing instruction such as Interactive Whiteboard, Presentation software (e.g., PowerPoint), Moodle, and Email. These tools can be used for a variety of instructional objectives as productivity, knowledge creation, course management, presentation of information and interaction.

One of the most productivity tools that can be used by EFL teachers for creating, demonstrating and interacting information is Interactive Whiteboard (IWB). IWB; also called smart board, is a white electronic board that might be used as a presentation tool or as a normal writing board. It can be used either as a touchscreen computer to freely conduct tasks, or can be connected to computers and tablets through a projector (Thomas & Schmid, 2010). If the whiteboard is connected to a computer, the computer screen and its applications will be displayed on the whiteboard. All the computer applications can be monitored by an electronic pen or simply through touching the board by finger. Everything written on the whiteboard can be saved to the computer and printed later (Schmid, 2008).

The use of IWB is potentially valuable for the learning and teaching process as it provides several effective functions such as: handwriting recognition, monitoring online content, highlighting and coloring written texts, moving and hiding objects on the board, capturing and saving notes, etc. (Glover et al., 2005; Thomas & Schmid, 2010). Betcher and Lee (2009) pointed out to the potential of IWB in supporting meaningful instruction and enabling instructors to use

various teaching styles. Learners with different needs and styles can considerably benefit from the integration of this educational tool.

According to Schmid (2008), the use of IWB allows teachers to offer better explanations and illustrations; moreover, it enhances students' motivation and learning achievement. Compared to the traditional-based instruction, the use of IWB in classrooms makes learning more attractive and efficient. The main advantage of IWB integration in classrooms lies in the fact that it saves teachers' time spent on lecture delivery and illustrations. Additionally, it increases students' attention, motivation, self-esteem and social interaction. Providing such a comfortable social environment; where students can interact, exchange knowledge and learn from each other's mistakes, is of vital importance for students' learning development (Glover et al., 2005).

Another educational tool that can be used by teachers in EFL writing instruction is presentation software such as PowerPoint. As a way of definition, PowerPoint is a software package designed by Microsoft office for creating presentations with a set of slides. Users usually use a projector to display academic presentations instead of showing them on computers or tablets (Axtell, Maddux, & Aberasturi, 2008). Recently, PowerPoint is widely used in higher education classrooms as it is available and cost effective (Newby et al., 2006).

The main key contribution that has been combined with the use of PowerPoint presentations in educational classrooms is the development of interaction between teachers and students (Apperson, Laws, & Scepanisky, 2008; Axtell et al., 2008). Another advantage of PowerPoint is the ability to integrate in academic presentations multimedia resources such as video and audio files, images, links to websites, diagrams, etc. This indicates that knowledge content can be presented in diverse ways; therefore, appealing to students' various learning styles, such as visual, aural, and kinesthetic (Mayer & Anderson, 1992; Newby et al., 2006).

The use of PowerPoint presentations helps in providing better explanations of ideas and concepts, organizing the teaching content, facilitating note-taking and saving time. Additionally, it develops learners' attention and motivation (Axtell et al., 2008; Mayer & Anderson, 1992). According to Oomenn (2012), the use of PowerPoint presentation enhances EFL instruction, engages students in authentic learning experience, helps them to practice the four language skills, organizes their thoughts and attracts their attention through the activation of their visual and auditory senses.

Moreover, the use of Moodle is claimed to provide additional support to EFL writing instruction. Moodle, an acronym that stands for Modular Object Orientated Development Learning Environment, is an open source e-learning platform that is used for creating a course website (Cole & Foster, 2010). This platform allows for the provision of online courses and lecture materials, exchange of information and engagement in interactions through synchronous or asynchronous chats (Robb, 2004). It can be also used for creating tests, quizzes and surveys, organizing writing assignments and managing classroom activities. All students enrolled in Moodle can easily have an access to it from any device with an Internet connection (Suvorov, 2010).

One of the merits of using Moodle in EFL writing instruction is that it makes it possible for teachers to take advantage of several effective features in their pedagogy such as the use of word processing in writing, use of discussion forums for interactions, administration of assessment processes, tracking of students' attendance, recording of exam grades and monitoring of classroom participation (Cole & Foster, 2010; Suvorov, 2010). Furthermore, the use of Moodle facilitates the uploading and exchange of students' written works as well as the collection of peer reviews and comments (Suvorov, 2010).

Additionally, Email is another powerful tool that might be utilized in EFL writing class. Email is considered as an asynchronous means of communication because textual messages are not

written at the same time frame in which they are received (Shang, 2007). Many studies have indicated that Email becomes a valuable tool in EFL writing classes for facilitating interaction between teachers and learners (e.g., Bloch, 2002; Shang, 2007; Warschauer, 1996). As a matter of fact, it provides multiple opportunities for interactions and communications that may not be possible in traditional classrooms. EFL learners can practice inexpensively written communication with native speakers, despite time and space limitations (Warschauer, 1996).

According to Shang (2007), Email offers EFL learners a variety of opportunities for exchanging ideas and negotiating meaning with an authentic audience using different linguistic discourses. In line with this conception, Bloch (2002) suggested that Email is a potential tool for developing rhetorical strategies and creating social relationships that might be difficult to build in face-to-face contexts. Moreover, Warschauer (1996) argued that Email provides an alternative means to face-to-face communication, helping learners to avoid the pressure of immediate and direct communications. It also helps learners to develop writing fluency and personal expression if they write for real purposes and authentic audiences.

To sum up, the Web 2.0 technologies that have been discussed in this section including wiki and blog are valuable tools for improving EFL writing fluency and accuracy. Their effectiveness depends largely on the way they are used and on the appropriateness of the conditions in which they are implemented. EFL teachers can be confined to the use of these tools in their writing instruction, or can supplement them with other electronic resources such as Interactive Whiteboards, Moodle, Emails, etc. Evidently, the adoption of technology in educational contexts is strongly supported by major learning theories. In the following section, the crucial learning theories that underpin the use of digital technologies in EFL writing instruction are discussed.

1.5 Theoretical Framework

This section examines the main educational theories that are important for understanding the learning of EFL writing when interacting with digital technologies. It provides an overview of three major learning theories including the cognitive theory of multimedia learning, the constructivist theory and the connectivist theory, and discusses as well the fundamental implications these theories arise for technology-enhanced EFL writing instruction.

1.5.1 Cognitive Theory of Multimedia Learning

Cognitivism is a learning theory that examines how the brain functions. It focuses on studying what happens inside the learners' brain and how the human cognitive system processes information (Kern, 2000). This theory grew out as a response to the inadequacies of behaviorism theory. While there are huge differences between behaviorism and cognitivism theories, there seems to be a connection between the constructivist and cognitivist principles of learning in the sense that the two theories are concerned with the construction of knowledge and both of them highlight the role of prior knowledge in human learning (Deubel, 2003).

The emergence of cognitivism theory; along with constructivism and connectivism theories, have coincided with a shift in educational environments where the focus was changed from teacher-centered approaches to student-centered approaches, which put great emphasis on cognitive processes, active learning and social interactions in learning (Kern, 2000). Unlike the constructivist theory which underscores social collaboration, individual experiences and authenticity in the learning process, the cognitivist theory considers learning as a change in the human internal knowledge that takes place due to a set of cognitive processes in the learners' mind (Ormrod, 2004).

Embracing the learning principles of cognitivism theory, Mayer (1997) proposed the cognitive theory of multimedia learning which holds the assumption that meaningful learning is based on

auditory and visual channels, and on the active process of selecting, organizing and evaluating information according to prior knowledge. Mayer (1997) posited that cognitivism is associated with schema; anything that is learnt and constructed based on a set of informational components. Accordingly, Moreno and Mayer (2000) suggested that the cognitive system of learning consists of three elements: sensory memory, working memory and long-term memory. They explained that information is detected by the sensory channels (visual/pictorial and auditory/verbal). After this, it is transformed to the working memory where it is filtered, organized and analyzed based on prior experience. Then, it is stored in the long-term memory as a logical mental construct (Figure 1.6).

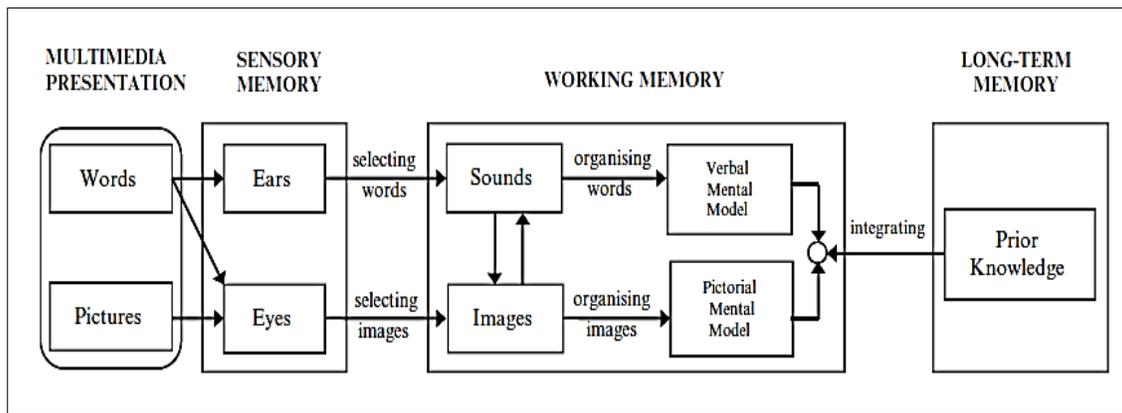


Figure 1. 6 Cognitive theory of multimedia learning (Moreno & Mayer, 2000)

As illustrated in the above figure, information is processed in two separate sensory channels. Each channel is responsible for processing a different type of information that can be either visual (e.g., pictures and animations) or auditory (e.g., sound and narration). The working memory functions as a temporary storage for information detected by sensory channels. It selects, organizes, evaluates and integrates the received information to prior knowledge. The information is then moved to the long-term memory for storage (Baddeley, 1986).

The rationale for the cognitive theory of multimedia learning is that human beings can learn from multiple resources (Mayer, 1997; Mayer & Anderson, 1992). Cognitivists view that there are

different sources of information including the ones obtained from internet and technological materials (Deubel, 2003; Mayer, 2005). Individuals may learn deeply from audio-based resources as well as from visual-based ones. Within this cognitive model, it can be induced that a variety of digital technologies such as wikis, blogs, search engines, online dictionaries, discussion forums, web collections and others have a critical impact on the development of EFL writing skills (Kern, 2000). A variety of skills that are essential for promoting writing competence such as problem solving, critical thinking, reflection and feedback could be further enhanced through the use of multimedia resources (Jonassen et al., 2003).

1.5.2 Constructivism

Constructivism is a philosophy of learning that has been associated with the work of the three notable theorists: Jean Piaget (1972), Jerome Bruner (1990), and Lev Vygotsky (1978) (Jones & Brader–Araje, 2002). All forms of constructivism share the assumption that individuals construct their own understanding and knowledge of the world around them through reflection, experience and interaction (Wilson, 1996). The learning principles of constructivist theory place emphasis on active learning, authentic contexts, personal experience, interaction and discussion (Rovai, 2004). In sharp contrast to behaviorism which focuses on memorization and passive reception of information, constructivism places emphasis on critical analysis, problem solving, decision making, active processing of information and meaningful construction of knowledge (Cooper, 1993).

Constructivism comes into two paradigms: cognitive and social. Cognitive constructivism holds the belief that individuals construct their own understandings through a set of mental processes and by relating new knowledge to prior experience (Cooper, 1993). They form their own interpretation of the world based on their personal experiences and developmental maturation.

Therefore, learning is conceived as a creative process that takes place when individuals build their meaning via a series of cognitive stages (Jonassen, 1994). This clearly denotes that it is essential to consider individuals' cognitive abilities, interests and needs in pedagogical learning contexts (Newby et al., 2006).

By contrast, social constructivism; which is influenced by the work of Vygotsky (1978), is largely based on the premise that knowledge is constructed by individuals through interactions within social contexts (Wilson, 1996). Social constructivists believe that learning is not only a cognitive process but also a social one. Therefore, knowledge is a product that is constructed socially via interactions and sustained dialogue with others such as teachers, friends and family members (Jonassen, 1994). This perspective suggests that effective learning can take place outside of classroom settings. Hence, context and culture should not be ignored in individuals' learning process as they have a valuable role to play in knowledge construction (Allen, 2005; Lantolf & Thorne, 2006).

Pedagogically, FL educational programs aligned with the constructivist learning theory should encourage active learning, hence the instructional content is assumed to be relevant, realistic and motivating (Wilson, 1996). Learners are required to actively participate in the learning process, and teachers are supposed to direct and facilitate the instructional activities. Special attention needs to be allocated towards authentic learning contexts in which learners can explore, discover and experience the educational materials (Cooper, 1993, Herrington & Oliver, 2002). Additionally, learners should be encouraged to engage in interactions and negotiations with teachers and peers, to ask questions, to critically analyze information, to relate new information to prior knowledge and then construct new learning (Jones & Brader-Araje, 2002). Teachers are advised to use the induction method in their instruction, challenging learners to discover and interpret meaning from problems. Moreover, teachers are assumed to address the different learning styles and needs of

learners, and design authentic assessment methods that take into account learners' differences (Rogers & Freiberg, 1994).

Under constructivism, FL learning is a part of social interaction, which should not be attributed solely to the cognitive processes of individuals (Lantolf & Thorne, 2006). FL learners acquire the target language within social contexts through using it in interactions and negotiations with speakers of that language. In these respects, technological resources and input provided by others in online environments can greatly assist learners in promoting their FL skills (Belz, 2003; David, 2001). Not surprisingly, the constructivism theory gives strong support to the implementation of digital technologies in FL instruction as they offer potential for the development of interactive and collaborative learning, social scaffolding, and learners' ZPD (Thorne, 2005; Warschauer, 2005).

Technology integration in FL writing instruction is considered as an optimum means for the application of constructivist learning principles (David, 2001; Lamy & Hampel, 2007; Warschauer & Kern, 2000). Particularly, the interactive nature of digital technologies aligns with the basic learning principles of constructivism theory (Newby et al., 2006). Through the use of Web 2.0 tools such as Google Docs, wikis, blogs, forums and other tools, FL learners would have ample opportunity to interact and discuss with others, regardless of time and location constraints (Warschauer, 2005). They can communicate with real audiences, participate in online problem-solving issues and engage in collaborative writing activities (Rovai, 2004). Such authentic learning contexts would motivate students and bring positive effects to the development of their writing skills (Belz, 2003; Cunningham, 2000).

Moreover, the collaborative and cooperative learning nature of digital technologies originates from a constructivist perspective (Jonassen, 1994). Technological applications allow FL learners to engage in collaborative learning activities, group work and meaningful discussions in genuine contexts (Parker & Chao, 2007). They also offer learners chances to exchange constructive

feedback, express opinions and participate collaboratively in a variety of writing tasks (Chen, 2016). Because learners have the opportunity to receive contextualized linguistic input and produce ample language output, they can acquire new linguistic forms and constantly refine their writing performance (Belz, 2003; David, 2001). Additionally, digital technologies provide learners with a vast spectrum of educational resources and offer them access to a plethora of knowledge domains, thereby helping them to elaborate their understanding of different subject matters, and contributing immensely to their overall cognitive and social development (Lamy & Hampel, 2007; Thorne, 2005).

Another key perspective of social constructivism approach that has been combined with technology-enhanced writing instruction is the development of students' ZPD. Through engagement in collaborative writing and online interactions with teachers, professionals and peers, learners can support the enhancement of their ZPD (Warschauer, 2005). From this perspective, the use of Web 2.0 tools is regarded as an ideal means for writing that provides students with effective scaffolding, guidance and feedback on various writing practices (Miyazoe & Anderson 2010). Typically, FL learners may encounter new information, complicated input or unfamiliar linguistic forms that need explanations, they can get assistance about all the linguistic problems and writing difficulties from teachers and experts in online learning environments (Warschauer & Kern, 2000). Thus, technology integration enhances learners' knowledge, extends their ZPD, and eventually develops their writing performance (Cunningham, 2000).

On the whole, the major learning perspectives of constructivism which include authentic context, knowledge construction, interaction and collaboration are facilitated through the use of digital technologies in EFL writing instruction. By implementing these technologies adequately in EFL teaching practices, a constructivist learning environment can be created for ensuring an effective development of EFL writing skills.

1.5.3 Connectivism

Developed by George Siemens (2004) and later on elaborated by Stephen Downes (2005), connectivism is a learning theory for illustrating the learning process in the digital age (Bell, 2011). It is based on the perspective that learning is a process of creating connections and networks which does not reside only in the human mind, it can take place in electronic databases, technological devices and digital tools that are used by a learner (Siemens, 2005). According to connectivists, digital technologies affect the way individuals communicate, learn and construct knowledge. These technologies have increased the opportunities of producing and sharing information, developing ideas, and enhancing knowledge development (Kop & Hill, 2008). Therefore, digital networks and connections are more important than the current state of knowledge because they enable a human being to learn more (Siemens, 2005).

According to connectivism, knowledge evolves from connecting nodes; learning resources that may involve non-human appliances (e.g., electrical device, digital tools, technological machines). Knowledge construction can thus be built when individuals access, process, assess and use online information with the assistance of learning communities (Siemens, 2005). Siemens (2005) underscored that currency (accurate and up-to-date knowledge) is the goal of learning, and that technology-based education or what he calls network theory plays a vital role in facilitating continual learning. With technology-based learning, individuals have immense opportunities to expand their knowledge, regardless of time and place constraints (Wang & Gearhart, 2006). Obviously, the ability to access, manipulate and create connections between nodes is the core of connectivist learning; therefore, students' skills of building connections between fields, ideas and concepts should be given special attention in educational settings (Bell, 2011).

Siemens (2005) highlighted three fundamental principles of learning in the connectivist theory. Firstly, learning is a process that takes place through connectivity to a community. Community is considered as a node that belongs to a wide network of nodes. It facilitates knowledge development, interaction, discussion and exchange of ideas. Secondly, knowledge does not reside only within individuals, it can lie within a variety of digital devices and across various information networks. Hence, knowledge development results from engagement with diverse nodes. Thirdly, due to the continuous change of information, there is a need to always update one's knowledge. Additionally, individuals should enhance their skills of selecting, assessing and using information. They should develop their ability of evaluating the accuracy and validity of information found in online websites. Such skills; which are associated with digital literacy components, bring positive effects to the lifelong learning process (Bell, 2011; Kop & Hill, 2008).

An implication of the connectivism learning theory for technology-enhanced writing instruction is that learning can take place beyond formal educational settings, it can lie within technological networks (Abrams, 2013; Wang & Gearhart, 2006). In this regard, Downes (2007) acknowledged that

Learning, in other words, occurs in communities, where the practice of learning is the participation in the community. A learning activity is, in essence, a conversation undertaken between the learner and other members of the community. This conversation, in the web 2.0 era, consists not only of words but of images, video, multimedia and more. (p.5)

Therefore, connectivists propose that networked learning activities; which expand students' connectivity beyond classroom settings and offer them various learning opportunities, should be incorporated in writing instruction (Wang & Gearhart, 2006). Such network-based activities would engage students in active learning experiences, thereby enhancing their writing competence and increasing their motivation in the learning process (Abrams, 2013). For example, searching in a variety of resources such as Google, YouTube and electronic databases enables learners to increase

their learning expertise and social integration. Within well-organized networked learning activities, students can support each other, exchange critiques and comments, develop cognitive skills, engage in constructing knowledge and successfully build a social presence in online learning environments (Garrison & Anderson, 2003).

Obviously, connectivism theory; which is a relatively new theory, has become the learning theory of the digital age where individuals learn and construct knowledge digitally through participating in networked communities and virtual learning environments such as blogs, wikis and social media. It reflects the importance of being digitally literate and the underlying values of new technologies that have made web reading and writing a reality (Siemens, 2005). This theory asserts that today's learning should be open, active, autonomous and process oriented. It stresses as well the need for developing learners' digital literacy skills, because having an expertise with digital resources would help learners to enhance their overall learning development (Kop & Hill, 2008).

To sum up, the learning of EFL writing requires autonomous, independent, active and creative knowledge development. To correspond to these demands, there is a need to apply the principles of the major learning theories that guide the teaching practices of technology-enhanced writing instruction. Therefore, this study is based on the learning premises of the cognitive theory of multimedia learning, the constructivist theory and the connectivist theory, which contend that learning is a process of developing knowledge, skills and ideas through using various information channels in a net connected interaction with teachers, professionals, peers and digital resources.

Conclusion

In conclusion, this chapter provided a review of literature on key concepts related to this study, including digital technologies, digital literacy, approaches to EFL writing instruction, use of Web 2.0 tools for the learning of EFL writing, and theoretical perspectives about technology integration

in EFL writing classroom. The literature review has suggested the incorporation of digital technologies in tertiary EFL writing instruction because they offer great affordances for the development of the learning and teaching processes. The affordances include the capacity to enhance student-centered learning, interaction, collaboration, authenticity, situated writing, critical thinking and motivation. The effective use of these technologies requires having an adequate level of digital literacy on the part of EFL teachers and students. In this context, digital literacy does not involve only technical capacities but also cognitive and social–emotional skills. Developing these skills to use technology should be a high priority for EFL teachers and learners; interestingly, one of the best ways to promote their digital literacy development is to incorporate digital technologies in higher education settings.

In addition, the literature review indicates that as EFL writing is a complex skill to teach, there are various instructional approaches for it such as the product approaches, the process approach, the genre approach and the process-genre approach. The choice of the most effective teaching approach needs to be made in reference to classroom learning objectives. Quite often, the process-genre approach is the most favorable pedagogy for the modern writing classroom as it combines the key elements of the earlier approaches, providing learners with sufficient genre knowledge, and at the same time bringing out their potential through engaging them in the different stages of the writing process.

As mentioned in this chapter, the number of digital tools that are valuable for the teaching and learning of EFL writing skills is overwhelming. Particularly, the use of Web 2.0 tools such as blogs, wikis, and forums would provide considerable support for the enhancement of EFL writing performance. Therefore, the major learning theories such as the cognitive theory of multimedia learning, constructivism, and connectivism encourage technology integration in EFL higher education settings. Having provided a literature review on the crucial concepts of this study, the

next chapter, Chapter Two, discusses the research methodology, which presents the research design, participants, data collection methods, procedures and data analysis methods used for the current study.

CHAPTER TWO: RESEARCH METHODOLOGY

Introduction

This chapter presents the research methodology employed for this study. It begins with a description of the research design and a justification for the use of mixed methods approach. Afterwards, it describes the study participants and the data collection methods, which include questionnaires, interviews, and writing tests. Then, it outlines the data collection procedure and data analysis methods. The chapter ends with a description of the pilot testing and a discussion of the ethical issues considered in this study.

2.1 Research Design

Research is defined as an endeavor in which we are “...trying to find answers to questions, an activity every one of us does all the time to learn more about the world around us” (Dörnyei, 2007, p.15). The term research design refers to “a plan of how a researcher intends conducting the research” (Babbie & Mouton, 2001, p.74). Within this framework, every researcher attempts to apply an appropriate method in order to find out a conclusion to his study. According to Bryman (2012), the research design is determined by the research questions and objectives, thus the type of research design differs according to the research issue.

There has been a long debate among scholars and researchers regarding which method should predominate in applied linguistics research. While some researchers preferred to use quantitative methods in which numerical data is analyzed statistically, others preferred qualitative methods in which text data is analyzed using non-statistical procedures. In recent years, however, experts in educational research have advocated the adoption of a mixed methods approach that combines qualitative and quantitative methods (Bryman, 2012; Creswell & Garrett, 2008).

The main purpose of mixed methods research is to determine whether qualitative and quantitative methods yield the same results; therefore, the use of this approach is advantageous because it ensures the consistency of the collected data and strengthens the research design, since both quantitative and qualitative methods have inherent limitations (Maxwell, 2013). Neither quantitative nor qualitative methods are sufficient on their own to analyze all the trends and aspects of a research issue; but, when combined, they provide a more thorough analysis (Johnson & Onwuegbuzie, 2004).

To shed light on the research issues from a holistic view, this study employed a quasi-experimental research design with a mixed-methods approach to combine, collect, and analyze quantitative and qualitative data at different research phases. Quantitative data, which are typically associated with traditional surveys and tests, provide information about participants' behaviors, competencies, attitudes and beliefs in a short time. In addition, the quantitative model allows for context-free generalizations if well-constructed and validated instruments of measurement are utilized. Qualitative data, which are associated with field methods as interviews and observations, facilitate the investigation of people's realities, experiences, feelings, perspectives, attitudes, and internal thoughts (Verma & Mallick, 1999).

The rationale for using the mixed methods approach in this study is the fact that it enables the researcher to benefit from both quantitative and qualitative models. This design is useful in providing relevant information from two different perspectives; thus, it allows for a more thorough and comprehensive analysis than designs based on the use of either a quantitative or qualitative model (Creswell, 2008). In this regard, Chenail (2000) emphasized that the mixed method approach permits a researcher to explore the research issue from multiple perspectives in order to gain a comprehensive understanding of the research inquiry; this type of design triangulates multiple forms of data in order to produce general descriptions, rich analyses, and adequate explanations.

The quantitative methods used in this study included writing tests and survey questionnaires. The current research utilized a writing test developed to measure EFL students' writing proficiency and relate it to their digital literacy proficiency, as well as a pretest and posttest for the experimental and control groups of the study. A survey questionnaire was also used to obtain information from the study participants as part of the quantitative data. The survey questionnaire was used to investigate the digital literacy competency of EFL teachers and students, EFL teachers' attitudes towards digital technology incorporation in EFL writing instruction, and the current status of digital technology integration in EFL writing classrooms.

Regarding the qualitative methods employed in this study, the researcher utilized semi-structured interviews and open-ended questions to learn more about the participants' perspectives on digital literacy competence, as well as their attitudes, beliefs, and uses of digital technology in EFL writing classrooms. In order to give a complete picture, qualitative data were collected to augment and expand upon quantitative data. Consequently, the data collection instruments yielded both numerical and narrative data for determining the study questions' conclusions. This design allowed the researcher to evaluate instances of agreement and disagreement between the two distinct data sources; hence, triangulation was achieved in this study by combining several data sources (Creswell, 2008).

Creswell (2008) noted that while adopting a mixed methods approach, a researcher must make decisions regarding the priority, implementation, and integration of data (p. 557-558). Priority refers to a researcher's emphasis on quantitative or qualitative data (Johnson & Onwuegbuzie, 2004). Implementation is the decision of whether quantitative data and qualitative data should be gathered simultaneously or sequentially during the research process. Integration refers to the researcher's decision to either integrate or separate qualitative and quantitative data at the analytical

phase. (Onwuegbuzie & Collins, 2007). In light of this, both quantitative and qualitative data are given equal importance in this study. The two distinct data sources were collected sequentially. The study's conclusions and inferences are based on the combination of the two data sources. The qualitative data was analyzed to confirm or disconfirm of the quantitative model's results. Therefore, the two sets of data were triangulated to determine whether or not they would generate the same results.

2.2 Case Study

This study examined the current status of digital technologies and digital literacy in academic writing instruction at the English Department of M'sila University. It collected data from tertiary EFL teachers and third-year EFL students participating in an academic writing course. Therefore, this study employed a case study approach, which is one of the most common approaches in applied linguistics research (Dörnyei, 2007).

A case study provides a valuable example of individuals in real contexts to help illustrate the ideas more thoroughly (Cohen, Manion, & Morrison, 2007). The term case study can be defined as “a single instance of a bounded system, such as a child, a clique, a class, a school, a community” (Creswell, 1994, p.12). According to Yin (2003), a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p. 13). Researchers have stressed that an in-depth investigation of all the parts and patterns of a particular context is necessary to better understand a case and provide a comprehensive explanation for why things happen the way they do. If a single case is well investigated, then generalizations can be made (Sturman, 1994, p.61).

A case study is an in-depth examination of what occurs within a particular group; consequently, it was well suited for this research. The current research is a case study of the English Language Department at M'sila University, using a sample of forty EFL teachers and one hundred fifty third year EFL students. According to Stake (2000), researchers lean “toward those cases that seem to offer opportunity to learn” (p. 446); therefore, this case was selected due to reasons of convenience, accessibility and learning opportunity. The fact that the researcher is a member of the investigated context facilitated the collection and interpretation of data. The researcher's professional acquaintance of the participants assisted in gaining their consent and collaboration. This familiar context enabled the researcher to collect data over an extended period of time, resulting in rich data and comprehensible analyses of the case.

The rationale for conducting a case study is that it provides a thorough understanding of the target subjects in their actual environments, and it facilitates the investigation of a complex phenomenon as well as the comprehension of its causes and effects in a given context (Carey, 2012; Yin, 2003). According to Dörnyei (2007), case studies are useful in investigating social and educational problems in a short period of time; in addition, they allow for “rich and in-depth insights that no other method can yield” (p. 155). Through a case study, researchers can comprehend, analyze, and offer solutions for the difficulties faced by an organization or institution, and readers can apply the findings to their own real-world contexts (Yin, 2003). Due to these factors and the fact that this study is an in-depth investigation of a specific group within its context, the case study methodology was the most appropriate for completing this research. Generally, the findings of a case study cannot be generalized to a larger population. Therefore, a mixed-methods approach was employed to collect and compare both qualitative and quantitative data and to increase the possibility of transferring this study's findings to other contexts.

2.3 Research Participants

In research, the term population refers to “a sum total of all the elements or cases that meet the definition of the unit of analysis” (Babbie & Mouton, 2002, p. 138), whereas the sample refers to a group of respondents or things drawn from the population in order to draw inferences and generalizations about it (Graziano & Raulin, 2009). Regarding this study, the population consists of all sixty EFL teachers and three hundred EFL students at the English Department of M’sila University. The study sample consists of forty EFL teachers and one hundred fifty EFL students in their third academic year. The following sections present information about the teachers and students who participated in this study.

2.3.1 Teacher Participants

Forty teachers participated in the survey questionnaire. This sample size consisted of twenty three male teachers (57.5%) and seventeen female teachers (42.5%). Table 2.1 presents the gender ratio of the survey teacher sample.

Table 2. 1 Gender ratio of the survey teacher sample

	Frequency	Relative Frequency
Male	23	57.5
Female	17	42.5
Total	40	100

Regarding age range, the majority of teacher participants (32.5%) are between the ages of 26 and 35, while twelve teachers (30%) are between the ages of 36 and 45. In addition, one participant (02.5%) is a young instructor under the age of 25. Ten instructors (25%) are between the ages of 46 and 55, while four teachers (10%) are older than 55. The following table shows the age ratio of survey teacher participants.

Table 2. 2 Age ratio of the survey teacher sample

	Frequency	Relative Frequency
Less than 25 years	01	02.5
26 – 35 years	13	32.5
36 – 45 years	12	30
46 – 55 years	10	25
Over 55 years	04	10
Total	40	100

Concerning the majors of the instructor participants, the majority (35%) are Didactics majors (TEFL). Twelve (30%) of them hold degrees in Applied linguistics, eight (20%) in Civilization and literature, four (10%) in Translation, and two (05%) in ESP (English for specific purposes). Table 2.3 displays the different majors of the participating teachers.

Table 2. 3 Majors of the survey teacher sample

	Frequency	Relative Frequency
Applied linguistics	12	30
Didactics (TEFL)	14	35
Civilization and literature	08	20
Translation	04	10
ESP (English for specific purposes)	02	05
Total	40	100

In terms of their academic degrees, the majority of teacher participants (47.5%) hold a Doctorate degree. Seventeen of these respondents (42.5%) have Magister degrees, while two (05%) have master's degrees, and two (05%) have other degrees (Table 2. 4).

Table 2. 4 Academic degrees of the survey teacher sample

	Frequency	Relative Frequency
Master	02	05
Magister	17	42.5
Doctorate	19	47.5
Other	02	05
Total	40	100

The participating teachers have varied teaching experience. The majority of participants (42.5%) have 11 to 15 years of experience, eight (20%) have 15 to 20 years of experience, seven (17.5%) have 6 to 10 years of experience, six (15%) have more than 20 years of experience, and two (05%) have 1 to 5 years of experience (Table 2.5).

Table 2. 5 Teaching experience of the survey teacher sample

	Frequency	Relative Frequency
01-05 years	02	05
06-10 years	07	17.5
11-15 years	17	42.5
15-20 years	08	20
More than 20 years	06	15
Total	40	100

Among the forty EFL teacher participants of this study, five were chosen for conducting the semi-structured interviews. The interview sample was purposive in that all the interviewees were carefully selected so as to provide rich data to the study. In fact, more than five teachers were willing to take part in the research interview; hence, the five participants were selected with considerations to generate sufficient data for achieving a comprehensible analysis and well-informed interpretation. The cross-section method was used to recruit the interview participants. This method ensures a balance in the selection of participants, taking into account the selection of

different participants according to their gender, age, background and experience, which results in a rich and varied data set (Bryman, 2012).

Out of twelve teachers willing to take part in the study interviews, two teachers were chosen for the trial interviews. After conducting the pilot interviews and reaching the final shape of interviews, five teachers were chosen as key participants. In adherence to the selection criteria, the researcher selected two teachers who had extensive teaching experience, and were recognized for their knowledge and understanding of digital technologies. These teachers were perceived by their peers as competent in the use of digital technologies. They helped in providing useful information regarding both their current and former instructional practices. The selection of these teachers enhanced the comprehension of the issue under investigation. Rich data related to their digital literacy abilities, perceptions, and usage of digital technology in EFL writing instruction were collected, allowing for an in-depth understanding of the topic.

Three additional teachers with varying years of teaching experience were selected for interviews in an effort to gain a deeper understanding of the technology integration experiences of the younger generation. It was hoped that these teachers would provide more insights and detailed information about the digital skills of the present generation and the current perspectives on digital technology integration in EFL writing instruction.

All of the interviewees were working on permanent, official contracts. Three of the five participating teachers are male, while the remaining two are female. Two teachers are between 32 and 35 years old, one is 41 years old, and two are between 56 and 59 years old. Regarding the academic degrees held by the interviewees, three instructors have a Doctorate's degrees in Didactics, and two teachers have Magister's degrees in Applied Linguistics. The teaching experience of these interviewees ranged from five to more than twenty years. Three of the interviewees are lecturers, while the other two are assistant instructors at the English Department

of M'sila University. Participants' real identities are replaced with pseudonyms so that no participant can be identified as an individual. The background of the interview participants is illustrated in Table 2.6.

Table 2. 6 Background of the interview participants

Teacher	Gender	Age	Experience	Degree	Academic Position
A	Male	59	27 years	Doctorate	Lecturer
B	Male	56	26 years	Doctorate	Lecturer
C	Female	41	14 years	Magister	Assistant instructor
D	Male	35	09 years	Doctorate	Lecturer
E	Female	32	05 years	Magister	Assistant instructor

Upon the selection of these teachers, they were requested to take part in this research. Each teacher was given an adequate explanation of the purpose and nature of the study, they were also informed about the scope of their participation. All of them were offered a consent informed form that involved a thorough description of the study (See Appendix (1) – Informed Consent Form). Before they indicated their written agreement, it was explained to these teachers that they could accept or decline the participation, and that they have the right to withdraw from the study at any time they wanted. All the five teachers gave their verbal and written consent to participate in the study.

2.3.2 Student Participants

Regarding the survey student sample, quantitative data were collected from eighty third year EFL students who were taking English Academic Writing Course at the English Department of M'sila University in 2018/2019. Among these eighty students, sixty six (82.5%) are females, and fourteen (17.5%) are males. The following table presents the gender distribution of students who participated in the survey.

Table 2. 7 Gender ratio of the survey student sample

	Frequency	Relative Frequency
Male	14	17.5
Female	66	82.5
Total	80	100

Concerning their age range, the majority of the student participants (63.75%) are aged between 19 to 22 years, seventeen students (21.25%) are aged between 23 to 26 years. Nine students (11.25%) are between 26 to 30 years old, while three (03.75%) are over 30 years old (Table 2.8).

Table 2. 8 Age ratio of the survey student sample

	Frequency	Relative Frequency
19 – 22 years	51	63.75
23 – 26 years	17	21.25
26 – 30 years	09	11.25
over 30 years	03	03.75
Total	80	100

The sample of the study experiment is composed of seventy third year EFL students from two classes that were taking English Academic Writing Course at the English Department of M’sila University in the academic year of 2018–2019. One of these classes is assigned randomly as the experimental group and the other one constitutes the control group. Students in the control group had traditional writing instruction, while those in the experimental group were taught academic writing using technology-enhanced instruction. These students had already studied English writing for four semesters. They had learnt how to write various types of paragraphs and essays. The inclusion of the two groups in this study allowed for the investigation of the impact of technology-enhanced learning on academic writing development, as well as the collection of data about students’ experiences with technology integration in EFL writing instruction.

The experimental group consists of thirty five students. Twenty nine females (82.85%) and six males (17.15%) formed this group. The control group consists of thirty five students, twenty six of whom are female (74.29%), whereas nine are male (25.71%). The gender distribution of the experimental and control groups is shown below.

Table 2. 9 Gender ratio of the experimental group and the control group

		Frequency	Relative Frequency
Experimental group	Male	06	17.15
	Female	29	82.85
	Total	35	100
		Frequency	Relative Frequency
Control group	Male	09	25.71
	Female	26	74.29
	Total	35	100

2.4 Data Collection Methods

This study employed a sequential method of data collection, with qualitative data built upon quantitative data. The quantitative data was collected from EFL teachers' and students' questionnaire surveys, as well as writing tests administered to examine the academic writing performance of the student participants. The qualitative data was collected from semi-structured interviews with teachers and open-ended answers from students. Hence, surveys, interviews, and scores of writing tests served as the primary data sources for this study. These research methods are illustrated in Figure 2.1.

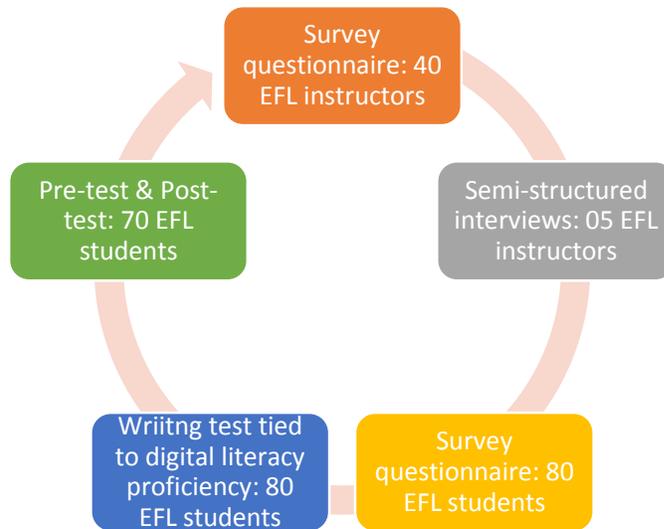


Figure 2. 1 Research methods

Prior to the data collection process, the researcher contacted the participants to inform them about the purpose and nature of the study. An informed consent form (See Appendix (1) – Informed Consent Form) that involved an adequate description of the study was distributed to these participants in order to declare their written agreements. Diverse sources of data were used to answer the research questions and achieve the study’s objectives. Before starting a study, according to Wellington (2000, p. 50), it is essential to create “a question-methods matrix” in order to identify the most relevant research methods. Therefore, the following question-methods matrix was employed to highlight the research methods utilized to address each research issue.

Table 2. 10 Research questions-methods matrix

Research Questions	Research Methods	Objectives
1. How do EFL teachers and students evaluate their levels of digital literacy competence?	Teachers' questionnaire Students' questionnaire Semi-structured interviews	To collect quantitative and qualitative data about the participants' technological expertise and assess their overall digital literacy proficiency.
2. What are the attitudes of EFL teachers towards digital technology integration in EFL writing instruction?	Teachers' questionnaire Semi-structured interviews	To collect quantitative and qualitative data about the perspectives of teachers on the use of technology in EFL writing instruction.
3. To what extent do EFL teachers integrate digital technologies in EFL writing instruction?	Teachers' questionnaire Semi-structured interviews	To collect quantitative and qualitative data on the current status of technology integration in EFL writing instruction, and to determine which technology behaviors are most frequently employed by teachers.
4. How does EFL students' digital literacy competence affect their academic writing development? In other words, is there any relationship between EFL students' digital literacy proficiency and their academic writing performance?	Students' questionnaire Writing test	To collect quantitative and qualitative evidence on the contribution of digital literacy to the writing development of EFL students.
5. What is the impact of digital technology integration on EFL students' writing performance?	Pre-test & Post-test Open-ended answers	To collect quantitative and qualitative data on the effects of technology use on the writing performance of EFL students, as well as to investigate students' experiences with technology-enhanced writing instruction.

As demonstrated in the table above, multiple sources of data were used to answer each research question. For example, in order to answer the second research question, teachers' surveys and semi-structured interviews were used to collect data on EFL teachers' attitudes toward the integration of digital technology into EFL writing instruction. Similarly, data about the effects of digital technology integration on EFL students' writing improvement were collected through a pre-test, post-test, and students' open-ended responses. The research methods used in this study are discussed in the subsequent sections.

2.4.1 Questionnaire

Questionnaires are used in educational research in order to “to collect data about phenomena that are not directly observable: inner experience, opinions, values, interests, and the like” (Gall, Gall, & Borg, 2007, p. 228). According to Cohen et al. (2007), the questionnaire survey is a useful instrument that provides structured and numerical data without the need of a researcher’s presence, and its analysis is so straightforward. Mason (2002, p.65) stated that the advantages of questionnaires lie in the fact that they “minimise bias through the standardisation of the questions”.

In this study, a survey instrument was developed to investigate the effectiveness of digital technology and digital literacy in EFL writing instruction. It attempted to collect data about the digital literacy competence of participants, teachers’ attitudes towards technology integration in EFL writing classrooms, and the current status of technology integration in EFL writing instruction at M'sila University’s English department. This survey was distributed to EFL teachers and students and included both open-ended and closed-ended questions in order to collect quantitative and qualitative data. The questionnaires of teachers and students are explained below.

2.4.1.1 Teachers’ questionnaire

The survey of teachers inquired about their digital literacy competency, attitudes towards digital technology, and usage of digital technology tools in tertiary EFL writing instruction. It served as a reference to the more in-depth questions posed during the interview sessions and as a data source for triangulating the findings of the interviews. In this survey, close-ended questions were used. The teacher participants were asked to answer 67 closed items soliciting responses on a five likert-scale and 05 multiple-choice items. The benefit of closed questions is that they are more structured, straightforward and easier to analyze (Mason, 2002).

The teachers’ survey questionnaire consists of four sections: Background information, digital literacy level of EFL teachers, EFL teachers’ attitudes towards technology integration, and status of technology integration in EFL writing instruction (See Appendix (2) – Teachers’ Survey Questionnaire). Each section is described in depth below.

2.4.1.1.1 Section one: Background information

To collect the personal and professional information of the participants, a demographic section was designed. Participants were asked to respond to five questions regarding their gender, age, major, academic degree, and years of teaching experience. The purpose of this section was to identify the demographic variables of the participating teachers.

2.4.1.1.2 Section two: Digital literacy level of EFL teachers

This section was developed to assess the perceptions of EFL teachers on their digital literacy proficiency and technology skills. It included 35 closed-ended questions and two multiple-choice questions pertaining to competency in the technological tools that are frequently employed in the 21st century educational curriculum. Participants were required to respond to the 35 closed-items and rate their digital literacy proficiency on a five-point Likert scale: (1) illiterate, (2) poor, (3) average, (4) good, and (5) excellent. They were also required to select one of the suggested responses for the two multiple-choice questions.

The questions utilized in this section were derived from Lei's (2009) Technology Use Survey. For the purpose of this study, Lei's (2009) survey, which assessed teachers' technology knowledge and digital competency, was modified by simplifying complex vocabulary and assigning all items to a five-point Likert scale.

2.4.1.1.3 Section three: EFL teachers' attitudes towards technology integration

This section was designed to examine the opinions of teacher participants on incorporating technology into tertiary EFL writing instruction. It included 14 closed-ended questions about the participants' attitudes and beliefs about the use of digital tools in writing classrooms. The participants were asked to rate their personal attitudes on a five-point Likert scale: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree.

The closed-items used in this section were adapted from a Computer Attitude Scale (CAS) designed by Loyd and Loyd in 1984 and later modified in 1985. The original CAS of Loyd and Loyd

(1985) consisted of 40 items distributed on a four-point Likert scale to measure anxiety, liking, confidence, and views about the effectiveness of technologies. Since the focus of the present study is on digital technologies and digital literacy in EFL writing education, adaptations were made to the CAS items drawing on a literature review of teachers' attitudes towards the use of digital technology in EFL writing instruction. The researcher changed the original CAS questionnaire to be more applicable to technology-enhanced writing instruction in a tertiary EFL context. Clarity and simplicity of items were considered in the adaptation of CAS, and a five-point Likert scale was utilized. Except for three items, which had negative polarity, all closed items in this section had positive polarity.

2.4.1.1.4 Section four: Status of technology integration in EFL writing instruction

This section aimed at investigating the current status of technology usage in EFL writing instruction. Participants were asked to select statements describing the technology tools and web-based activities they utilized most frequently to teach EFL writing skills. On a five-point Likert scale, they were asked to rate how frequently they integrated digital resources into their EFL writing instruction: (1) never, (2) rarely, (3) sometimes, (4) most of the time, and (5) all the time. In addition, participants were asked to rate the department's level of digital technology integration using three multiple-choice questions.

This section's questions were designed based on the literature review of EFL technology-based teaching and EFL writing instruction. The relevant literature was reviewed in order to determine the technology tools and web-based activities utilized in EFL writing instruction. It was found out that word processors, presentation programs, e-mail exchanges, web-discussion boards, web-reading exercises, search engines, etc. were commonly employed in EFL writing instruction. Therefore, these digital tools were taken into account in order to create questionnaire items inquiring about EFL teachers' technological practices in relation to EFL writing teaching.

2.4.1.2 Students' questionnaire

In this study, a questionnaire was developed to investigate EFL students' perceptions of their level of digital competence, their perspectives on the impact digital literacy proficiency has on the

development of writing skills, and their attitudes toward the use of technology in EFL writing instruction (See Appendix (3) – Students’ Survey Questionnaire). The students’ survey, which consisted of both closed and open-ended questions, was divided into the following sections.

2.4.1.2.1 Section one: Background information

This section was designed to collect information about the participants’ personal background. The participating students were asked to respond to two questions regarding their gender and age.

2.4.1.2.2 Section two: Digital literacy level of EFL students

The digital literacy survey was administered to 80 EFL students so as to measure their overall digital literacy proficiency and to determine whether their digital literacy competency provides substantial support for the development of their writing skills. In the first part of this section, participants were asked to respond to 35 closed-ended questions and assess their digital literacy proficiency on a five-point Likert scale: (1) illiterate, (2) poor, (3) average, (4) good, and (5) excellent.

In the second part of the section, the participants were asked 06 open-ended questions about the effects of digital literacy competency on the improvement of EFL students’ writing skills. Students were required to explain how they utilized digital capabilities for writing and how digital literacy contributed to the development of their writing skills.

2.4.1.2.3 Experimental group’s post-test questions

This section aimed at collecting qualitative data on the attitudes of the experimental group participants towards technology-enhanced EFL writing instruction (See Appendix (9) – Experimental Group’s Post-test Questions). It was administered to the experimental participants after completing the technology-enhanced writing instruction and the post test. The participants were asked to respond to 5 open-ended questions regarding their perspectives on the use of web-based tools such as wikis, blogs, and other digital tools in writing instruction. They were also asked about the difficulties they might have faced in technology-enhanced EFL writing course.

After drafting the survey questionnaire, it was handed to a panel of teacher experts for their feedback and then pilot-tested to determine the appropriateness of the survey items, identify any linguistic ambiguities, and obtain suggestions for revision. Several improvements were made to the survey based on the comments provided by teacher experts. The survey was then pilot-tested to discover any issues with questionnaire length, question types, layout, and readability. Validity and reliability of the questionnaires were calculated, and the results of these calculations are reported within the pilot study section.

2.4.2 Writing Test Correlated with Digital Literacy Proficiency

The researcher designed a writing test to measure the writing performance of EFL students and associate it with their digital literacy competency. Eighty participating students (different from the control group and experimental group's participants) took the test during the first semester of the academic year 2018-2019 at the English Department of M'sila University. Participants were asked to write a compare and contrast essay about a particular topic (See Appendix (4)–Writing Test Correlated with Perceived Digital Literacy Proficiency). The purpose of this test was to determine whether the participants' writing performance correlates positively with their perceived level of digital literacy competence.

Before using the writing test in the actual study, it was administered to a pilot sample consisting of ten third year EFL students at the English Department of M'sila University. The pilot sample was different from the actual sample used in the present study. The piloting was undertaken during the first semester of the academic year 2017-2018 in an attempt to assess the test's readability, clarity, and length. The raters utilized the AWR (See Appendix (10) - Analytic Writing Rubric (AWR)) to evaluate the writing performance of the participants.

2.4.3 Semi-structured Interviews

Interview, one of the most used instruments for collecting qualitative data, is defined as “active interactions between two or more people leading to negotiated, contextually based results” (Fontana

& Frey, 2005, p. 698). It is an effective method for understanding different social activities and behaviors, allowing for in-depth investigations about human perceptions, attitudes, motivations, beliefs, and experiences (Borg, 2006).

The rationale for the adoption of interviews in this study is to gather more detailed insights and information that would not have been achieved with other methods. As stated by Hinds (2000), one of the advantages of interview is that it enriches and strengthens data collected by other approaches. Interview data might be triangulated with data from other sources, resulting in the collection of extensive, trustworthy, and reliable data for the study. Because quantitative methods may rule out important explanations and perspectives about the research issue, it was crucial to conduct interviews in this study in order to uncover personal concerns, experiences and perceptions that may be significant to the research problem.

There are various interview types and forms of conduction. According to Dornyei (2007), several interview formats can be utilized in applied linguistics, including individual or group interviews, structured, semi-structured, and unstructured interviews. In semi-structured interviews, a researcher employs a combination of guided and probe questions; however, probe questions should only be used when participants cannot provide elaborate responses or find it difficult to respond to certain questions (Burns, 2010). Such interviews engage the researcher and interviewers in a free-flowing discussion in which interviewees openly express their ideas and viewpoints on a specific issue; they may even uncover previously unconsidered perspectives. Therefore, a researcher should not impose particular viewpoints on interviewees; rather, he or she should encourage them to respond according to their own perceptions and beliefs.

In this study, one semi-structured face-to-face interviews were conducted in which participants were asked to respond to a set of pre-prepared open-ended questions. The use of semi-structured interviews assisted participants in freely expressing their personal thoughts and opinions. Previous studies have shown that instructors may feel anxious and uneasy when asked about their teaching practices and perspectives; therefore, researchers should employ effective interviewing techniques

(Kagan, 1990). Semi-structured interviews were employed in this study to promote free expression and interaction and offer opportunities of comfort and openness. Gillham (2005) asserted that semi-structured approach allows for free interaction, provides opportunities for comfort and strikes a compromise between structure and openness. This type of interviewing is the “best fit” because it enables the researcher and interviewees to clarify some aspects of the investigated topic, and interviewees may even contribute information that could not be obtained by quantitative methods.

The semi-structured interviews were conducted with five EFL instructors to learn more about their opinions on the usefulness of digital technology and digital literacy in EFL writing instruction. Sixteen interview questions were designed to investigate (1) their attitudes towards the use of digital technologies in EFL writing instruction, (2) their viewpoints about digital literacy skills, and (3) their perspectives about the current situation of technology integration in tertiary EFL writing classroom (See Appendix (5) – Teachers’ Semi-Structured Interview Questions). With the deployment of this interview type, rich qualitative data reflecting instructors’ digital technology utilization and digital literacy capabilities were gained. In addition, a comprehensive understanding of teachers’ attitudes towards the use of digital technology in EFL writing context and a thorough examination of the status of technology integration in EFL writing instruction were obtained.

During the interview sessions, the researcher tried to make the interview flexible and flow in a natural way. Participants were required to answer a set of open-ended questions, they sometimes veered away from the prepared questions to pursue the issue at hand, and occasionally, they opened-up crucial themes that had not been addressed by the researcher previously. Before the actual interviews were conducted, they had been pilot-tested with two tertiary EFL teachers who did not participate in the main study. This technique assisted in refining the interview questions and preparing for the actual interviews. The actual interviews were conducted in English, lasted between 20 and 40 minutes, and were all audiotaped and transcribed. All of the interviewees’ names were replaced with pseudonyms.

2.4.4 Tools of Research Experiment

In this study, a quasi-experiment was conducted to examine the efficacy of technology-enhanced EFL writing instruction on the development of students' writing performance. The experiment was undertaken at the English Department of M'sila University in the academic year of 2018/2019. The participants of the study were seventy third year EFL students from two classes that were taking English Academic Writing Course at the English Department. One of these classes was assigned randomly as the experimental group and the other one was taken as the control group.

Academic writing is a compulsory course for all third year English students, it run over 30 weeks with 90 contact minutes per week. The course aims at improving students' writing skills, it provides students with practical guidelines on how to write effective sentences, correct paragraphs, various types of academic essays, formal letters, reports, literary analyses, and critiques. In addition, it trains students on the use of note-taking, quotations, paraphrasing, and summarizing techniques. Third year students attending this course are supposed to have already learned fundamentals of English writing skills during the previous four semesters.

The course was taught by the researcher for the two study groups. Students in the experimental group were taught academic writing using technology-enhanced instruction, whereas those in the control group had a traditional writing instruction. Before conducting the experiment, a pretest was given to the two groups to ensure that they were equivalent in their writing performance. This section describes the phases of the instructional design, the use of digital technology in the experimental group's instruction, the use of the process-genre approach in the technology-enhanced writing instruction, pre- and post-tests, and the analytic writing rubric.

2.4.4.1 Instructional design phases

As stated previously, a quasi-experimental study was undertaken in this research. It included an experimental group and a control group, with the experimental group receiving technology-enhanced writing instruction and the control group being taught writing using the conventional teaching

method. The experiment, which spanned two semesters of the 2018–2019 academic year, consisted of three main phases: (1) pre-testing, (2) treatment, and (3) post-testing.

In the pre-testing phase, all the study participants were pre-tested before conducting the experiment to ensure that they had equal writing abilities. In the first session, and before receiving any kind of instruction, all students in the two groups sat for an 80-minute pre-test. All participants were asked to write an argumentative essay on a given topic (See Appendix (8) – Pre-Test & Post-Test). The independent samples t-test was used to assess the differences between the two groups' pre-test scores.

During the treatment phase, students in both groups were taught the same content of the writing syllabus that was designed and revised through a pilot study during the 2017-2018 academic year. The two groups were instructed on the writing process and its stages, including pre-writing, drafting, revising, editing, and publishing. In each lecture, both groups were provided with a variety of exercise materials and writing tasks that required students to produce different pieces of academic writing. The sole difference between the two groups was that the researcher integrated digital technology into the EFL writing instruction of the experimental group, whereas the control group merely received traditional teaching.

Students in the experimental group were taught in a computer laboratory with internet connection. They were trained to use digital tools such as wikis and blogs before the conduction of the experiment. On the other hand, the control group did not use technology; their instruction took place in a normal classroom and was based on the conventional method supported by the use of printed handouts and exercises.

In the post-testing phase, the researcher post-tested the experimental group and the control group (See Appendix (8) – Pre-Test & Post-Test) and examined their writing performance using the AWR (See Appendix (10) – Analytic Writing Rubric (AWR)). To determine the impact of technology-enhanced instruction on the writing development of EFL students, the independent samples t-test was

used to assess whether there were significant differences between the two groups' post-test mean scores.

The aims of this experiment can be summed up as follows:

- 1) Examine the impact of technology-enhanced instruction on the development of writing skills among EFL students.
- 2) Provide EFL students with digital tools that would enhance their writing performance.
- 3) Engage EFL students in autonomous learning and motivate them to write independently.
- 4) Promote engagement and communication among students who were required to share their writing with their classmates and offer assistance to one another.
- 5) Develop the digital skills and technology expertise of EFL students.

2.4.4.2 Digital technology integration in the experimental group's instruction

In order to deliver writing instruction to the experimental group, the researcher utilized computers with Internet connectivity, an LCD projector with a whiteboard to project on, and PowerPoint application. PowerPoint presentations helped students better comprehend the lectures and provided samples of how to write various types of essays. In addition, YouTube videos were occasionally used as writing prompts to inspire students' ideas and encourage them to write. The open-source Moodle of M'sila University (<http://virtuelcampus.univ-msila.dz/moodle/>) was chosen as the online platform for publishing the lessons of academic writing course.

Students were required to use computers and Web 2.0 technology to accomplish their writing assignments and activities. They were given several opportunities to practice web-based writing on digital platforms such as email, blog, and wiki. Students used email to practice and share writing-related exercises and assignments. Blogs were utilized to engage students in individual writing activities and to facilitate the sharing of their writing with others. Wikis were utilized to encourage collaboration among students, who were required to complete many cooperative writing tasks and publish them on the wiki pages (See Appendix (6) – Academic Writing Syllabus for the Experimental Group).

Since students in the experimental group were unfamiliar with Web 2.0 tools such as blogs and wikis, the researcher started the experiment with two weeks of training on their use. The majority of students heard about blogs and wikis, but few knew how to use them. For this reason, the researcher introduced and provided practical training on how to use these Web 2.0 tools before commencing the writing project. Importantly, students were instructed on how to use the posting, reviewing, commenting, and editing features of these tools. Overall, the academic writing course was taught through the use of digital technologies, including email, blog, and wiki. The integration of each tool in EFL writing instruction is discussed in detail below.

2.4.4.2.1 Integration of email

The researcher used Gmail as the medium for online individual tasks related to writing techniques (See Appendix (6) - Academic Writing Syllabus for the Experimental Group). All students were instructed on how to send emails using Google documents in order to practice and share their writing activities. The similarities between the functions of Google documents and Microsoft Word made it easier for students to identify grammatical, spelling, and punctuation mistakes, allowing them to comfortably utilize this application.

Students started using Gmail at the beginning of the first semester; towards the end of the first semester, blog and wiki were integrated and used until the end of the second semester. The researcher outlined the individual writing exercises and assignments that had to be submitted by email using Google documents. Due to the similarities between Google docs and Microsoft Word, the majority of students had no trouble using Google docs to complete the writing assignments.

2.4.4.2.2 Integration of blog

Another digital tool that the researcher had asked students to use for individual writing activities was blog. The researcher selected the *blogger.com* as the online venue for individual assignments. This blog platform was selected because it provides useful functions such as posting, editing, and commenting, as well as a fast access to multimedia resources (e.g., Slideshow, YouTube).

Furthermore, it offers diverse writing properties such as text color and font size, and allows for the inclusion of media files as images, audios and videos.

The use of bog was initiated before the end of the first semester. The researcher explained the writing activities and tasks required on the blog platform. The purpose of using blog was to encourage students to present some individual writing tasks, for which they received insightful peer feedback. On average, students were required to share some of their individual writing activities (See Appendix (6) – Academic Writing Syllabus for the Experimental Group) and provide feedback on their classmates’ writing. As a first online writing assignment, each student was required to compose a self-introduction. This icebreaker activity helped students become acquainted with one another and encouraged them to start using web-based writing.

Students were asked to visit the blog as frequently as possible because it contained important announcements, discussions, assignments, links to helpful websites, and other course-related information. Video files and YouTube videos were sometimes embedded on the blog page to facilitate learning and make it more interesting. Students were allowed to use “pseudo or screen names” for their online activities in order to keep their identities anonymous. It was supposed that using anonymous identities would lower students’ anxiety and free them from their fear of making mistakes in public.

2.4.4.2.3 Integration of wiki

Google sites was chosen as the wiki platform for collaborative assignments since it is free and easy to use. Google sites provides valuable writing features, such as viewing, collaborative editing, and change tracking, which made it convenient for students to engage in the writing process. In addition, it enables users to secure their privacy by password-protecting their wiki pages, so that only the teacher and students may read and update their work. The use of wikis was initiated during the second semester in order to encourage collaborative writing among students. Before starting to use wiki, the researcher explained the online writing activities that would be practiced collaboratively.

Wiki was set up in order to conduct collaborative writing activities (See Appendix (6) – Academic Writing Syllabus for the Experimental Group). The researcher created a wiki page and divided the students into five groups; each group consisted of five or six members. All students were asked to design their own group pages, which were linked to the front page. Each group was asked to do and then post a variety of co-writing activities, which were then reviewed and evaluated by the other group members. After receiving feedback from the other groups, the group who posted their writing was supposed to revise their drafts and then repost their final versions of writing.

2.4.4.3 Use of process-genre approach in web-based writing instruction

During the web-based writing instruction, the experimental group engaged in the writing process after reviewing several writing genres and viewing examples of each genre's writing. Applying the process-genre approach suggested by Badger and White (2000), students wrote about a variety of genres for different purposes and real audience. They were required to take into account the five writing stages: pre-writing, drafting, revising, editing, and publishing when developing their writing works.

Students in the experimental group were provided with multiple opportunities to practice web-based writing utilizing wiki, blog, and email. They were required to practice a variety of writing activities (paragraph writing, argumentative essays, compare and contrast essays, descriptive essays, narrative essays, cause and effect essays, literary analyses, academic reports, letters, and critiques) involving each of the five stages depicted in the following figure.

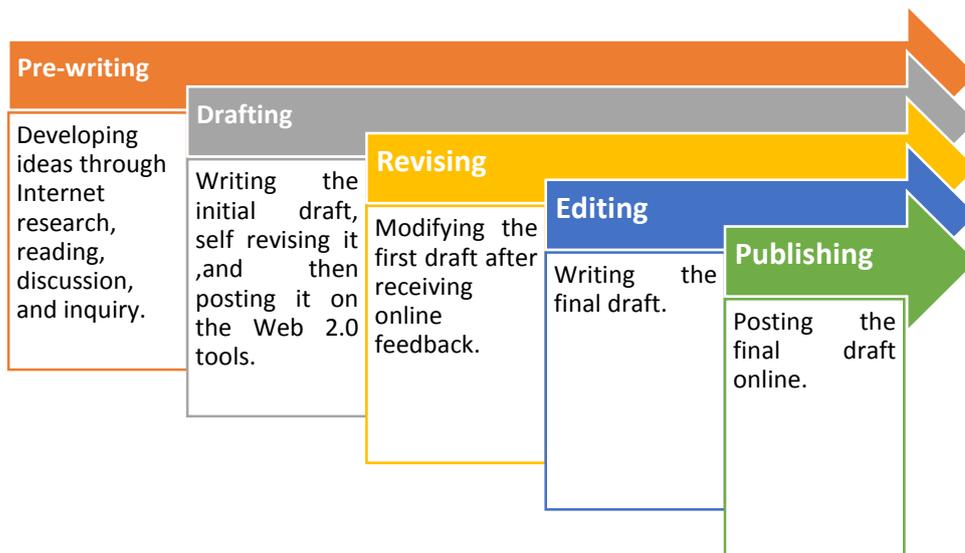


Figure 2. 2 Writing process stages in the online writing activities

In their writing activities, students followed every stage of the writing process. During the pre-writing phase, they were required to use search engines to gather information and discuss materials pertinent to the topic they would be working on in the following session. Together, they exchanged ideas about the topic in order to stimulate one another's thinking. In the classroom, the researcher provided students with a sample model of the genre type they had to write about and explained its main organization and structure.

At the drafting stage, students were asked to use information and ideas gathered in the pre-writing stage to write the first draft on the assigned topic. In this step, they could write about any relevant ideas without much concern about the correctness of language, as they would have opportunities to revise their draft later. After completing their first draft, students were required to share it with other classmates on blog or wiki in order to receive feedback.

The feedback stage provided students with the opportunity to rethink, reconsider, and revise their writing. The commenting feature on blog was utilized to provide students with online feedback on their first drafts from their classmates and the researcher. The aim of feedback was to develop students' ideas, structure, organization, accuracy, and coherence. Students were encouraged to

provide feedback on their classmates' writing drafts, taking into account the questions offered in the feedback guide (See Appendix (7) – Guidance for Students' Online Feedback).

During the revision stage, students reviewed, evaluated, and used the feedback offered by their classmates and the researcher in order to refine their first writing drafts. In addition, using links on grammar and writing practice that were published by the researcher on the blog's main page assisted students in revising their drafts more effectively. The blog site provided key instructions related to grammar, punctuation, writing style, and expression usage. Therefore, students were supposed to refine their drafts by improving their writing's content, style, organization, language, and mechanics.

After revising their writing drafts, students moved on to the publishing stage, in which they posted and shared their final drafts online. Students posted the final versions of their writing on blog or wiki sites so that it could be reviewed and evaluated by the audience. At this stage, they were encouraged to incorporate images, videos, music, and website links to express their ideas on the topic they had written about.

2.4.4.4 Pre-test and post-test

In this study, the researcher designed a pre-test and a post-test to measure the writing performance of the experimental and control groups before and after conducting the experiment. Before deciding on the topics of the pre-and post-tests, the researcher submitted a list of potential essay topics to four EFL expert teachers for their opinions on the most suitable essay topic for the tests. In light of these teachers' comments who suggested the argumentative topic, the argumentative type of essays was selected for the pre-and post-tests, and necessary revisions were made to the two tests. In argumentative essays, students are expected to persuade the readers of a particular point of view and support their claims with strong evidence. The AWR (See Appendix (10) – Analytic Writing Rubric (AWR)) was employed by the two raters to assess the writing performance of the two groups.

Before using the pre-test and the post-test in the actual study, they were administered to a pilot sample of ten third year EFL students at the English Department of M'sila University. The pilot sample was different from the actual sample used in the current study. The piloting was undertaken

during the first semester of the academic year 2017-2018, and its purpose was to check the understandability, clearness, and time duration of the tests. The researcher found out that the two tests were clear and understandable, and that the pilot sample took 80 minutes to complete each test.

To establish the reliability of the pre-and post-tests, the researcher calculated the alpha coefficients using the test/retest method on the same pilot sample. The alpha coefficients for the pre-and post-tests were 0.74 and 0.89, respectively. This shows a strong consistency between the first and the second applications of each test, indicating that the two tests are very reliable.

The pre-test was administered during the first semester of the 2018-2019 academic year at the English Department of M'sila University. Before starting any kind of instruction during the first week, all participants in the experimental and control groups took the same pretest. They were required to write an argumentative essay on a specific topic (See Appendix (8) – Pre-Test & Post-Test). The purpose of the pretest was to determine whether or not the participants of the two groups had equivalent writing abilities before beginning the experiment.

The post-test was administered at the end of the second semester of the 2018-2019 academic year. Students in the experimental and control groups completed the same post-test. The post-test was comparable to the pre-test in terms of genre (argumentative writing), but the topic was different. All students were required to compose an argumentative essay on a particular subject (See Appendix (8) – Pre-Test & Post-Test). The purpose of the post-test was to compare the writing performance of the two groups and determine whether there were any differences in their writing after the instructional design. Particularly, it attempted to determine whether the experimental group's writing improved after receiving technology-enhanced instruction.

2.4.4.5 Analytic writing rubric

The researcher designed an AWR to evaluate students' writing performance on writing tests (See Appendix (10) – Analytic Writing Rubric (AWR)). The analytic scoring method; which allows for the measurement of many components of writing, is widely acknowledged for improving the validity

and reliability of writing assessments (East, 2009; Hyland, 2003). The analytic scoring rubric, according to Weir (1990), is more reliable than the holistic grading rubric.

Heaton (1990) proposed that several writing aspects, including content, organization, vocabulary, grammar, and other writing mechanics, should be taken in account when evaluating writing skills. Consequently, the researcher focused on measuring the accuracy of grammar, correctness of spelling, appropriateness of lexical choice, and organization of the content while scoring the writing tests (See Appendix (10) – Analytic Writing Rubric (AWR)).

Four writing aspects were examined when evaluating students' written essays. These include the following: content (relevance, supporting evidence, purpose, etc.), organization of ideas (thesis statement, unity, coherence, etc.), language (grammar, vocabulary, and spelling), and style (creativity and originality of ideas). Each of these writing components was evaluated on a five-point scale: excellent, good, average, poor, and very poor. In order to assure the validity of this rubric, it was evaluated by a panel of four expert EFL teachers, who all agreed on its validity.

The writing-test papers were scored by two raters who followed the same scoring scheme. The two raters trained on the proper application of the scoring procedure in the AWR using some anchor papers as examples. The inter-rater reliability test was calculated to ensure that there were no differences between the raters' scores. The inter-rater reliability was found .94, indicating that the consistency between the two ratings is strong. Each rater scored independently each student's paper. The scores given by the two raters were correlated, and then the average of the two scores was used to get the final test score for each paper.

Multiple rating was utilized to evaluate the participants' test papers because it offers more advantages than single rating. First, it reduces human errors and raters' blind spots, as many evaluations improve assessment fairness and quality. Second, several raters can provide constructive feedback to help students enhance their skills. Third, multiple ratings increase the validity and reliability of scoring (Cho & Schunn, 2007).

2.5 Data Collection Procedure

The data collection process was conducted during the academic year of 2018-2019 at the English Department of M'sila University. All participants were asked about their willingness to take part in the current study. They were informed about the purpose of the research, the nature of their participation, and their research responsibilities. The researcher was present throughout all the steps of data collection procedure.

All research instruments including survey questionnaires, interviews, and writing tests were assessed by a group of experts and pilot-tested before being used with the study participants. The pilot study ensured the validity and reliability of the instruments. Students were informed that these instruments would be used for academic purposes only, and that their participation would have no bearing on their grades or relationship with the researcher. The data collected from the student participants can be outlined in the following procedure steps.

First, participants in the control and experimental groups were administered a writing performance pre-test during the first week of the 2018-2019 academic year. They were given 80 minutes to complete the test. The objective of the pre-test was to measure if students in the two groups had comparable writing performance. Then, eighty student participants were given a digital literacy questionnaire and a writing test that was correlated with their perceived level of digital literacy proficiency. The digital literacy questionnaire was used in order to assess the participants' digital literacy skills, and the writing test was administered to examine whether the participants' writing performance correlates favorably with their perceived levels of digital literacy competency.

Second, the control and experimental groups were taught academic writing course for two semesters. During the learning process, participants in the control group received traditional writing instruction, whereas those in the experimental group received technology-enhanced instruction. In particular, email, blog, and wiki, as well as other technological resources such as the Moodle platform, YouTube clips, and PowerPoint software were integrated in the experimental group's writing instruction. Lectures on academic writing were presented using PowerPoint application, web-

based writing was practiced utilizing Web 2.0 tools, and course-related content and materials were hosted on M'sila University's Moodle platform. During the second week of the first semester, the researcher introduced email, blog and wiki to the experimental group, and ensured that all participants understood how to utilize these three tools before beginning the writing instruction.

Third, an 80 minute post-test was administered to all participants in the control and experimental groups at the end of the second semester. The post-test aimed to compare the writing performance of the two groups after completing the instructional design, and to determine whether the experimental group had made any improvements in their writing after receiving technology-enhanced instruction. After completing the post-test, all participants in the experimental group spent approximately 15 minutes answering a post-testing questionnaire about their attitudes and perceptions towards the use of digital technology in EFL writing instruction. The post-test questionnaire included different open-ended questions related to the influence of technology on students' writing skills, the effectiveness of web-based writing tools, and the challenges encountered during online writing instruction (See Appendix (9) – Experimental Group's Post-test Questions).

Regarding the participating teachers, data were collected from teachers voluntarily during the first semester of the 2018-2019 academic year. Before beginning the data collection phase, participants were invited to complete and sign an informed consent form. On this form, they were assured that their human and privacy rights would be respected, and that any information they submitted would be kept confidential. In addition, they were informed that their participation is completely voluntary and that they may withdraw from the study at any time.

After signing the informed consent form, all forty EFL instructors were given survey questionnaires. Teachers were given pen-and- paper versions of questionnaires in their offices. The researcher chose this version over the online one because surveys with pen-and- paper response modes have higher response rates than those with web-based response modes (Schonlau, Fricker, & Elliott, 2002). To avoid disturbances in the classroom and ensure that survey questionnaires would

be completed efficiently, participants were permitted to complete the survey at home and return it as soon as possible.

All participants were requested to provide frank answers that reflect their true opinions and perspectives. Due to the researcher's presence during the data collection process, participants were able to inquire about any unclear questions on the questionnaires. On average, they spent between 20 and 30 minutes completing the questionnaires. All completed survey questions were returned to the researcher for analysis within two weeks. The majority of teachers who responded to the survey were also keen to take part in the interview sessions.

After completing the questionnaires, five EFL teachers who expressed interest in taking part in semi-structured interviews were invited to participate. To create a comfortable environment for the participants, all interviews took place in a classroom at the Department. In these interviews, the researcher asked a series of questions regarding attitudes toward technology integration in EFL writing instruction, perspectives on digital literacy, and the current state of technology integration in EFL writing instruction (See Appendix (5) – Teachers' Semi-Structured Interview Questions).

Participants were encouraged to freely express their views, share anecdotes, ask questions and offer suggestions on the main research issues. Each participant could provide detailed information and insightful reflections about each question presented during the interview sessions. Therefore, the five participants could contribute to the interview by sharing relevant experiences, opinions, and concerns. Each interview session lasted between 20 and 40 minutes, and all were audio-recorded and transcribed for analysis.

As soon as the quantitative and qualitative data had been obtained, the researcher started analyzing them to provide a triangulated interpretation. Quantitative data were put into a database and analyzed using version 24.0 of the Statistical Package for the Social Sciences (SPSS) software. The qualitative data were entered into Microsoft Word documents for transcriptions and coding. Content analysis; which includes strategies of categorizing, coding, and interpreting, was used for analyzing qualitative data.

2.6 Data Analysis

The mixed method approach utilized in this study requires an analysis of both quantitative and qualitative data. Quantitative data was analyzed using version 24.0 of SPSS, while qualitative data was transcribed and then analyzed by classifying it into categories, themes and patterns related to the issues under investigation. The following steps suggested by Onwuegbuzie and Leech (2006) are used for analyzing the data obtained from the mixed method approach:

- 1) Data reduction: summing up the quantitative data through statistical analysis and qualitative data through content analysis.
- 2) Data presentation: displaying the data in visual formats such as tables, graphs, and figures.
- 3) Data correlation: identifying relationships within the presented data.
- 4) Data consolidation: combining and associating the data.
- 5) Data comparison: identifying similarities and differences between the quantitative and qualitative data collected.
- 6) Data integration: combining and integrating the data to develop a holistic interpretation of the research issue.

2.6.1 Quantitative Data Analysis

Quantitative data collected from the teachers' and students' survey questionnaires were analyzed using descriptive statistics. Questionnaire items, which contained multiple choices and a Likert scale were assigned numerical values. These numerical values were entered into the SPSS software. Descriptive statistics consisting of *frequencies, relative frequencies, means and standard deviations* were then applied in order to analyze and sum up the responses of participants. In addition, the one sample t-test and the chi-square goodness of fit test were employed to assess participants' responses on their levels of digital literacy and the status of technology integration at the department.

The quantitative data which consisted of participants' writing scores were also analyzed using SPSS 24.0 software for data analysis. After correlating the scores given by the two raters for each

essay paper in the writing tests, the average of the two scores was entered into the SPSS software. The following techniques were utilized by the researcher to analyze the writing tests:

Independent samples t-test (between-groups statistics) was used to determine whether there were differences in the pre-test writing performance of the experimental and control groups. On the post-test, a second independent samples t-test was utilized to examine whether there were differences in the writing performance of the experimental and control groups.

Paired samples t-test (within-group statistics) was employed to evaluate whether there were differences between the pre- and post-test results of the experimental group. Paired-samples t-tests were undertaken in order to determine if the technology-enhanced instruction improved the experimental group's writing performance. In this context, Dörnyei (2007) clarified that the independent samples t-tests are used to compare the results of two distinct groups, whereas paired samples t-tests are used to compare two types of results of the same group.

In addition, the *Spearman correlation test* was used to assess the correlation coefficient between the variables of the first research hypothesis: digital literacy proficiency and academic writing performance. The purpose of this test was to examine whether the participants' writing performance correlates positively with their perceived level of digital competency.

The quantitative data analysis was displayed into tables and charts, which helped in organizing the data and identifying its key patterns and trends. After analyzing the quantitative data and representing it visually in tables, graphs, etc., the researcher moved on to interpreting the results and qualifying the data by writing it in a text form.

2.6.2 Qualitative Data Analysis

Qualitative data analysis “involves organizing, accounting for and explaining the data” (Cohen et al., 2007, p.537). It entails an ongoing process of reflection, comprehension, and interpretation of the data pertinent to the issue under investigation. In order to achieve an in-depth understanding and analysis of this type of data, researchers must pose broad questions and use a variety of qualitative

research strategies (Creswell, 2008). In this regard, Ritchie and Spencer (2002, p.309) explained the researcher's role in qualitative analysis by asserting that "qualitative data analysis is essentially about detection and the tasks of defining, categorizing, theorizing, explaining, exploring and mapping are fundamental to the analyst's role". Consequently, the researcher endeavored to become acquainted with the data in order to identify the major themes and categories.

In this study, qualitative data obtained via semi-structured interviews and open-ended survey questions were subjected to content analysis, which includes classifying, coding, and interpreting techniques. In content analysis, themes or categories are formed based on the collected data. First, data are coded, then codes with similar characteristics are classified into categories or themes for analysis, and finally, the resulting themes are interpreted for readers (Cohen et al., 2007). To analyze qualitative data, Braun and Clarke (2006) suggested the following steps: "familiarizing with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, producing the report" (p.87). Hence, the researcher employed these procedures in the qualitative analysis approach of this study.

First, in order to become familiar with the data and have a comprehensive understanding of it, the researcher examined the obtained data from each instrument multiple times. In the initial phase of qualitative analysis, the researcher engaged in the following activities: reading and writing all open-ended responses to the survey questionnaire, listening to all audio recordings of interviews, transcribing these recordings into text form, reading the transcriptions repeatedly, taking notes, writing down initial thoughts, and then collecting and organizing all information. This provided the researcher with a general overview of the data needed to proceed with the investigation.

Second, the qualitative data were reviewed and reorganized for a preliminary coding. At this phase, the researcher went through several survey open-ended answers and interview transcripts. Data with similar features were coded by grouping them into a category, and a label was assigned to each category according to its characteristics (e.g. teachers' perceptions of their digital literacy competence, teachers' perceptions of their students' digital literacy competence, teachers' attitudes

to technology use in EFL writing instruction, students' attitudes towards online-based EFL writing instruction, teachers' views about the current status of technology integration in EFL writing context, etc.). Therefore, qualitative data were categorized according to the content of the participants' responses. For a code to be considered as a category or a theme, it had to appear frequently in participants' responses.

After developing initial categories, the researcher looked for specific extracts to associate with each category. At this point, the researcher could relate some extracts to the previously formed categories, create new categories, and generate some subcategories. For instance, when analyzing students' opinions about the effectiveness of Web 2.0 tools in developing writing skills and their attitudes towards online writing instruction, their responses were classified into three subcategories: *positive*, *negative*, and *unsure*. Similarly, teachers' attitudes towards digital technology integration were divided into three subcategories: *Pros*, *Cons*, and *Uncertain*.

Third, after classifying the data into categories, the next step was to organize the resulting themes or categories for analysis. The themes were divided into smaller parts and supported by evidence from other sources. In order to strengthen the reliability and validity of the study, the researcher utilized triangulation, which involves comparing the results from various data sources to each other. The qualitative data findings provided useful quotations that were utilized to cross-validate and complement the quantitative data findings.

Finally, after quantitative and qualitative analysis were completed, the researcher moved on to the final step of combining, consolidating, comparing and integrating the two types of data. Multiple perspectives on the same issue were collected from various data sources, similarities and differences between the data findings were identified, and interpretations were presented for why the findings matched or did not match. Overall, quantitative and qualitative findings completed one another and contributed to the provision of adequate responses for each research issue. The two sets of analysis were integrated to increase the credibility of the research. According to Hussein (2009), "triangulation can indeed increase credibility of scientific knowledge by improving both internal consistency and

generalizability through combining both quantitative and qualitative methods in the same study” (p. 10). This was the most effective method for addressing the research questions, building interpretations, and obtaining conclusions.

2.7 Pilot Study

A pilot study was undertaken at the English Department of M’sila University during the 2017-2018 academic year in order to identify any potential issues with the questionnaire items, writing tests, and interview questions. The purpose of the pilot study was to assess the reliability and validity of the questionnaire items and writing tests, as well as the appropriateness of the semi-structured interview questions. Ideal research instruments, according to Cohen et al. (2007), should undergo pilot testing to ensure that they are clear, comprehensible, and workable. Dörnyei (2007, p.75) also emphasized the importance of piloting, which, if not conducted, “...jeopardizes the psychometric quality of the study.” The piloting of the questionnaires, interview and writing tests is detailed in the following sections.

2.7.1 Pilot Testing of Questionnaires

Because the printed word might be misunderstood or misinterpreted in written communication, Wellington (2000) emphasized that all types of questionnaires should undergo pilot testing. Consequently, a pilot study was conducted to assess the questionnaires’ face and content validity, construct validity, and reliability, as detailed in the following sections.

2.7.1.1 Face and Content Validity

In order to test the face and content validity of the questionnaire survey, it was submitted to four EFL experts who were not involved in the main study. This panel of educator professionals reviewed the survey for any flaws with the general flow, relevance of items, appropriateness of wordings, types of questions and layout of each questionnaire section. The four expert EFL instructors provided feedback on the questionnaires’ length, complex technical terms, and double-barreled items. The

survey was adjusted in response to the feedback obtained from the experts. The following examples show these modifications:

Firstly, to reduce the length of the survey, the researcher removed certain open-ended questions and replaced others with closed-ended questions. For example, two open-ended questions in the second section of teachers' questionnaire: "overall, and according to your own understanding, how would you rate your digital literacy level?" and "how would you rate your ability to use digital technologies as compared to your students?" were converted into multiple-choice questions in which participants were provided with a list of possible answers. Another illustration of this can be seen in section four of the teachers' questionnaire, in which the open-ended question "what digital tools do you use in EFL writing instruction?" was replaced with close-ended items that allowed participants to select the digital resources they preferred.

Secondly, the use of complex technical terms was avoided; the researcher clarified the meaning of several digital technologies used in the survey by providing examples at the end of the questionnaire items. Examples of each technological tool are included in brackets in the questionnaires given to teachers and students; for instance, "presentation software (e.g. PowerPoint or Prezi)", "tablet devices (iPad or android)", "social networking sites (Facebook, twitter, instagram)". Therefore, it was assumed that participants would not have any trouble understanding technical language.

Thirdly, the researcher avoided the use of double-barreled questions, which address multiple issues in a single question but allow for only one response. For instance, in the teachers' and students' questionnaire, the statement about participants' ability to "use a word processing and presentation software to create documents" was separated into two statements "using a word processing" and "using presentation software", so that participants would focus on each digital skill. Similarly, the statement in the same section about participants' ability "to create a wiki and a blog" was split into two statements "creating a wiki" and "using and editing blogs" in order to make participants focus on each digital tool separately.

2.7.1.2 Construct Validity

Following the assessment of the questionnaires' face and content validity, the researcher conducted a pilot study with ten tertiary EFL instructors from different English Departments and ten third-year EFL students from the English Department at M'sila University who were not part of the main study. The purpose of the pilot study was to evaluate the construct validity of the questionnaires distributed to teachers and students.

Construct validity, which refers to the extent to which a test accurately assesses the concept it is intended to measure (Nunnally, 1978), was analyzed by calculating the Item-Total Correlation (ITC) of each scale in the teachers' and students' survey questionnaires. Pearson's product-moment correlation coefficient (r) was used to evaluate the ITC; which shows the contribution of each item to the instrument's consistency. The correlation between overall scale score and each item was assessed, and the correlation coefficient values >0.20 were considered as demonstrating a satisfactory level of correlation (Kline, 1986). The ITC of teachers' and students' survey scales are presented in this section.

2.7.1.2.1 Item -Total Correlation of Survey Scales

This section shows the correlation between each item and the scale's total score on the teachers' and students' questionnaires. First, Pearson's product-moment correlation coefficient (r) was used to assess the ITC of the four scales comprising the teachers' survey. The correlation between the total score of the second scale "digital literacy level of EFL teachers" and each item is presented in the following table.

Table 2. 11 Item- total correlation of section two: digital literacy level of EFL teachers

Items	Pearson's r	Items	Pearson's r
(01)	0.52*	(19)	0.75**
(02)	0.88**	(20)	0.50*
(03)	0.79**	(21)	0.69**
(04)	0.55*	(22)	0.78**
(05)	0.87**	(23)	0.62**

(06)	0.61**	(24)	0.53*
(07)	0.66**	(25)	0.70**
(08)	0.75**	(26)	0.48*
(09)	0.67**	(27)	0.61**
(10)	0.64**	(28)	0.74**
(11)	0.86**	(29)	0.87**
(12)	0.62**	(30)	0.60**
(13)	0.60**	(31)	0.53*
(14)	0.76**	(32)	0.68**
(15)	0.49*	(33)	0.79**
(16)	0.68**	(34)	0.62**
(17)	0.61**	(35)	0.61**
(18)	0.58**		
<i>**Correlation is significant at the 0.01 level</i>			
<i>*Correlation is significant at the 0.05 level</i>			

As indicated in the table above, all items on the second scale had high ITC, ranging from 0.48 (item 26) to 0.88 (item 02), and were statistically significant at the levels ($\alpha = 0.01$ and $\alpha = 0.05$). This demonstrates that the items have a high level of internal consistency; hence, the scale is valid for measuring what it was intended to evaluate and can be applied in the actual study. The results related to the correlation between the overall score of the third scale “EFL teachers’ attitudes towards technology integration” and the items are shown in Table 2.12.

Table 2. 12 Item- total correlation of section three: EFL teachers’ attitudes towards technology integration

Items	Pearson’s <i>r</i>	Items	Pearson’s <i>r</i>
(01)	0.75**	(08)	0.63**
(02)	0.74**	(09)	0.68**
(03)	0.71**	(10)	0.71**
(04)	0.73**	(11)	0.73**
(05)	0.71**	(12)	0.73**
(06)	0.68**	(13)	0.63**
(07)	0.62**	(14)	0.58**
<i>**Correlation is significant at the 0.01 level</i>			

The correlation between item scores and the second scale's total score is satisfactory, as seen in the table above. The correlation values are statistically significant at the level ($\alpha = 0.01$) and range between 0.58 and 0.75; item (01) had the highest correlation with the total scale score ($r=0.75$) while item (14) had the lowest correlation ($r=0.58$). Overall, the correlation values indicate the degree of homogeneity and the strength of the scale's internal consistency; thus, the scale has construct validity and can be utilized in the main study. The correlation between the total score on the fourth scale and the items is presented in the following table below.

Table 2. 13 Item- total correlation of section four: status of technology integration in EFL writing instruction

Items	Pearson's r	Items	Pearson's r
(01)	0.49*	(10)	0.74**
(02)	0.66**	(11)	0.62**
(03)	0.61**	(12)	0.75**
(04)	0.58**	(13)	0.70**
(05)	0.70**	(14)	0.69**
(06)	0.50*	(15)	0.61**
(07)	0.69**	(16)	0.74**
(08)	0.62**	(17)	0.58**
(09)	0.61**	(18)	0.61**
<i>**Correlation is significant at the 0.01 level</i>			
<i>*Correlation is significant at the 0.05 level</i>			

All items on the fourth scale had a satisfactory correlation with the total mean score ($r=0.49$ – 0.75). The item with the lowest correlation was item 01 ($r=0.49$), and the item with the highest correlation was item 12 ($r=0.75$). In general, these items have a high level of internal consistency, hence the scale is valid for measuring what it was designed to assess.

The correlation between each scale and the entire survey score was also assessed using Pearson's product-moment correlation coefficient (r). The correlations between the four scales and the total survey score are shown in Table 2.14.

Table 2. 14 Scale total correlation

Scale	Pearson's r
Digital Literacy Level of EFL Teachers	0.80**
EFL Teachers' Attitudes towards Technology Integration	0.82**
Status of Technology Integration in EFL Writing Instruction	0.78**
<i>**Correlation is significant at the 0.01 level</i>	

All of the scales exhibited a high correlation with the total survey score, as seen in the table above. The correlation values are statistically significant at the ($\alpha = 0.01$) level, ranging from 0.78 to 0.82. The scale of EFL teachers' attitudes had the highest connection ($r=0.82$) with the total survey score, whereas the scale of the status of digital technology integration had the lowest correlation ($r=0.78$). Overall, the correlation values show that there is a high level of internal consistency between the survey scales; hence, the survey can be utilized in the actual study.

Concerning students' survey, the ITC of the second scale included in the students' questionnaire is assessed using Pearson's product-moment correlation coefficient (r) and is presented in the table below.

Table 2. 15 Item- total correlation of section two: digital literacy level of EFL students

Items	Pearson's r	Items	Pearson's r
(01)	0.58**	(19)	0.94**
(02)	0.84**	(20)	0.90**
(03)	0.94**	(21)	0.89**
(04)	0.96**	(22)	0.85**
(05)	0.58**	(23)	0.92**
(06)	0.71**	(24)	0.89**
(07)	0.69**	(25)	0.89**
(08)	0.92**	(26)	0.90**
(09)	0.74**	(27)	0.58**
(10)	0.84**	(28)	0.71**
(11)	0.75**	(29)	0.69**
(12)	0.67**	(30)	0.92**
(13)	0.81**	(31)	0.74**
(14)	0.95**	(32)	0.84**
(15)	0.94**	(33)	0.75**
(16)	0.90**	(34)	0.58**
(17)	0.89**	(35)	0.48**
(18)	0.85**		
<i>**Correlation is significant at the 0.01 level</i>			
<i>*Correlation is significant at the 0.05 level</i>			

According to the table above, all items have good correlation coefficients with the total score of the scale to which they belong. The coefficients ranged from 0.48 to 0.96, with item 04 exhibiting the strongest correlation ($r=0.96$) and item 35 the lowest ($r=0.48$). In general, the scale exhibits a high level of internal consistency and can thus be applied in the main study.

2.7.1.2.2 Discriminatory analysis

The discriminatory analysis was applied on the pilot sample consisting of 10 participants in order to calculate the construct validity of the teachers' survey. This kind of analysis is used to assess the distinction between the two ends of the survey, i.e. between the lower and upper groups. 27% of the sample size ($27 \times 10 / 100 = 2.70$, i.e. approximately 03 participants) are used to calculate the difference between the two groups. The independent samples "t" test was used to determine whether there were any differences between the lower and upper groups, and the results are shown in the following table.

Table 2. 16 Discriminatory analysis of teachers' survey

	Groups	N	Mean	Std. Deviation	Df	T	Sig.
Teachers' Survey	Upper	03	332.66	10.40	04	9.08	0.001
	Lower	03	257.00	10.00			

The table above shows that the calculated t- test value (9.08) is statistically significant at the level ($\alpha = 0.01$), indicating that the teachers' survey can distinguish between the two groups. This ensures the validity of the survey.

To analyze the distinction between the two ends of the students' survey (the lower and upper ends), a sample of 27% of the 10 pilot students was used ($27 \times 10 / 100 = 2.70$, i.e. approximately 03 participants). Then, the independent sample "t" test was used to compare the lower and upper groups (Table 2.17).

Table 2. 17 Discriminatory analysis of students' survey

	Groups	N	Mean	Std. Deviation	Df	T	Sig.
Students' Survey	Upper	03	215.00	6.92	04	4.83	0.000
	Lower	03	182.66	9.29			

According to the table seen above, the t-test value (4.83) is statistically significant at the level ($\alpha = 0.01$), therefore, the students' survey can discriminate between the two groups.

2.7.1.3 Reliability

Reliability analysis, which evaluates the consistency of a measure, was applied to the survey questionnaire responses of the pilot sample of 10 instructor participants and 10 student participants. Internal consistency, which refers to the extent to which instrument items measure the same construct (concept), was tested using two methods: split-half reliability and Cronbach's alpha. Cronbach's coefficient values >0.70 were considered to demonstrate satisfactory internal consistency (Nunnally, 1978). The reliability analysis of teachers' and students' survey scales are presented in this section.

2.7.1.3.1 Split-half reliability

The reliability of the teachers' survey was calculated using the split-half reliability method, which divides all the survey items into two halves and then correlates scores on each half. If the two halves of the survey measure the same construct with comparable precision, there will be a high correlation between their scores. The table below shows the correlation between the two survey parts.

Table 2. 18 Split-half reliability of teachers' survey

	Split-half correlation	Spearman-Brown Coefficient	Gutman Coefficient
Teachers' Survey	0.76**	0.86	0.82

The correlation coefficient between the two halves of the teachers' survey is (0.76), indicating a high level of correlation between the two halves. Due to the fact that split-half reliability evaluates the reliability of a half-length survey, the Spearman-Brown formula was applied to the correlation in order to measure a true estimate for the full length scale. The Spearman-Brown coefficient is (0.86) and the Gutman coefficient is (0.82), this indicates that the survey of teachers has a high level of reliability and can be utilized in the actual study.

The split-half reliability method was also used to measure the internal consistency of students' questionnaire, the correlation between the two parts of the survey is presented in the table below.

Table 2. 19 Split-half reliability of students' survey

	Split-half correlation	Spearman-Brown Coefficient	Gutman Coefficient
Students' Survey	0.67**	0.80	0.78

According to the table above, there is a good correlation between the two halves of students' survey (0.67). To measure the true estimate for the full length scale, the Spearman-Brown formula was applied, the Spearman-Brown and the Gutman coefficients were calculated to be (0.80) and (0.78), respectively. Hence, the students' survey exhibits a good level of reliability.

2.7.1.3.2 Cronbach's alpha coefficients

Cronbach's alpha (α) was used to calculate the reliability of the teachers' and students' questionnaires; the results are presented in the table below.

Table 2. 20 Cronbach's alpha coefficients of teachers' survey scales

Scales	Number of Items	Cronbach's alpha Coefficient
Digital literacy level of EFL teachers	35	0.96
EFL teachers' attitudes towards technology integration	14	0.82
Status of technology integration in EFL writing instruction	18	0.75
Whole survey	67	0.94

Cronbach's values for the three scales comprising the teachers' survey were all above the 0.70 threshold, ranging between 0.75 and 0.96, while the Cronbach's value for the entire survey was ($\alpha=0.94$). According to DeVellis (2012), coefficients of reliability between 0.70 and 0.90 indicate a high degree of consistency. Consequently, the survey has a high degree of reliability and can be utilized in the main study. Cronbach's alpha was also used to assess the reliability of the students' survey as shown in the following table.

Table 2. 21 Cronbach's alpha coefficients of students' survey scale

Scales	Number of Items	Cronbach's alpha Coefficient
Digital literacy level of EFL students	35	0.94

Cronbach's score for the student survey scale was ($\alpha = 0.94$) as shown in the table above. Thus, the survey is sufficiently reliable to be utilized in the main study.

Overall, the testing results indicated that the participants' survey was a reliable measuring instrument at the application level. After conducting the pilot study, the final survey was submitted to the study participants. It was estimated that participants would spend about 20-30 minutes to complete the questionnaires. Although the survey questionnaire had been pilot-tested and participants could complete it without the researcher's presence, it was essential for the researcher to be present in order to clear out any kind of misunderstanding or ambiguity.

2.7.2 Pilot Testing of Interviews

As recommended by Maxwell (2013), the interview questions should be pilot-tested to improve and revise them. Therefore, a pilot test was conducted to ensure that the form and structure of the interview instrument were clear and comprehensible to the participants. After the initial development of the teachers' interview questions, a panel of four expert tertiary EFL lecturers gathered to provide comments on the questions. These educators gathered for two hours at the department to discuss their perspectives on each interview question. Upon completion of their discussion of the questions and in response to their suggestions, the interview questions were modified.

The interview questions were piloted with two tertiary EFL teachers. According to the feedback provided by the expert teachers and the pilot sample, who suggested using clear wordings and examples to avoid ambiguity, few modifications were made to the instrument's questions. For example, clarifications in terminology were made in the interview so that participants would have no trouble comprehending the questions. In addition, the technical terms were omitted and the overall wording was revised to simplify the content as much as possible. There was also a minor issue with the length of the interview questions, therefore the necessary adjustments were made to shorten them.

2.7.3 Pilot Testing of Writing Tests

The pilot study of the writing tests was conducted during the first semester of the 2017-2018 academic year with the objective of assessing the tests' validity, reliability, and usability. In this regard, the validity of the writing performance tests for students was determined by presenting these instruments to four EFL expert university teachers, who provided feedback and suggestions for refining the three tests utilized in the study. The instruments were modified and improved in response to the comments made by these professional educators.

The reliability of the writing tests was achieved through a pilot study. The researcher selected ten third year EFL students from the English Department of M'sila and administered the three writing tests to them. The researcher applied the test/retest method on these students, with a two-week interval between the first and second administration of each test. The purpose of the test/retest method was to measure the stability of the instruments by examining the consistency of test scores over time.

According to Mitchell and Jolley (2010), the test-retest coefficients might range from 0.60 to 0.98; a coefficient of 0.70 indicates an acceptable level of reliability, whilst a coefficient greater than 0.70 suggests a high level of reliability. This implies that the test scores from the first application correspond to those from the second. In order to determine the consistency of the writing tests, the correlation between the different applications of each test was measured. The value of the alpha coefficients was computed, and the results are presented in the table below.

Table 2. 22 Cronbach's alpha for the pre-and post-tests

Test	Cronbach's Alpha
Writing test correlated with perceived digital literacy proficiency	.92
Pre-test	.74
Post-test	.89

As shown in the table above, the Cronbach's alpha values between the two applications for each test were as follows: the writing test correlated with perceived digital literacy proficiency at a level of 0.92, while the pre-test was at 0.74, and the post-test was at 0.89. This indicates that there is a high

level of consistency between the first and second administrations of each test; hence, the reliability of the three instruments was established prior to their use in the actual study.

2.8 Ethical Considerations

Ethical considerations are crucial in both scientific and pedagogical research. Several issues regarding participants' informed consent, anonymity and confidentiality rights, avoidance of harm and deception should be taken into consideration when conducting a study (Creswell, 2008). A careful plan about ethical issues is required to minimize potential risks that participants might encounter throughout the research investigation (Bryman, 2012; Cohen et al., 2007). In the current study, the appropriate ethical standards were adhered to during the data collection process. Issues concerning consent from the participants, maintenance of anonymity and confidentiality, avoidance of harm, and reporting data analysis with integrity were all taken into account.

2.8.1 Informed Consent

Informed consent is one of the most essential ethical considerations in educational research. The researcher should disclose all necessary and required information to the participants so that they can decide whether or not to participate in a study (Bryman, 2012). During the data collection process, all participants were given an informed consent form which included information about the nature of the study, the research objectives, confidentiality, anonymity, and the right to withdraw at any time. On this form, it was highlighted that participation in the study is completely voluntary. In other words, participants were free to decide whether or not to take part in the current research, and they had the right to withdraw any time they wanted (See Appendix (1) – Informed Consent Form). Similarly, teachers who participated in the interview were given a sufficient explanation of the purpose, background, and methods of the study. Prior to conducting the interview, consent for audio recording was obtained from the interviewees.

In addition, participating students were also provided with a consent form, they were given both written and verbal information about the research, and were assured that their scores would not be

affected by their participation. Having given the relevant information about the research, participants were requested to sign the informed consent form to indicate that they understood the information provided and agreed to take part in the study.

2.8.2 Confidentiality and Anonymity

Concerning the ethical standard of maintaining confidentiality and protecting the participants' privacy, the researcher kept all the participants' identities anonymous by assigning pseudonyms to each participant. In addition, all the documents related to this study, including interview recordings, transcripts, questionnaire data, and test results, were kept in a secure storage to which only the researcher had access.

Students in the experimental group had secure access to the wiki and blog platforms. When notified that some of their online entries would be used as examples for this study, all of the students gave their consent. Moreover, the transcriptions of interviews were made available to the study participants. It was important to share these transcriptions with the participants as it assured them that their consent was sought for the final publication.

2.8.3 Avoidance of Harm

Any kind of potential risk that could harm the study participants was avoided, such as insufficient information about the research, compulsory participation, deception, lack of confidentiality, and lack of privacy. All of these issues were avoided to keep the participants' rights protected. In addition, the researcher discussed with the participants any concerns that they deemed to be harmful. As regards interviews, the researcher paid careful attention to avoid placing participants in situations of anxiety, stress, fatigue, discomfort, and embarrassment.

2.8.4 Avoidance of Deception

Deception in research refers to any intentional presentation of false information on the nature, purpose, or results of a study. It may involve omission of true facts or invention of misleading data (Keller & Lee, 2003). To avoid any form of deception, the researcher followed a policy of

transparency in which true facts regarding the nature, objectives and findings of research were reported. Regarding the nature and purpose of the research, all study participants were provided with an informed consent form that included comprehensive information about the study's objectives and background. Concerning the truthfulness of findings, all the research data were safely secured. The study findings and interpretations were based on the collected data. The research procedures were made clear for checking the credibility of research. In addition, all the interviews transcripts were given to the participants in order to obtain their consent prior to their use in the current study.

Conclusion

In conclusion, this chapter describes the research design, participants, research methods, data collection procedure, data analysis, pilot study and ethical considerations involved in the study. This research focuses on examining the efficacy of digital technologies and digital literacy in tertiary EFL writing instruction. By applying a mixed methods research, it was hoped that this study would generate a comprehensive set of analyses and triangulate multiple types of data in order to provide an adequate explanation of the investigated research issues. The research instruments used in this study were survey questionnaires for EFL teachers and EFL students, interviews, and writing tests. Quantitative data collected from the survey questionnaires were analyzed using the SPSS software. Descriptive statistics (such as percentages, mean scores, and standard deviations, etc.) were applied for analyzing the survey questionnaires. Independent samples t-tests were used to analyze the differences between the experimental and control groups in the pre-and post-writing tests. A paired samples t-test was used to determine the differences between the experimental group's pre-and post-writing tests. The Spearman correlation test was used to assess the correlation coefficient between the variables of the first research hypothesis, digital literacy proficiency and academic writing performance. The qualitative data from semi-structured interviews and open-ended survey questions were analyzed using content analysis method, which entails coding, categorizing, and interpreting techniques.

CHAPTER THREE: RESULTS & ANALYSIS

Introduction

This chapter presents the results and analysis of both quantitative and qualitative data gathered from survey questionnaires, interview questions and scores of writing tests. In response to the research questions, the chapter provides findings about EFL teachers' and students' levels of digital literacy competence, teachers' attitudes towards digital technology integration in EFL writing instruction, the current situation of digital technology incorporation in EFL writing classrooms, the impact of digital literacy proficiency on the development of writing skills, as well as the effects of digital technology integration on the enhancement of EFL students' writing performance. Throughout this chapter, data from different instruments are compared and contrasted in order to both determine the consistency of the study findings and provide a thorough analysis to the research issues.

An important point to note before presenting the data analysis is that the participants' responses to the five-point Likert scale questionnaires were classified into five levels according to the mean boundary scores. As stated by Narli (2010), analyzing and interpreting a five Likert scale requires the calculation of the interval width using this formula: $\text{Interval Width} = (\text{Higher value} - \text{Lower value})/n = (5-1)/5 = 0.8$. Accordingly, the interval width (0.80) was used to build the boundary scores of the five Likert scale, which are presented in Table 3.1.

Table 3. 1 Correction key of the five-point Likert scale

Boundary values	Judgment scale for perceived digital competence	Judgment scale for attitudes	Judgment scale for actual integration
1.00 -1.80	Very low	Very negative	Not applicable
1.81 -2.60	Low	Negative	Poor
2.61 -3.40	Average	Average	Average
3.41 -4.20	High	Positive	Good
4.21 -5.00	Very high	Very positive	Very good/ applicable

This table serves as an analysis key of the participants' responses to the survey questionnaire items, and helps to discuss the research findings based on the above boundary values. It provides a

judgment scale on which to rate the participants' perceived level of digital literacy skills, their perceptions about digital technology integration in EFL writing classroom, and their actual uses of new technologies in EFL writing instruction. As indicated above, the level of a mean score is extremely weak between (1.00 and 1.80), weak between (1.81 and 2.60), moderate between (2.61 and 3.40), strong between (3.41 and 4.20), and very strong between (4.21 and 5.00).

3.1 Digital Literacy Competence of EFL Teachers and Students

This section analyses the participants' current level of digital literacy proficiency, it presents findings from the survey questionnaire and interview reflections regarding their competence in using digital technologies. This would show the extent to which the participants possess the digital skills that enable them to utilize effectively digital technologies in EFL learning contexts, and would show as well those skills that they need to improve in order to make an optimal usage of new technologies.

3.1.1 Digital Literacy Competence of EFL Teachers

This sub-section provides the results of the survey questionnaire and semi-structured interviews regarding EFL teachers' abilities to use digital technologies. The results are presented in two separate parts: quantitative findings and qualitative findings.

3.1.1.1 EFL Teachers' Digital Skills- Quantitative Findings

In the survey questionnaire, EFL teachers were asked to rate their perceived ability in utilizing a variety of digital technologies on a five-point Likert scale: (1) illiterate, (2) poor, (3) average, (4) good and (5) excellent. Their responses to the questionnaire items are analyzed and presented in the following table.

Table 3. 2 Mean scores and standard deviations for EFL teachers' digital skills

Items	M	SD	Rank	Level
1. Using computers.	4.47	.50	7	Very high
2. Using cell-phones and tablet devices (iPad or Android).	4.37	.58	11	Very high
3. Using printers.	4.40	.59	10	Very high
4. Using digital cameras.	4.25	.77	13	Very high
5. Using electronic readers such as Kindle.	3.45	1.31	22	High
6. Attaching files to emails or to sharing websites.	4.50	.67	6	Very high
7. Transferring files from cell phones to computers or vice versa.	4.50	.67	5	Very high

8. Navigating the web browsers such as Internet Explorer and Firefox.	4.72	.45	1	Very high
9. Using search engines such as Google or Bing.	4.67	.47	2	Very high
10. Finding information that you want on a website.	4.42	.59	8	Very high
11. Evaluating if information on a website is up-to-date and reliable.	3.92	.99	17	High
12. Figuring out how trustworthy a website is.	3.65	.94	21	High
13. Using email.	4.65	.53	3	Very high
14. Participating in an electronic conferencing or online forum.	3.40	1.10	24	Average
15. Using social networking sites such as Facebook, Twitter, Instagram, etc.	4.35	.62	12	Very high
16. Using a Word Processing to create documents.	4.57	.63	4	Very high
17. Using Presentation software (e.g. PowerPoint or Prezi).	4.17	.74	14	High
18. Using electronic databases (e.g. MS Access) and managing excel files.	3.30	1.04	25	Average
19. Collaborating with others on a group work.	3.22	1.09	26	Average
20. Downloading files to different locations on a mobile or computer.	4.40	.77	9	Very high
21. Operating language labs.	3.02	1.07	29	Average
22. Using smart boards.	2.87	1.18	31	Average
23. Using scanners.	3.42	1.17	23	High
24. Establishing networks on a computer.	3.20	1.20	27	Average
25. Troubleshooting technical hardware and software problems.	2.95	1.06	30	Average
26. Understanding copyright ownership when downloading files (books, videos, images, etc.) from the Internet.	3.77	.97	18	High
27. Securing your electronic device (Anti-virus software, firewall, spyware, etc.).	3.70	.75	19	High
28. Creating a wiki.	2.45	1.08	34	Low
29. Using and editing blogs.	2.77	1.16	32	Average
30. Installing software.	3.97	.94	16	High
31. Creating and editing video/audio files.	3.12	1.13	28	Average
32. Using electronic library databases for searching resources such as books and articles.	4.00	.67	15	High
33. Editing documents.	3.67	.85	20	High
34. Creating and editing simulations and animations.	2.60	1.21	33	Low
35. Creating web pages.	2.45	1.15	35	Low
Weighted Mean	3.75			High
Std. Deviation	.70			

According to the table above, the level of EFL teachers' digital literacy competency is high, this can be evidenced by the total mean of the respondents' digital competence which reached ($M=3.75$, $SD=0.70$). As stated previously in Table 3.1, a mean score ranging between (3.41 and 4.20) is of a high level; therefore, the observed value score (3.75) indicates EFL teachers' highly digital literacy level. To further confirm this result, the one sample t-test was used to determine if the observed mean of teachers' digital literacy is different from the hypothesized mean (3.00), which is derived from the medium of the five- point Likert scale questionnaire (Table 3.3).

Table 3. 3 One sample t-test results of EFL teachers’ digital literacy level

Digital Literacy Competence	N	Observed Mean	Std. Deviation	Hypothesized mean	Mean Difference	T	Df	Sig.
	40	3.75	.54	3.00	.75	8.80	39	.00

As indicated above, the t-test value of (8.80), which is statistically significant at the level (0.00), demonstrates the high level of digital proficiency among EFL teachers. Additionally, the observed mean of teachers’ digital literacy level (M=3.75, SD=0.54); which is greater than the hypothesized mean value (M=03.00), also proves that EFL teachers’ digital competence is high and beyond the average level.

Overall, the results shown in Table 3.2 demonstrate that the teacher participants responded differently to the questionnaire items. It can be observed that the level of EFL teachers in utilizing different digital tools ranged between (2.45 and 4.72). This implies that while teachers were very excellent or good users of some technologies, they were not very highly skilled in the use of others. The following is a detailed analysis of teachers’ capabilities in relation to the use of digital tools, which are arranged from the tools with the highest ranking to those with the lowest ranking.

The top thirteen skill areas that the teacher participants perceived themselves to be excellent at are the skills numbered as (08, 09, 13, 16, 07, 06, 01, 10, 20, 03, 02, 15 and 04); that is to say, they are excellent at using the *web browsers, search engines, emails, word processing, file transfers, file attachments, and computers*. They are excellent also at *finding web-information, utilizing printers, downloading files to computers or phones, using phones and tablet devices, as well as using social networking sites and digital cameras*. The top thirteen ranked-skill areas were identified as belonging to the excellent/very high level because they have mean values that ranged between (4.25 and 4.72). The digital skill achieving the highest score and thus the first rank is “*navigating the web browsers*” (M=4.72, SD=.45), followed by “*using search engines*” (M=4.67, SD=.47) as the second ranked skill, “*using email*” (M=4.65, SD=.53) as the third ranked skill, “*using Word Processing*” (M=4.57,

SD=.63) as the fourth ranked skill, and “*file transfers from cell phones to computers or vice versa*” (M=4.50, SD=.67) as the fifth ranked skill.

Respondents reported to have a good level (high level) in each of the following skill areas numbered as (17, 32, 30, 11, 26, 27, 33, 12, 05 and 23). This indicates that EFL teachers are good at ten digital skills, including *using presentation software as PowerPoint and electronic library databases, installing software, evaluating web-information, understanding ownership rights, securing devices, editing documents, recognizing trustworthy websites, using electronic readers and utilizing scanners*. These ten digital skill areas belonged to the high/good level category for having mean scores that ranged between (3.42 and 4.17). The first three skill areas that respondents believed themselves to be good at are: “*using presentation software as PowerPoint*” (M=4.17, SD=.74), followed by “*using electronic library databases*” (M=4.00, SD=.67), and then “*installing software*” (M=3.97, SD=.94).

Teachers thought that they have only an average competence in the digital skill areas numbered as (14, 18, 19, 24, 31, 21, 25, 22, and 29). They have a moderate level in nine digital skills, including *participating in electronic conferences or online forums, using electronic databases and spreadsheets as excel files, collaborating on online group works, establishing networks, editing video/audio files, using language labs, troubleshooting technical issues, using smart boards and utilizing blogs*. The nine skills were identified as belonging to the average level for having mean values that ranged between (2.77 and 3.40). The top three skill areas in which respondents rated themselves as average are: “*participating in electronic conferences or online forums*” (M=3.40, SD= 1.10), pursued by “*using electronic databases (e.g. MS Access) and managing excel files*” (M=3.30, SD=1.04), and “*collaborating with others on a group work*” (M=3.22, SD=1.09).

Nevertheless, the teacher participants believed they are less competent in the three lowest- ranked areas numbered as (34, 28 and 35), which are “*creating and editing simulations or animations*” (M=2.60, SD=1.21), “*creating wikis*” (M=2.45, SD=1.08) and “*creating web pages*” (M=2.45,

SD=1.15). These three skills were placed into the low level category due to their low mean scores which ranged between (2.45 and 2.60).

These quantitative results suggest that the majority of EFL teachers are proficient in using fundamental technologies such as web browsers, emails, word processing, file transfers and computers, but are less proficient in utilizing advanced technologies as simulations or animations, web page creations, wiki designs and online collaborative works. The fact that EFL teachers have a low level of competence in using these complicated tools is unquestionably an impediment to the effective implementation of new technologies in the department. Obviously, it can be observed that as the complexity of the technological tool increases, teachers' digital competence decreases. This finding is consistent with what has been found in previous studies which reported that teachers possess a low level of competence when it comes to use more sophisticated digital tools (Bates 2001; Levin & Arafah, 2002; Oblinger & Oblinger, 2005; Prensky, 2001; Trucano, 2005). Teachers' competence in using fundamental technologies may be attributed to the fact that most of them tend to use computers for ordinary tasks such as preparing lecture materials, sending emails, downloading files, recording attendance, participating in social networks, etc. Hence, their proficiency is deemed to be higher in utilizing basic technology tools.

Notably, the findings indicate that EFL teachers' digital literacy belongs to the foundational level of the DigEuLit project developed by Martin and Grudziecki (2006), which covers the mastery of basic technologies as internet searching, word processing, email, social networking, etc. In this respect, Martin and Grudziecki (2006) contended that tertiary teachers should have a higher competence level of digital usage in order to meet the professional requirements and competency standards of this digital age. Therefore, teachers are expected to have proficient skills in using advanced technologies such as designing wikis, web pages, and online learning materials.

Although the quantitative results showed that the perceived level of digital literacy among EFL teachers is high, the majority of them reported to have a moderate level of confidence in their digital competence. When asked to rate their confidence in their digital literacy proficiency, the teacher

participants responded differently to the five given options: “very low”, “low”, “average”, “high”, and “very high”. Their responses to these options are presented in the following table.

Table 3. 4 Chi-Square goodness of fit test for EFL teachers’ level of digital literacy confidence

Options	Frequency	Percentage	Expected Frequency	Residual	Degree of Freedom	Chi-Square	Significance Level	Decision
Very low	00	00	00	00	02	10.550	0.005	significant at ($\alpha = 0.01$)
Low	00	00	00	00				
Average	23	57.50	13.30	9.70				
High	09	22.50	13.30	4.30				
Very high	08	20.00	13.30	5.30				
Total	40	100%	////					

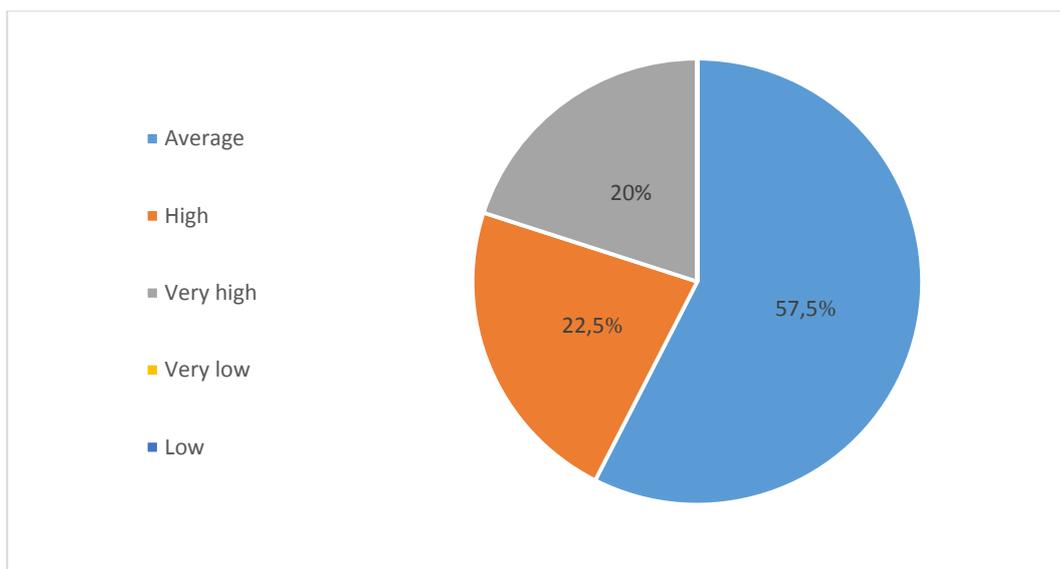


Figure 3. 1 Percentages for EFL teachers’ level of digital literacy confidence

According to Table 3.4, most of the teacher respondents (57.50%) believed that they have an average level of confidence in their digital competence, while only nine (22.50%) reported to have a high confidence in their digital competence, and eight (20.00%) reported to have extremely high confidence in their digital literacy skills. The Chi-Square value (10.550); which was used to determine the significance of these frequency differences is statistically significant at the level ($\alpha = 0.01$) with

the freedom degree of (02). Therefore, there are statistically significant differences among the participants' responses in favor of the "average" option.

The teacher participants were also asked to rate their digital literacy proficiency as compared to that of their students, they were given these three options: "Our knowledge levels are somehow equal", "I know more than my students do", and "my students know more than me". Their responses are presented in Table 3.5.

Table 3. 5 Chi-Square goodness-of-fit test for EFL teachers' perceived level of digital proficiency in comparison to their students' digital competence

Options	Frequency	Percentage	Expected Frequency	Residual	Degree of Freedom	Chi-Square	Significance Level	Decision
Our knowledge levels are somehow equal	17	42.50	13.30	3.70	02	12.350	0.002	significant at ($\alpha = 0.01$)
My students know more than me	20	50.00	13.30	6.70				
I know more than my students do	03	7.50	13.30	10.30				
Total	40	100%	////					

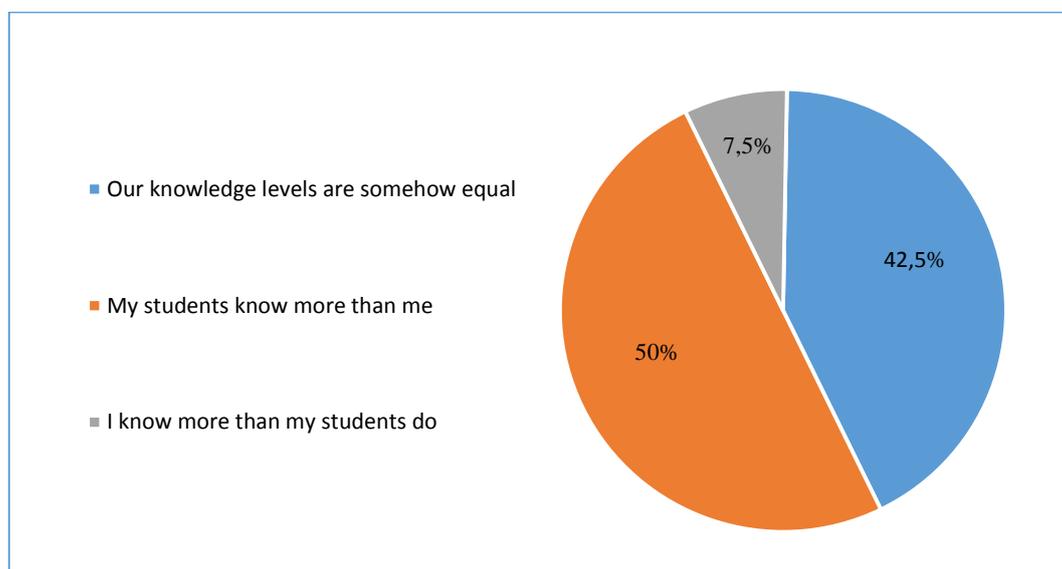


Figure 3. 2 Percentages for EFL teachers' perceived level of digital proficiency in comparison to their students' digital competence

Table 3.5 which shows the responses of EFL teachers regarding their own level of digital proficiency as compared to that of their students reveals the following: Half of the respondents (50.00%) claimed that their students are more knowledgeable than they are, while seventeen (42.50%) reported that their knowledge levels are almost equal, and three (07.50%) thought that they are more knowledgeable than their students. There are statistically significant differences among the participants' responses in favor of "my students know more than me" option, as indicated by the Chi-Square value (12.350), which was statistically significant at the level ($\alpha = 0.01$) with the freedom degree of (02).

Overall, the results showed that the teacher participants were not confident about their digital abilities. This is evidenced by the fact that the majority of them (57.50%) reported to have a moderate level of confidence in their digital competence, and half of them (50.00%) believed that their students have a greater level of digital literacy than they do. As indicated by several studies, the usage of new technology demands teachers to have confidence in their digital skills, which affects significantly the successful adoption of digital technologies in classrooms (Chen, 2008; Lee, 2000; Rahimi & Yadollahi, 2011). Hence, teachers' confidence needs to be enhanced to increase the potential uses of technological tools in educational settings.

3.1.1.2 EFL Teachers' Digital Skills- Qualitative Findings

Qualitative findings from interviews with EFL teachers concurred with the above quantitative data from survey questionnaire. All the interviewees stated that they have an average level of digital literacy, and considered themselves to be proficient only in the use of fundamental technologies. One of the interviewed participants claimed that his proficiency in using advanced technologies is moderate: "my digital competence is average, I am not professional in technology use. I feel that I am just an amateur, doing something very simple in the classroom" (Teacher B). Additionally, other participants reported to have moderate digital skills:

Well, let's say perhaps sometimes one might be subjective when asked about his literacy or digital literacy competence. If we relate to experience what we are using, what we are doing...let's say I have an average competence in digital literacy because we have

learnt in life to be realistic. We do not go beyond realistic things so that we do not go beyond our expectation. We have used so far certain digital technologies that are at our disposal in class or in laboratories, let's say we have excelled only in the use of simple tools. (Teacher A)

If we relate our digital literacy competence to our Algerian environment as it is, we might say we are competent, but compared to other societies and environments which have already gone beyond the industrial age and are really knowledgeable societies in digital technologies, we can say that we are really beyond the requirements of this age. (Teacher E)

Some of the interviewees expressed their anxiety in utilizing unfamiliar digital tools, revealing their lack of confidence in the use of novel technologies. For example, Teacher (B) stated that “I use only the digital tools that I know, and for those that I don't know I feel scared about trying them”, and teacher (E) declared that “frankly speaking, I do not feel comfortable in using all new technologies, I tend to use only the materials I am familiar with, and I feel anxious about trying new tools”. Similarly, teacher (C) shared the views of participants (B) and (E), and highlighted teachers' inadequacies in using advanced technological tools. However, she believed that teachers could truly improve their digital skills through the excessive use and practice of these tools:

Well, I think that teachers are weak at using complicated tools such as designing web pages and online conferences. As far as I am concerned, I think that I have no idea about them maybe because I have not tried them. But, what is amazing about technology is that it is feasible to be learnt, once you try it and try it again, then everything will be ok, you will learn it. For example, it is easy to learn about the use of email, blogs, Facebook and word processing though practice. (Teacher C)

Similar reflections have been expressed by teacher (D), who further confirmed the inadequacy of teachers' digital literacy by asserting that he and his colleagues lack digital abilities when it comes to the use of more complicated technologies:

I think we all have an average level of digital literacy. If you do not mind, I might tell you something related to my experience with digital technologies. The first time I came to use really what is meant by digital technologies was when I followed the course of the American Institute of English at Oregon University, which was sponsored by the American Information Agency. From this experience I came to know what is meant by digital literacy and digital technology through the use of wikis, instant answers, instant feedback, instant collaboration, cooperation and interaction with learners all over the world. I think it is not enough to have skills only in the use of PowerPoint, tactile boards, computers, phones and so on in this age, because these tools are becoming traditional modes of technologies.

Moreover, most of the interviewees assumed that their students are more “tech-savvy” than they are. In this respect, teacher (B) claimed that “sometimes students overpass teachers in technology because we are not deeply oriented into these technologies”, and teacher (C) viewed that “students might have a good level because they have time to get in contact with these technological materials more than teachers do”. Teacher (E) explained that students tend to have a higher level of digital competence because they are the digital natives of this age, she contended that,

Because of experience, age and time, students seem to be more competent in the use of these digital technologies, sure because they are the digital generation. But we are doing our best to be a competent generation of migrants towards this, and we are trying to bridge the gap between what is existing in their competencies and what is missing in our skills.

When asked about the impediments to the advancement of digital abilities, many teachers identified the lack of technology tools and materials, the lack of institutional support, teachers’ workload, and insufficient time as major obstacles to the proficient use of digital technologies. The following statements illustrate their viewpoints:

The first thing is that the institution itself does not have the financial means to provide digital technologies for all teachers and all learners in classes, so that all the subjects would be run through digital technologies. So in this way, if digital technologies are present, there is no other solution except to prepare and develop one’s digital literacy. Another issue is related to learners, a teacher might use digital technologies, but some learners do live in very remote areas and they don’t have the financial capacities to provide themselves with tools and instruments so that they will be within the wave of learning. Another issue is the overload of work for teachers; for example, lecture preparation, exams, supervision; in addition to this, there is no sufficient time. (Teacher D)

Time pressure is a huge barrier, you know how time affects. To learn you have to spend time, you have to get a good training on technologies, you have to use them. But if you learn without using them then for what you learn! So, mainly time can affect the development of digital skills. (Teacher C)

We have many barriers that hinder the improvement of digital skills such as those related to time, space, financial problems, human resources, etc. In order to be taught there should be very equipped and competent people in the use of digital technologies to help teachers, but the problem is that if you find some one expert in digital technologies, this person lacks the foreign language by which he would provide a lot of help for both teachers and learners. (Teacher E)

As evidenced by their comments, the interview participants expressed the difficulty of having an adequate level of digital literacy among students and teachers within the existence of the above mentioned constraints, which impeded the advancement of their digital abilities. Nevertheless, almost all participants emphasized the need to develop their digital competence, arguing that a professional development in the use of advanced technology becomes a must in the current digital age. Participants (A) and (E) explained this perspective:

Well, the world is changing, developing and being globalized. Within little time in the future, the teacher would not have the traditional modes of knowledge and those printed materials, and the only way left is to prepare himself or herself for this digital age. Otherwise, he or she will not be a part of this world that has been being totally automated. (Teacher A)

We have to do our best to improve our digital skills because nowadays learners sometimes do overtake their masters. You know learners belong to a digital generation, they are all the time using and developing competencies, some of them have got fantastic skills in the use of digital technologies, and this urges us to seize the opportunity for developing our digital skills. I think that the improvement of digital competence becomes now a must for all teachers. (Teacher E)

Overall, the interview results showed that EFL instructors rated their own level of technology expertise as being relatively moderate, and believed that their students possessed a higher level of digital skills than they did. According to the assumptions of Chen (2008), Lee (2000), as well as Rahimi and Yadollahi (2011), the perceived lack of ability and uncertainty about digital competence would negatively affect the incorporation of digital technologies in EFL writing instruction, it would decrease the motivation of teachers to adopt advanced technologies, and hence rule out the use of some digital tools in classrooms. In addition, the results indicated that the interviewees acknowledged the importance of improving digital competence in order to further enhance their own professional identity and meet the requirements of working in the digitally academic settings. These reflections on the necessity of promoting digital competencies are consistent with the significance of developing teachers' digital professional identities which were highlighted in the research literature (e.g., Bates, 2005; Ertmer, 2005; Kim, 2002; Knobel, 2011; Lee, 2000; Mishra & Koehler, 2006; Prensky 2001; Trucano, 2005).

3.1.2 Digital Literacy Competence of EFL Students

This section presents findings related to EFL students' perceived level of digital literacy, it examines how they evaluate their digital skills and overall technological expertise. In response to the survey questionnaire, EFL students rated their proficiency in using digital tools on a five-point Likert scale: (1) illiterate, (2) poor, (3) average, (4) good and (5) excellent, as shown in Table 3.6.

Table 3. 6 Mean scores and standard deviations for EFL students' digital skills

Items	M	SD	Rank	Level
1. Using computers.	3.28	1.16	4	Average
2. Using cell-phones and tablet devices (iPad or Android).	3.37	1.10	2	Average
3. Using printers.	2.88	1.15	14	Average
4. Using digital cameras.	3.11	1.00	7	Average
5. Using electronic readers such as Kindle.	2.17	1.31	26	Low
6. Attaching files to emails or to sharing websites.	3.00	1.04	11	Average
7. Transferring files from cell phones to computers or vice versa.	3.01	1.14	9	Average
8. Navigating the web browsers such as Internet Explorer and Firefox.	3.22	1.00	5	Average
9. Using search engines such as Google or Bing.	3.31	1.06	3	Average
10. Finding information that you want on a website.	3.01	1.13	10	Average
11. Evaluating if information on a website is up-to-date and reliable.	2.42	1.13	21	Low
12. Figuring out how trustworthy a website is.	2.23	1.10	23	Low
13. Using email.	3.21	1.12	6	Average
14. Participating in an electronic conferencing or online forum.	1.82	1.11	33	Low
15. Using social networking sites such as Facebook, Twitter, Instagram, etc.	3.51	1.15	1	High
16. Using a Word Processing to create documents.	2.97	1.13	12	Average
17. Using Presentation software (e.g. PowerPoint or Prezi).	2.60	1.31	18	Low
18. Using electronic databases (e.g. MS Access) and managing excel files.	2.10	1.28	27	Low
19. Collaborating with others on a group work.	2.07	1.27	28	Low
20. Downloading files to different locations on a mobile or computer.	2.87	1.24	15	Average
21. Operating language labs.	2.00	1.15	29	Low
22. Using smart boards.	1.91	1.17	31	Low
23. Using scanners.	2.20	1.27	24	Low
24. Establishing networks on a computer.	2.18	1.19	25	Low
25. Troubleshooting technical hardware and software problems.	1.95	1.06	30	Low
26. Understanding copyright ownership when downloading files (books, videos, images, etc.) from the Internet.	2.45	.99	20	Low
27. Securing your electronic device (Anti-virus software, firewall, spyware, etc.).	2.60	1.15	17	Low
28. Creating a wiki.	1.82	1.12	34	Low
29. Using and editing blogs.	1.87	1.19	32	Low
30. Installing software.	3.08	1.25	8	Average
31. Creating and editing video/audio files.	2.91	1.24	13	Average
32. Using electronic library databases for searching resources such as books and articles.	2.51	1.20	19	Low
33. Editing documents.	2.76	1.18	16	Average

34.Creating and editing simulations and animations.	2.30	1.21	22	Low
35.Creating web pages.	1.65	.99	35	Very low
Weighted Mean	2.58			Low
Std. Deviation	.53			

The table above shows that EFL students have a low level of digital competency. This is evidenced by the total mean score for digital literacy which was (M=2.58, SD=0.53). As noted previously in Table 3.1, mean scores ranging between (1.81 and 2.60) represent a low level of digital competence. Therefore, the arithmetic mean score of (M= 2.58) indicates low digital literacy proficiency among EFL students. This result was further confirmed through the use of the one sample t-test, which compared students' observed mean of digital competence (M=2.58) against the hypothesized mean (M=3.00) to find out the statistical differences between the two mean scores (Table 3.7).

Table 3. 7 One sample t-test results of EFL students' digital competence level

Digital Literacy Competence	N	Observed Mean	Std. Deviation	Hypothesized Mean	Mean Difference	T	Df	Sig.
	80	2.58	1.00	3.00	.41	3.67	79	.00

As observed in the table above, the t-test value (3.67); which is statistically significant at the level (0.00), demonstrates that EFL students have a low level of digital competence. Additionally, the fact that the actual mean score (M=2.58, SD=1.00) for digital competence is lower than the hypothesized mean score (M=03) provides further evidence on the lack of digital proficiency among the 80 respondents.

According to the results presented in Table 3.6, students' mean scores in utilizing technological equipment ranged between (1.65 and 3.51), implying that they have both strengths and weaknesses in a variety of digital skill areas. This suggests that students may have a high, average, low or extremely low competencies in mastering different digital technologies. The following is an explanation of EFL students' capabilities with regard to the use of digital tools, which are ordered from the highest ranked to the lowest ranked tools.

Out of thirty five skill areas, item (15); “*using social networking sites such as Facebook, Twitter, Instagram, etc.*”, was rated as the top skill by the student participants. Interestingly, this is the only skill area in which EFL students demonstrate a high level of proficiency, it has taken the first ranking position with a mean score of (M=3.51, SD=1.15). It was classified as a high skill area because its mean score was between (3.41 and 4.20). In fact, using social media was the only skill that belonged to the high level category, no other skill was reported to be in this category.

The results show that EFL student have an average level of expertise in fifteen digital skill areas: (02, 09, 01, 08, 13, 04, 30, 7, 10, 06, 16, 31, 03, 20 and 33). In other words, they exhibit moderate competency in each of the following skill sets: *using phones and tablet devices, utilizing search engines, using computers, navigating the web browsers, using emails, using digital cameras, installing software, transferring files, finding web-information, attaching files, using word processing, creating and editing video/audio files, using printers, downloading files and editing documents*. The fifteen digital skills belonged to the category of the average level for having mean scores that ranged between (2.76 and 3.73). The top five skills in this category are as follows: “*using cell phones and tablet devices*” (M=3.37, SD=1.10), which ranked second after “social networks”; “*using search engines*” (M=3.31, SD=1.06), which ranked third; “*using computers*” (M=3.28, SD=1.16), which ranked fourth; “*navigating the web browsers*” (M=3.22, SD=1.00), which ranked fifth; and “*using emails*” (M=3.21, SD=1.12), which took the sixth position.

However, students believed that they have low/poor competence in these skills numbered as (27, 17, 32, 26, 11, 34, 12, 23, 24, 05, 18, 19, 21, 25, 22, 29, 14 and 28). This includes *securing electronic devices, utilizing presentation software, using electronic library databases, understanding ownership rights, evaluating web-information, creating and editing simulations/ animations, knowing trustworthy websites, using scanners, establishing networks, using electronic readers, using electronic databases and spreadsheets, collaborating on an online group work, operating language labs, troubleshooting technical issues, using smart boards, using blogs, participating in electronic conferences and creating wikis*. These eighteen skill areas had mean scores ranging between (1.82

and 2.60), and thereby they were identified as the lowest ranked skills. The top three lowest skills are: “*creating wikis*” (M=1.82, SD=1.12), “*participating in electronic conferencing or online forum*” (M=1.82, SD=1.11) and “*using blogs*” (M=1.87, SD=1.19). Moreover, one digital skill that students reported to have an extremely low level at is “*creating web pages*”, which took the last ranking position (M=1.65, SD=.99). It received a mean score lower than (1.80) and consequently was deemed a very low ranked skill.

In the light of these reported findings, it is conceivable that EFL students have limited abilities to make an effective use of digital technologies in their learning process. The above quantitative findings reveal that EFL students are not tech-savvy because they lack proficiency with modern technologies, they do not have strong abilities to use certain tools such as Web 2.0 tools, collaborative online works, web conferencing, website creations and so on. The only technological tool that students considered themselves to be competent at is the use of social networks. One reason for students’ high proficiency in the use of social media is the fact they tend to frequently utilize these tools in their daily lives.

These basic findings are consistent with previous study findings indicating that today’ learners are social networking savvy, yet not necessarily digitally literate (Lai & Gu, 2011; Guo et al., 2008; Trucano, 2005; Winke & Goertler, 2008). From this standpoint, the results suggest that age alone should not be used to categorize users of digital technologies and determine peoples’ digital competencies. The results suggest also that students need training programmes on how to use advanced technologies effectively for educational purposes. Therefore, educational stakeholders should constantly provide opportunities for the development of students’ digital competencies, as asserted by Warschauer (2008).

3.2 Teachers' Attitudes towards Digital Technology Integration in EFL Writing Instruction

This section provides results about teachers' attitudes towards the integration of digital technologies in EFL writing instruction. Findings from both survey questionnaire and semi-structured interviews are presented in two separate parts in order to develop a rich understanding of teachers' underlying opinions on the use of technological tools in EFL writing contexts.

3.2.1 Beliefs and Attitudes-Quantitative Findings

The teacher participants were asked to inform about their current attitudes toward technology usage in EFL writing instruction through a survey questionnaire on which they had to indicate their answers to the given items using a five-response Likert scale: strongly disagree, disagree, neutral, agree, and strongly agree. Their responses to the questionnaire items are calculated via the use of descriptive statistics consisting of frequencies, relative frequencies, means and standard deviations. The three items with negative polarity numbered as (06, 07 and 11) have been reverse coded before conducting the analysis. As Table 3.8 illustrates, teachers' attitudes towards the integration of digital technologies in EFL writing instruction are generally positive, the overall mean score was above (03), which shows that EFL teachers have positive feelings towards the incorporation of new technologies in EFL writing classrooms.

Table 3. 8 Descriptive Statistics of teachers' perceptions regarding technology integration in EFL writing instruction

		S.A	A	N	D	S.D	M	SD	Rank																																												
1. I generally hold positive attitudes towards integrating digital technologies in EFL writing instruction.	F	22	14	1	2	1	4.35	.94	01																																												
	R.F	55.0	35.0	2.5	5.0	2.5				2. Digital technology promotes interaction between EFL teachers and students.	F	20	15	3	2	00	4.32	.82	03	R.F	50.0	37.5	7.5	5.0	00	3. The use of digital technologies facilitates classroom management.	F	12	23	4	1	00	4.15	.69	04	R.F	30.0	57.5	10.0	2.5	00	4. Using web-based writing activities makes the learning of writing more attractive and faster	F	14	15	5	5	1	3.90	1.10	10	R.F	35.0
2. Digital technology promotes interaction between EFL teachers and students.	F	20	15	3	2	00	4.32	.82	03																																												
	R.F	50.0	37.5	7.5	5.0	00				3. The use of digital technologies facilitates classroom management.	F	12	23	4	1	00	4.15	.69	04	R.F	30.0	57.5	10.0	2.5	00	4. Using web-based writing activities makes the learning of writing more attractive and faster	F	14	15	5	5	1	3.90	1.10	10	R.F	35.0	37.5	12.5	12.5	2.5												
3. The use of digital technologies facilitates classroom management.	F	12	23	4	1	00	4.15	.69	04																																												
	R.F	30.0	57.5	10.0	2.5	00				4. Using web-based writing activities makes the learning of writing more attractive and faster	F	14	15	5	5	1	3.90	1.10	10	R.F	35.0	37.5	12.5	12.5	2.5																												
4. Using web-based writing activities makes the learning of writing more attractive and faster	F	14	15	5	5	1	3.90	1.10	10																																												
	R.F	35.0	37.5	12.5	12.5	2.5																																															

than using the conventional hand writing method.									
5. Digital technologies enhance students' personal expression and creativity.	F	10	23	5	1	1	4.00	.84	08
	R.F	25.0	57.5	12.5	2.5	2.5			
6. When utilizing digital technologies, students write faster and carelessly, with poor grammar, spelling and punctuation.	F	3	6	2	16	13	2.25	1.27	12
	R.F	7.5	15.0	5.0	40.0	32.5			
7. Digital technologies distract students from academic work and effective learning.	F	00	5	6	9	20	1.90	1.08	14
	R.F	00	12.5	15.0	22.5	50.0			
8. Technology provides teachers with effective learning materials and resources for EFL writing instruction.	F	22	14	00	4	00	4.35	.92	02
	R.F	55.0	35.0	00	10.0	00			
9. Technology facilitates the writing process as it enables students to revise and edit easily their works.	F	12	22	2	2	2	4.00	1.01	09
	R.F	30.0	55.0	5.0	5.0	5.0			
10. Students can collaborate and share their work with a larger audience thanks to digital technologies.	F	11	25	3	00	1	4.12	.75	05
	R.F	27.5	62.5	7.5	00	2.			
11. Today's technologies make it more difficult for students to find and use reliable resources.	F	3	2	00	19	16	1.92	1.14	13
	R.F	7.5	5.0	00	47.5	40.0			
12. Because technology use is important in EFL writing contexts, courses on digital literacy should be incorporated into the curriculum.	F	11	25	2	00	2	4.07	.88	06
	R.F	27.5	62.5	5.0	00	5.0			
13. The gap between the most and least successful students in academic writing is narrowed due to technologies.	F	11	13	6	5	5	3.50	1.35	11
	R.F	27.5	32.5	15.0	12.5	12.5			
14. Technology helps students to understand and develop different writing styles.	F	14	20	2	3	1	4.07	.97	07
	R.F	35.0	50.0	5.0	7.5	2.5			
Weighted Mean						3.63			
Std. Deviation.						.90	Positive		

Note: F: frequency, R.F: relative frequency, S.A: strongly agree, A: agree, N, neutral, D: disagree, S.D: strongly disagree, M: mean, SD: standard deviation.

The table above shows that the forty teacher participants have a favorable attitude regarding the use of technology in EFL writing instruction. The overall mean of teachers' attitudes (M=3.63, SD=0.90) is within the range of (3.41 - 4.20) on the judgment scale for attitudes in Table 3.1, making it a positive level. The high mean scores of several questionnaire items, which reflect the high rate of respondents' agreement with the survey questionnaire, further demonstrate the participants' positive feelings. The participants reported high positive perceptions about the effectiveness of technology

incorporation on all items (except items 06, 07, and 11), the highest positively ranked items are the following: 01, 08, and 02.

According to the results shown above, item (01) *“I generally hold positive attitudes towards integrating digital technologies in EFL writing instruction”* is ranked first (M=4.35, SD=.94) among the identified opinions on technology integration in EFL writing classroom. The majority of teachers (55%) strongly reported to have positive views about the implementation of technologies in EFL writing instruction. Item (08) *“technology provides teachers with effective learning materials and resources for EFL writing instruction”* is ranked second (M=4.35, SD=.92). The reason for the very high approval on this item could be the fact that technology is frequently used by instructors for accessing a variety of educational materials that are important for the teaching of writing skills. The feature of being interactive has taken the third place among the teachers’ views on the effectiveness of technologies in EFL writing instruction (M=4.32, SD=.82). Half of the participants (50%) showed strong agreement with item (02) *“digital technology promotes interaction between EFL teachers and students”*, thus they highly valued the potential of technologies in facilitating interaction for developing writing skills.

As Table 3.8 indicates, views on the value of technology in *facilitating classroom management* (M=4.15, SD=.69), *enhancing collaboration and shareability* (M=4.12, SD=.75), and the need for *incorporating digital literacy courses into the curriculum* (M=4.07, SD=.88) received high mean scores. Positive views were also reported on the merits of technology in *developing writing styles* (M=4.07, SD=.97), *promoting personal expression and creativity* (M=4.00, SD=.84), *facilitating revision and edition processes* (M=4.00, SD=1.01) *increasing interest in EFL writing instruction* (M=3.90, SD=1.10) and *narrowing the gap between the most and least successful students* (M=3.50, SD=1.35).

On the other hand, the items (06, 11 and 07) are the three lowest ranked items. Item (06) *“when utilizing digital technologies, students write faster and carelessly, with poor grammar, spelling and punctuation”* is among the three lowest ranked items, it has taken the twelfth rank position (M=2.25,

SD=1.27). In other words, many participants (40%) did not agree with the view that technologies negatively influence students' writing quality. Item (11) "*today's technologies make it more difficult for students to find and use reliable resources*" is the second lowest ranked item, its position is thirteen (M=1.92, SD=1.14). A large number of respondents (47.5%) showed their disagreement with the opinion that technologies make it hard for students to find reliable resources. The lowest ranked item is the one numbered (07) "*digital technologies distract students from academic work and effective learning*", which has taken the fourteenth and the last rank position with a low mean score of (M=1.90, SD=1.08). Half of the participants strongly disagreed (50%) with the view that technologies distract learners from their academic studies.

Generally, the results of the survey questionnaire showed that teachers hold positive attitudes towards the integration of digital technologies in EFL writing instruction. Teacher participants recognized the potential of technology to provide learning materials and resources that are important for the enhancement of writing skills. They also acknowledged the advantage of technology in enhancing interaction between them and their students. This appears to be in line with other researches indicating that digital technologies offer a plethora of resources and provide various channels of communication and interaction which can be used for language learning purposes (Azmi, 2017; Burbules, 2006; Craig, 2012; Dowling, 2003; Elola & Oskoz, 2017; Thorne, 2009; Warschauer & Kern, 2000; Zhang & Barber, 2008).

Major benefits of technology use in EFL writing classroom, such as its potential in facilitating classroom management, and promoting collaboration as well as shareability were also highly appreciated by the teacher participants. In addition, the participants emphasized that digital technology supports the enhancement of writing style, personal expression and creativity among students, and facilitates the edition and revision processes. This is consistent with other study findings indicating that digital tools enable students to iteratively edit and revise their written works, and allow them to practice writing at their own pace, which is significantly important for the development of EFL students' writing skills (Adas & Bakir, 2013; Ahmed, 2016; Chuo, 2007; Warschauer, 1996).

Due to the perceived merits of new technologies, the majority of participants thought that digital literacy courses should be incorporated into the curriculum.

Participants also reported that the use of technology increases students' motivation, which is critical in promoting effective learning as attested in the research literature (Azmi, 2017; Chen, 2016; Craig, 2012; Crook et al., 2010; Lankshear et al., 2000; Lightbown & Spada, 2006; Peterson, 2012; Thorne, 2005). To some extent, participants of this study also considered that the use of technology narrows the gap between the most and least successful students, implying that technologies provide students of low proficiency levels with essential skills that make them more competent in the use of English language. Furthermore, most of the participants did not believe that technologies create difficulties among students for finding and using reliable resources, and they did not believe as well that the web-based writing practices would negatively influence EFL students' academic writing.

3.2.2 Beliefs and Attitudes-Qualitative Findings

To a certain extent, qualitative findings gathered from semi-structured interviews concurred with the quantitative results of the survey questionnaire. The interview respondents highlighted the importance of using digital technology in EFL writing instruction for reinforcing the learning of writing skills, and asserted that its incorporation in classrooms becomes an essential requirement in this age. Participant (A) and participant (B) explained this view:

No one can deny that digital technologies in EFL learning or in learning in general whether at secondary, primary or tertiary context is so important. It is in fact quite important to use all possible technological means, because these ICTs are amongst the possibilities that might faster or foster the learning of EFL writing skills among students. (Teacher A)

I think it is very important to include digital technologies in tertiary EFL context because everything today is digital and everything is related to the internet: Content of lessons, activities, and all what we need as materials or as aids. (Teacher B)

Three of the participants stated that the use of web-based writing motivates EFL students to write. They thought that the use of technology in classrooms makes the learning process more attractive and engaging for students. Generally, the idea of technology integration is quite appealing for this

generation, because students tend to view it as a more suitable teaching method for the digital age.

Some participants commented,

Let me say there is a saying in English and in other languages that variety is the spice of life. The use of new technologies in class is something related to variety. The more there is variety in the modes of teaching and in the instruments, the better we and the learners feel, the learners are attracted by these tools that arise their curiosity. (Teacher A)

Well, I don't have exact statistics, you see, but I think that this generation is a digital generation. So they will be comfortable about using digital technologies in classrooms because that is the best channel through which they learn a language. (Teacher C)

I think that students like the use of technologies because these technologies create a favorable atmosphere in the classroom. For example, when I give them a paragraph to write and I see them using the web dictionaries, it is motivating as they enjoy this atmosphere of using technologies in classrooms. In addition, these digital tools save time, and help students also in ameliorating their pronunciation and improving other language skills. (Teacher E)

Concerning the major advantages of technology in the learning process, teacher (A) viewed that technology use is time-saving, economical, and more convenient for EFL learning. He believed that technology provides students with opportunities to access web-content and learn conveniently regardless of time and place constraints:

Sometimes there are certain advantages of technology that are short term, there are others that are long term. We start with advantages on learning writing or EFL learning in general in terms of space and time. In terms of space, learners can learn through these digital technologies whether in class or outside the class. In terms of time, it is time saving. In terms of content, the flow of knowledge content surely will be more available and at hand for learners, better than the traditional environment of learning.

Participants acknowledged the potential of technology to provide authentic language materials, promote writing practices and increase students' motivation. However, they expressed that its inappropriate use might lead to certain problems such as language inaccuracy, laziness, plagiarism and time wasting among students. The following comments show these views:

Technology provides or widens the scope of using authentic learning materials: books, stories and all of the writing resources we find them available. It opens the gate for students to read, write and share their writing. Concerning the negative effect, it might be on the accuracy of the language and the formal style. Also it creates somehow lazy students, if students get used to the use of technology, once you turn back to the classical traditional method, they will not cooperate with you or engage in classrooms. (Teacher C)

Using digital technologies in EFL writing instruction is a two-edged sword. On one hand, teachers should know what, why, when, and how to use them. They are advantageous as they may bring variety to their writing class. They are faster if they are employed well. On the other hand, they can encourage laziness or bring boredom for students. (Teacher D)

Well, technology is beneficial in terms of saving time, providing learning content and creating motivation in classroom. However, students sometimes use it inappropriately; for example, some of them use it for chatting, wasting time, and plagiarizing. If they use it in a good way, I think it will have an effective outcome on their learning. (Teacher E)

One of the participants reported that technology consumes time, this means that teachers would have to do extra work for the preparation of the instructional content and the design of learning materials. Such preparation might take several hours of work for teachers who already have pedagogical, academic and administrative responsibilities to undertake. According to teacher (C),

Well, the negative point of technology use is that it is time consuming. It takes time to gather these digital devices, to prepare the lessons and materials for the classroom, and to reorganize the classroom. You know that we already have a lot of work to do, and the classical scene of the classroom where you have the teacher in the front is not time consuming like this. That is why I think the use of technology takes a lot of time.

Additionally, the use of digital technologies also worried some participants for the fear that online writing practices might deteriorate essential writing aspects such as accuracy and formality. The following statements illustrate their viewpoints:

Well, the problem of this technology; mostly used in the digital age, is texting that breaks the grammatical and syntactic rules. This might affect because learners sometimes do bring with them what they exchange as online messages in classes. Though it is language and it is understood, yet it affects their academic writing competence. In order to achieve certain academic writing level that is accepted, we have to consider the use of grammar which is sometimes not respected on digital technologies, and we have to give attention to the choice of words. In fact, these academic issues are not often given attention during the use of technologies. (Teacher A)

To a certain extent these technologies help novice writers, but still we are afraid of making mistakes because some blogs and online spaces are not purely written by proficient students. We risk to have this deterioration in students' writing because these mistakes might transfer to affect their academic language. (Teacher B)

As I have told you before, the effectiveness of technology depends on how students use them. Sometime we find students who got really inspired by creative ideas, style and expressions from some tools such as blogs and wikis, others might just take the vernacular language or the informal language and its negative effects on writing. (Teacher C)

Although the interview teachers expressed favorable opinions on the integration of digital technologies in EFL writing instruction, they showed great concerns about the appropriate use of technologies among students, indicating that the effective outcomes of technologies on writing skills rely mainly on the critical decisions and adequate selections that students make when learning online. The following statements reflect their concerns:

We have to be selective while using technology, we advise students to select the material they read, they shouldn't take anything for granted. They have to use their critical thinking and their critical reading, they have to read behind the lines, they have to read what is good and what is bad, and then select what is appropriate on the net. (Teacher B)

These digital technologies provide a huge amount of knowledge, but sometimes the way learners might choose what is important, what is less important would be a bit difficult, and sometimes also learners are taken by the way of these digital technologies while surfing and perhaps they might go straight looking for other things rather than learning. If learners don't know how to choose the appropriate web-content and use web-information critically, they may find themselves go beyond the objectives of academic learning. (Teacher D)

Technology; if used appropriately, can develop EFL writing skills to a great extent, because students can have everything they need on the web-content, but if students do not manipulate their uses, or do not know how to make their adequate selections, it might affect their writing skills negatively, so it all depends on the way it is used. (Teacher E)

Most of the interview participants believed that technology is an important tool in EFL writing instruction if it is used for well-planned objectives. They strongly emphasized that it should be integrated in classrooms only when necessary. This implies that technology is useful only if it is used in specific ways to enhance the instructional practices, and if it fits with the targeted learning aims. Teacher (E) clearly illustrated this view by stating that "I believe that digital technologies should not be used for the sake of digital technologies. Digital technologies are effective and they are good when you have got a clear objective in learning". Other participants strongly confirmed this idea:

Let's say there is this English proverb that every little helps. Anything which helps learners to learn is for sure advantageous. So we can say that technology would help a lot of learners, but the problem is not in technology itself, it is in the goals and the objectives that we set for our learning, and in the objectives that are set for web-based writing. If we have got clear objectives, and have got clear strategies to use, then we

would surely have an effective use of these digital technologies in writing classrooms. (Teacher A)

New technologies might help if they are under the guidance of a teacher, or a specific program or well-planned objectives. But if they are left to the personal use of students, we can confidently say that not all students are aware or know how to use and profit from these devices. They might spend the whole day in chatting without learning, or in breaking their language proficiency through the use of Facebook chat language. So the positive outcomes of technology depend on how it is used, by whom it is used and as well for what purposes it is used. (Teacher C)

In my opinion, I can say that these digital technologies are really very positive if there is a good use or excellent intake of knowledge. However, the use of digital technologies is not a requirement in life, the objective is to learn a foreign language. So if you can use technology in the best way to learn, then there will be some good results. If it is not the case, so we can say that these technologies bring nothing. (Teacher D)

In general, findings from semi-structured interviews revealed that teachers had both positive and negative attitudes towards the incorporation of digital technologies in EFL writing instruction. The interview participants expressed their enthusiasm and concerns regarding the use of technologies in classrooms. On the one hand, they believed that digital technology is important for accessing learning resources, gathering authentic materials, saving time and increasing students' motivation in EFL writing class. On the other hand, they reported that digital technology could lead to certain problems such as students' distraction, laziness, plagiarism and deterioration of academic writing competence.

Therefore, the participants suggested that students should not blindly accept all what they access on the network, they should rather use technology appropriately, and reflect on the potential benefits and risks of web content. This indicates that students need to put sufficient effort into their digital practices through the use of critical thinking skills and adequate decision making for the efficient enhancement of their writing skills. This finding is consistent with the research literature highlighting the importance of critical and reflective uses of technology for constructive goals (Buckingham 2006; Gilster, 1997; Martin, 2008). Additionally, the interview participants asserted that technology use is not essential in language learning, and strongly believed that it should be used only if it would enhance EFL writing instruction. This is in line with earlier research indicating that the benefits are greater

when technology is used as an instructional aid to meet learning objectives and enhance pedagogical practices (Azmi, 2017; Beatty, 2003; Craig, 2012; Davies, 1997; Pierson, 2001).

3.3 Current Situation of Digital Technology Integration in EFL Writing Instruction

Results about the current state of technology integration in EFL writing instruction are provided in this section. Findings obtained from survey questionnaire and semi-structured interviews are presented in distinct parts in order to provide rich evidence on how EFL teachers use digital technologies in writing classes.

3.3.1 EFL Teachers' Technology Practices-Quantitative Findings

As regards the survey questionnaire, teacher participants were asked to select statements representing the technological tools and digital activities they frequently use for teaching EFL writing skills. They were asked to rate how often they integrate digital tools in their EFL writing instruction according to a five-response Likert scale: all the time, most of the time, sometimes, rarely, and never. Their responses to the questionnaire statements are calculated through the use of frequencies, relative frequencies, means and standard deviations and presented in the following table.

Table 3. 9 Descriptive statistics of teachers' technology uses in EFL writing instruction

		A.T	M.T	S	R	N	M	SD	Rank																																																																												
1. Using a website, wiki or blog for supporting English writing practice.	F	00	2	8	7	23	1.72	.96	13																																																																												
	R.F	00	5.0	20.0	17.5	57.5				2. Asking students to use discussion groups for working collaboratively on an online writing project.	F	00	1	7	14	18	1.77	.83	12	R.F	00	2.5	17.5	35.0	45.0	3. Using online search engines to prepare for authentic learning materials related to EFL writing skills.	F	22	14	2	2	00	4.40	.81	1	R.F	55.0	35.0	5.0	5.0	00	4. Participating in students' online forums and providing necessary feedback on students' writing.	F	00	1	8	10	21	1.72	.87	14	R.F	00	2.5	20.0	25.0	52.5	5. Asking students to share their electronic writings with peers for exchanging feedback and ideas.	F	00	1	6	10	23	1.62	.83	16	R.F	00	2.5	15.0	25.0	57.5	6. Encouraging online submission of students' written assignments.	F	00	3	17	12	8	2.37	.89	8	R.F	00
2. Asking students to use discussion groups for working collaboratively on an online writing project.	F	00	1	7	14	18	1.77	.83	12																																																																												
	R.F	00	2.5	17.5	35.0	45.0				3. Using online search engines to prepare for authentic learning materials related to EFL writing skills.	F	22	14	2	2	00	4.40	.81	1	R.F	55.0	35.0	5.0	5.0	00	4. Participating in students' online forums and providing necessary feedback on students' writing.	F	00	1	8	10	21	1.72	.87	14	R.F	00	2.5	20.0	25.0	52.5	5. Asking students to share their electronic writings with peers for exchanging feedback and ideas.	F	00	1	6	10	23	1.62	.83	16	R.F	00	2.5	15.0	25.0	57.5	6. Encouraging online submission of students' written assignments.	F	00	3	17	12	8	2.37	.89	8	R.F	00	7.5	42.5	30.0	20.0												
3. Using online search engines to prepare for authentic learning materials related to EFL writing skills.	F	22	14	2	2	00	4.40	.81	1																																																																												
	R.F	55.0	35.0	5.0	5.0	00				4. Participating in students' online forums and providing necessary feedback on students' writing.	F	00	1	8	10	21	1.72	.87	14	R.F	00	2.5	20.0	25.0	52.5	5. Asking students to share their electronic writings with peers for exchanging feedback and ideas.	F	00	1	6	10	23	1.62	.83	16	R.F	00	2.5	15.0	25.0	57.5	6. Encouraging online submission of students' written assignments.	F	00	3	17	12	8	2.37	.89	8	R.F	00	7.5	42.5	30.0	20.0																												
4. Participating in students' online forums and providing necessary feedback on students' writing.	F	00	1	8	10	21	1.72	.87	14																																																																												
	R.F	00	2.5	20.0	25.0	52.5				5. Asking students to share their electronic writings with peers for exchanging feedback and ideas.	F	00	1	6	10	23	1.62	.83	16	R.F	00	2.5	15.0	25.0	57.5	6. Encouraging online submission of students' written assignments.	F	00	3	17	12	8	2.37	.89	8	R.F	00	7.5	42.5	30.0	20.0																																												
5. Asking students to share their electronic writings with peers for exchanging feedback and ideas.	F	00	1	6	10	23	1.62	.83	16																																																																												
	R.F	00	2.5	15.0	25.0	57.5				6. Encouraging online submission of students' written assignments.	F	00	3	17	12	8	2.37	.89	8	R.F	00	7.5	42.5	30.0	20.0																																																												
6. Encouraging online submission of students' written assignments.	F	00	3	17	12	8	2.37	.89	8																																																																												
	R.F	00	7.5	42.5	30.0	20.0																																																																															

7. Taking and displaying pictures of students' written assignments in classroom.	F	00	1	4	16	19	1.67	.76	15
	R.F	00	2.5	10.0	40.0	47.5			
8. Having students use web-based research to look for useful information before writing paragraphs, reports, or essays.	F	3	10	15	8	4	3.00	1.08	6
	R.F	7.5	25.0	37.5	20.0	10.0			
9. Using social networking sites (Facebook, LinkedIn or Google+) for exchanging ideas and interacting with students.	F	9	13	8	7	3	3.45	1.23	5
	R.F	22.5	32.5	20.0	17.5	7.5			
10. Using educational videos or other multimedia resources in classroom.	F	1	2	9	16	12	2.10	.98	10
	R.F	2.5	5.0	22.5	40.0	30.0			
11. Using the internet for keeping up updated on the latest knowledge (researches, content and methods) in EFL writing field.	F	11	21	6	2	00	4.02	.80	3
	R.F	27.5	52.5	15.0	5.0	00			
12. Using e-mail for written communication with students.	F	19	16	5	00	00	4.35	.69	2
	R.F	47.5	40.0	12.5	00	00			
13. Using Microsoft Word and PowerPoint to prepare for course materials.	F	13	17	7	2	1	3.97	.97	4
	R.F	32.5	42.5	17.5	5.0	2.5			
14. Using online platforms such as Moodle to upload lectures and classroom activities.	F	2	5	9	7	17	2.20	1.26	9
	R.F	5.0	12.5	22.5	17.5	42.5			
15. Encouraging students to engage into online reading (books or articles) to promote their knowledge on writing skills.	F	00	3	5	17	15	1.90	.90	11
	R.F	00	7.5	12.5	42.5	37.5			
16. Having students use online references (e.g. dictionaries) to enrich their writing.	F	00	11	10	11	8	2.60	1.10	7
	R.F	00	27.5	25.0	27.5	20.0			
17. Using online language tests and exercises for the assessment of students' writing skills.	F	00	1	3	11	25	1.50	.75	18
	R.F	00	2.5	7.5	27.5	62.5			
18. Using LCD projectors in classrooms to present lectures.	F	00	2	3	12	23	1.60	.84	17
	R.F	00	5.0	7.5	30.0	57.5			
Weighted Mean						2.55	Poor		
Std. Deviation						1.03			

Note: F: frequency, R.F: relative frequency, A.T: all the time, M.T: most of the time, S: sometimes, R: rarely, N: never; M: mean, SD: standard deviation.

The overall mean score (M=2.55, SD=1.03) in the above table demonstrates that digital technologies are poorly integrated into EFL writing instruction. As previously stated on the judgment scale for actual integration in Table 3.1, mean values ranging between (1.81 and 2.60) represent a low level of integration. The participants' low response rates to several questionnaire items is also an indicator of the inadequate use of digital tools in EFL writing classes. As shown above, participants

reported low integration rates on most of the questionnaire items (except items 03, 12, 11, 13, 09 and 08).

The teacher participants reported that they highly engaged in the activities of items (03) and (12) in EFL writing instruction. The highest applicable tool by EFL teachers is item (03) “*using online search engines to prepare for authentic learning materials related to EFL writing skills*”, which has taken the first ranking with a mean score of (M=4.40, SD=.81). Most of the participants (55%) reported to use all the time the internet to find reliable resources and prepare useful materials for teaching writing skills. Using emails is the second highly applicable tool in EFL writing instruction (M=4.35, SD=.69). Many participants (47.5%) claimed to all the time use item (12) “*using e-mail for written communication with students*”. Such written interactions and exchanges between teachers and students through e-mails could be useful for the improvement of students’ writing skills. According to this finding, teachers’ high usage of search engines and emails in EFL writing classroom seem to reflect the digital practices that they were frequently engaged into in their daily lives.

As shown in Table 3.9, the third applicable digital practice is item (11) “*using the internet for keeping up updated on the latest knowledge (researches, content and methods) in EFL writing field.*” (M=4.02, SD=.80). More than half of the participants (52%) reported that they used most of the time the internet for gaining knowledge on the latest updates regarding the context of EFL writing instruction. Item (13) “*using Microsoft Word and PowerPoint to prepare for course materials*” has taken the fourth ranking position of application (M=3.97, SD=.97). A large number of participants (42.5%) indicated that they rely most of the time on the use of Microsoft Word and PowerPoint tools to prepare for lectures and assignments. The fifth highly applicable tool is item (09) “*using social networking sites (Facebook, LinkedIn or Google+) for exchanging ideas and interacting with students*” (M=3.45, SD=1.23). Several participants (32.5 %) reported to use most of the time social networks for exchanging written interactions with their students.

In addition, a moderate rate of usage was given to item (08) “*having students use web-based research to look for useful information before writing paragraphs, reports, or essays*”, which has

taken the sixth ranking position with a mean score of (M=3.00, SD=1.08). Participants (37.5 %) indicated that they tended to sometimes ask their students to search for online materials before doing writing. This implies that teachers recognize the merits of exposure to online language content and have their students also exposed to it. Such kind of input is essential for the development of students' writing skills (Belz, 2003; David, 2001).

On the other hand, teacher participants reported to poorly use the following digital practices in EFL writing instruction: *Online references (e.g. dictionaries)* (M=2.60, SD=1.10), *online submission of students' written assignments* (M=2.37, SD=.89), *online platforms such as Moodle* (M=2.20, SD=1.26), *educational videos or multimedia resources* (M=2.10, SD=.98) and *online reading (books or articles)* (M=1.90, SD=.90). Furthermore, the majority of participants rated to almost never use the following technology-based activities in EFL writing classroom: *students' online collaborative projects* (M=1.77, SD=.83), *website, wiki or blog for writing practice* (M=1.72, SD=.96), *online forums and feedback on students' writing* (M=1.72, SD=.87), *pictures of students' written assignments* (M=1.67, SD=.76), *exchanges of electronic writings and feedback among peers* (M=1.62, SD=.83), *LCD projectors for presenting lectures* (M=1.60, SD=.84) and lastly *online language tests and exercises for assessing writing skills* (M=1.50, SD=.75). These activities (i.e. using a webpage, web-based feedback, online discussions, etc.) which require students' collaboration, problem solving and critical thinking skills are considered to be less frequently used by the teacher participants.

These quantitative findings show clearly that teachers tend to use digital technologies in EFL instruction mainly for accessing online information, preparing course materials, exchanging emails, planning lectures, typing lessons, and interacting online. Five web-based activities were found to be rarely utilized by teachers in EFL writing classroom including the use of online references, online submission of written assignments, lectures upload on Moodle, educational videos or multimedia resources, and online reading. Additionally, some digital resources and online activities are not integrated in EFL writing classes. According to teachers, they almost never use technology for

designing collaborative writing works, creating webpages or blogs, participating in online forums, displaying photos for students' writings, encouraging the exchange of online writings among peers, using LCD projectors, and assessing students' writing skills.

These results suggest that there is a poor use of sophisticated web-based activities and technological tools among teachers of the department, though they hold positive attitudes towards digital technology integration in EFL writing instruction. Teachers' uses of technologies for less complex purposes could be due to the fact that they do not frequently use technologies for advanced purposes in their daily lives. They usually tend to use digital tools for ordinary tasks such as sending emails, searching the internet, accessing information, participating in social networks, etc. As a result, they have a tendency to exclusively include fundamental technologies into classrooms. Teachers' reported digital practices in EFL writing instruction are in accordance with their level of digital literacy proficiency reported in the first section of this chapter. Their current adoption of digital technologies seems to fit the description of early stages of digital literacy competence, in which teachers use only the most basic technological tools (Martin & Grudziecki, 2006).

3.3.2 EFL Teachers' Technology Practices- Qualitative Findings

Qualitative findings gathered from semi-structured interviews with EFL teachers concurred with the above quantitative results of the survey questionnaire. Most of the interviewees stated that they tend to use the less complicated technological tools in EFL writing instruction. The most commonly used technologies among them were computers, projectors, PowerPoint, and Word Processing applications. These technologies were mainly used for presenting lectures embedded with photos, texts or videos. In this regard, teacher (A) and teacher (B) reported that they always used PowerPoint and projectors to deliver their lectures,

Let's say sometimes I use digital technologies in EFL writing class, and I would say I always use them if I consider the use of data show projector as one of the digital tools. I all the time present lectures through the use of projectors and PowerPoint programmes.
(Teacher A)

I always use some technological tools especially with writing projects. All the lessons of written expression course are projected on videos, they are also prepared in the form

of PowerPoint slides or sometimes Word document and presented in classroom through the use of data show. (Teacher B)

The above quotes indicate that teachers used digital technologies for low-level tasks such as lesson preparation and lecture delivery purposes. Some participants criticized the limited use of new technologies in EFL writing instruction, arguing that the overuse of data show projectors and PowerPoint presentations reflects the traditional modes of teaching. According to participant (E), “I sometimes use data show in writing class which is a very traditional mode, but for the use of other advanced digital technologies, I would certainly say that we are really behind the curve”. The interviewed participants stated that they had to employ their own devices in classrooms because the faculty staff did not equip them with technological materials, with the exception of data show projectors. For instance, teacher (B) emphasized that “the department provides only the use of a data show, and I use my own personal computer and everything that I use in the classroom is personal apart from the data show”.

However, some teachers reported that they did not use web-based writing activities in their instruction due to several reasons such as the lack of technological equipment, beliefs about the ineffectiveness of technology use in EFL writing course, insufficient time and teaching overload. Teacher (D) expressed that he did not employ digital tools because of the shortage of resources and inappropriateness of technology integration in the subject of EFL writing,

I don't use technology in my teaching process because of the lack of those resources. Besides, every module is unique, digital tools can be destructive in some contexts. So, both teachers and students should apply them adequately if their use is necessary... In fact, I think that the integration of technology depends on the nature of the learning subject because even if we have got many digital technologies, sometimes not all the digital technologies might fit for developing the different skills or learning skills. (Teacher D)

In addition, some participants believed that the use of technology in EFL writing class is a demanding endeavor that requires prior preparation and significant investments of time. Participant (A) and participant (E) illustrated their viewpoints:

Well, let say I have to be frank never before I have used web-based activities in teaching any of the modules I am supposed to teach because of the lack of time, the overload of module among students, the number of students, or the hardships we face at work. Up to now I have not ventured or tried to use such activities. (Teacher A)

Frankly speaking, I do not use any kind of web-based activities. I work in a traditional way, I deliver lectures in the normal teaching method and students do their activities in classroom or at home. I think we don't have sufficient time to design such online activities, we cannot receive, check and give feedback to this great number of students that we have in classrooms, it is indeed time consuming. (Teacher E)

For some teachers, EFL writing instruction is largely based on the use of knowledge content and learning resources available online. Teacher (C) explicitly said that she used in her teaching process the internet for finding some language materials that suited the learning objectives. For instance, she claimed to incorporate in her instruction audio stories which students had to listen to and then re-write, and to design as well some reading and writing activities for students to do:

Examples of some web-based activities which I use are these audio stories that students hear from the net. I give them the link, they just hear it, and then I suggest some activities. I design the activities, but the materials are there from some websites, especially the classical American literature which is a good website. They go there and listen to the story. And then I ask the students about the character, the plot and I ask them to re-write the story, so I do some re-writing and reading activities.

Teacher (B) believed that the internet is the best resource which he used for finding instructional language materials. He expressed that he used a variety of online tasks which expose students to a range of language input such as reading stories, finding information and watching videos for the improvement of students' writing skills:

We can say that I use all the time the internet for finding teaching resources. I use it also with students, I give them some online tasks or activities related to what we study in the classroom as; for example, filling in the gaps, reading some real stories or articles, watching educational videos or writing something creatively online. I oblige them to go to the internet to find resources and to do some activities there. So the aim behind this is to develop students' writing and also familiarize them with the use of technology, though at the beginning it is difficult, but they got somehow accustomed to it.

Many participants acknowledged the merits of new technologies in promoting students' writing accuracy. They viewed that encouraging students to practice online grammar exercises and see writing models supports the development of their writing performance. In this context, teacher (B)

reported to have his students do some online readings, observe models of writing and check online grammar rules:

I think that technology helps to develop students' grammar and writing, so students need to read some online texts and do grammar exercises. I sometimes ask my students to do some extensive and intensive online reading, because they need to have an idea about how the best writers write, they need to see models of writing on the net, they need to have their hands at writing not only at the level of theory, they need also to practice web-writing. So writing should be practiced, not learnt, I sometimes ask students to do some online grammar exercises because they need to learn some rules, but we must apply these rules when writing online.

Teacher (D) concurred with this view. He believed that students have weaknesses in language competence; therefore, he supported the use of technology for finding effective learning resources and models.

There are some shortcomings in students' language ability, so I think they have to find some effective digital tools. They can watch educational videos; for example, and take rules from these videos and then practice them. Other useful tools is to check online the spelling mistakes, they need a checker, they can use also online dictionaries, and use personal writing like online essays and paragraphs. Students need to review their grammar, they need to enrich their vocabulary and we have a plenty of digital resources to use. So when we talk about writing we talk about everything, it is reading, it is vocabulary, it is spelling, it is punctuation, it is everything, so students should find good tools to develop all these skills.

The qualitative findings also confirmed that E-mails and Facebook were highly used among the participants of this study as tools of communication between teachers and students. The interview participants commented that they used these tools for assigning writing activities, sharing written projects, providing feedback and interacting with students. These are some examples of their comments:

I think that I use digital tools to some extent, I don't know whether you consider them as tools or not. Sometimes I ask students to write and email me what they write, or to record videos, I give them projects which they record and bring in CDs, they share them with me also on Facebook. Sometimes, I bring my laptop because I don't have a data show and I expose them to some videos, authentic materials and audiovisual aids for enhancing their writing skills. (Teacher C)

Most of the online practices that I do are outside classroom settings. Technologies help me to prepare my courses and tasks, I use sometimes social media as Facebook and email to foster my communication with students, they help me for example in supervising students' researches and providing feedback on their writing. (Teacher D)

Although advanced technologies such as discussion forums, blogs and wikis are not used among teachers in EFL writing instruction, a number of interview participants supported the idea that such technologies could significantly enhance collaborative work, feedback and writing performance. They expressed how students can benefit from writing practices on these technological tools. The following statements are examples of their reflections:

As far as writing skill is concerned, I think we can integrate technology through the use of wikis where learners are given a topic to debate, to collaborate, to interact with one another, to correct one another instantly while they are developing compositions. We can use these technologies to help learners collaboratively develop a whole composition or essay, when everyone is providing a sentence or a part of the sentence. We can use these technologies in correction or feedback, in developing topics, in making suggestions and in comparing students' progress, so these tools; although not used in our classrooms, can refine the pieces of writing. (Teacher A)

Well, technology may be integrated in an appropriate way by creating students' online writing groups to ameliorate the proficient or the formal use of English, because you know some of these digital devices are destroying language proficiency. If we want to implement technology effectively in writing class, we can for example make students reflect on online conferences or re-write what they hear from a video they are exposed to. In writing class, blogs and wikis help a lot in facilitating writing practice, but I haven't been able to use them for the reasons I have mentioned before. (Teacher C)

Sure, there are plenty of technologies and other possible media to improve students' writing as the use of blogs and wikis, where learners are present there and everyone is trying to give assistance to the collaborative work, and others would correct or provide any kind of feedback. There are many technologies that are available to develop writing skills, but we don't use them, the problem is related to space and time, there is always the time pressure of the module itself in terms of content and in terms of time allotment. (Teacher E)

The main conclusion that can be drawn from these qualitative findings is that teachers used digital technologies in EFL writing instruction for getting language learning resources and presenting course lectures. The interview participants explicitly reported that they used technological tools to support low-level tasks such as finding instructional materials, and introducing students to a wide range of authentic input. They used mostly the internet to access and download instructional resources, audio-visual materials, computers and projectors for delivering lectures as PowerPoint presentations and interactive tools such as Emails and Facebook. Nevertheless, technology was not used to engage EFL students in more high-level tasks such as online writing practice, collaborative projects, feedback

exchange and online discussions. Generally, qualitative results revealed that the interview participants valued the potential of technologies in promoting EFL writing skills; however, they expressed that they could not incorporate more advanced technologies in their instruction due to several factors such as the lack of technological equipment, concerns about the inappropriateness of technological tools in EFL writing course, insufficient time, and teachers' workload.

3.3.3 The Department's Level of Technology Integration

This sub-section presents results related to EFL teachers' opinions on the level of digital technology integration at the department through the use of quantitative and qualitative data. Participants were asked to rate the department's efficiency in integrating digital technologies on three options: "behind the curve", "about average" and "ahead of the curve", their responses to these options were analyzed using Chi-Square goodness-of-fit test and presented as follows.

Table 3. 10 Chi-Square goodness-of-fit test for the perceived level of technology integration among EFL teachers

Options	Frequency	Percentage	Expected Frequency	Residual	Degree of Freedom	Chi-Square	Significance Level	Decision
Behind the curve	25	62.50	13.30	11.70	02	18.350	0.000	significant at ($\alpha = 0.01$)
About average	12	30.00	13.30	1.30				
Ahead of the curve	03	7.50	13.30	10.30				
Total	40	100%	////					

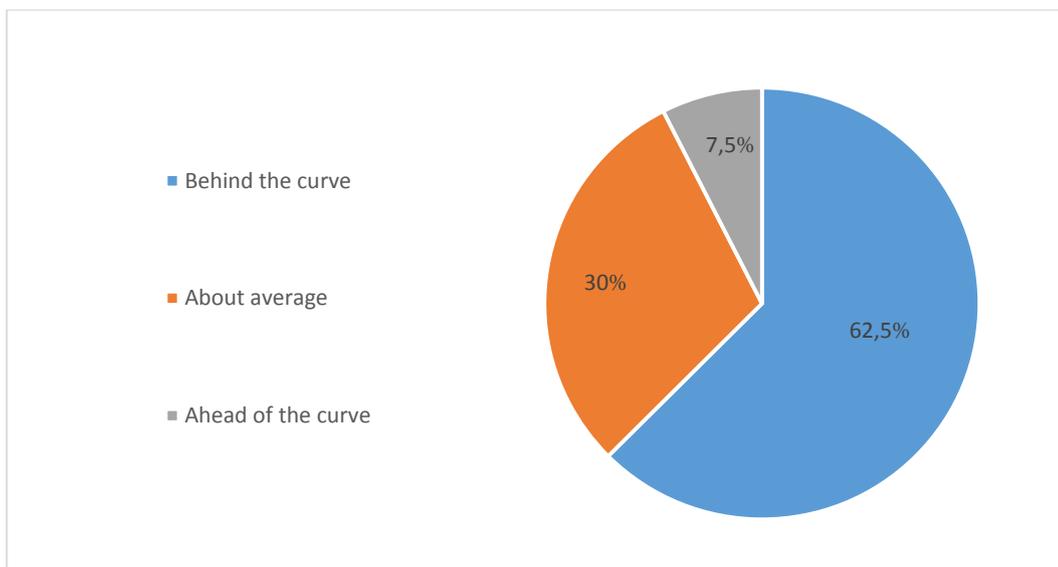


Figure 3. 3 Percentages for the perceived level of technology integration among EFL teachers

Most of the teacher respondents (62.50%) evaluated technology application at their work context as being “behind the curve”, while twelve (30.00%) considered it “about average” and three (07.50%) believed it is “ahead of the curve”. The Chi-Square value (18.350); which was used to determine the significance of these frequency differences is statistically significant at the level ($\alpha = 0.01$) with the freedom degree of (02). Therefore, there are statistically significant differences among the participants’ responses in favor of the “behind the curve” option.

The qualitative findings obtained from semi-structured interviews revealed also that there is a poor level of digital technology integration at the department. Many interview participants asserted that there was insufficient technological materials or there is almost an absence of technologies in their work context. Teacher (D) explicitly reported that “technology integration is limited at least for our department, I am not aware of what is going on in other departments, but in our department we have just one data show, you can imagine the rest”. In addition, teacher (A) stated that that there is a low level of technology integration in classrooms due to the shortage of resources, and argued that teachers had to use their own personal devices if they wanted to make use of technology in their EFL writing instruction,

Well, let say with the exception of the use of language laboratories and the technologies that are available there and also the personal efforts of teachers, I can say that the

department is not really integrating digital technologies in classrooms. If we speak about the department, or the faculty or the university, the integration of digital technology should be a policy that would last for a long term, and every time there should be some expansion of these technologies in the department. However, what is happening is that if there is no personal efforts done by the teachers themselves, I would say that the department is not using technologies at all because it is not a part of the policy.

Others confirmed the inadequate incorporation of new technologies in classroom settings, noting that teachers had to use their own personal efforts and seek assistance from one another because the faculty staff did not provide them with technical support:

I think we have a poor integration because we don't have the exact materials that we need, and any attempt of integration is due only to teachers' support, only teachers are doing their best, but there is no support from the administration. (Teacher B)

There are no attempts of technology incorporation from the department, but from colleagues there are some attempts. Sometimes we try to use some digital tools in writing classes, we try to exchange; for example, good websites for learning languages or information about these digital tools, we do collaborate in such things limitedly, but it is ok in general. (Teacher E)

Regarding the actual availability of digital technologies, teachers were asked whether or not the faculty staff provides them with the essential digital resources for integrating technologies into EFL writing instruction. Their responses which were distributed between the two options "yes" and "no" are analyzed through the use of Chi-Square goodness-of-fit test and presented in the following table.

Table 3. 11 Chi-Square goodness-of-fit test for EFL teachers' opinions on the availability of technologies in the department

Options	Frequency	Percentage	Expected Frequency	Residual	Degree of Freedom	Chi-Square	Significance Level	Decision
Yes	08	20.00	20.00	-12,00	01	14.400	0.000	significant at ($\alpha = 0.01$)
No	32	80.00	20.00	12.00				
Total	40	100%	////					

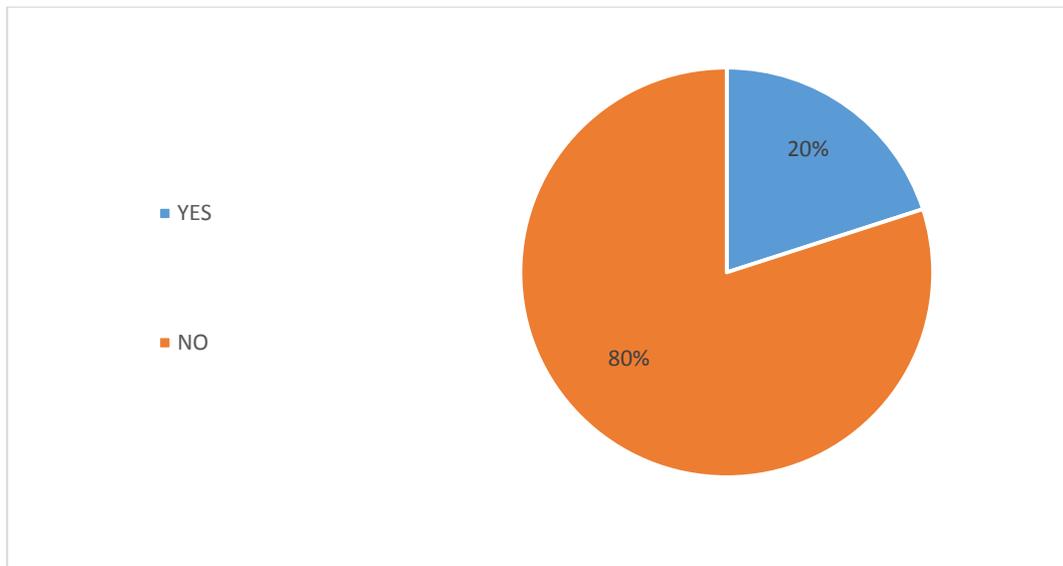


Figure 3. 4 Percentages for EFL teachers’ opinions on the availability of technologies in the department

According to Table 3.11, the majority of respondents (80.00%) reported that the faculty staff does not provide them with digital resources for the integration of digital technologies in EFL writing instruction, while a low percent of respondents (20.00%) thought that the faculty offers adequate digital resources. There are statistically significant differences between the participants’ responses in favor of “no” option, as indicated by the Chi-Square value (14,400) which was statistically significant at the level ($\alpha = 0.01$) with the freedom degree of (1).

The interview participants strongly believed that there is a lack of classroom facilities in the department, arguing that only traditional modes as PowerPoint presentations are used in classrooms. Teacher (A) indicated that “let say we have got thirty five teachers who can only use the very traditional digital technologies like the slides and PowerPoint formats, with the exception of this there is nothing else”.

Unsurprisingly, most of the participants regarded the lack of technological materials as a key barrier to the use of new technologies in EFL writing instruction. Teacher (C) and teacher (D) explained their viewpoints:

Digital technologies are poorly used, I think. The only thing that we use is the data show projector, and in oral expression module which is in the lab we use records, but it still depends on the teacher to bring these records. Sometimes we use online lectures, but

only few teachers use them, I think it happens only once or twice, not more. Ultimately, this lack of resources affects technology integration in writing classes. (Teacher C)

The provision of digital materials help a lot, you can't keep encouraging me by words and you don't provide me with materials. I should have materials, equipment and these digital tools in classrooms, of course we can't use technologies in writing classroom if we don't have them. (Teacher D)

Concerning the provision of training in new technologies, respondents were asked if their institution staff does a satisfactory job of offering teachers formal training on how to integrate digital technologies into classrooms. Their responses which were distributed between the two options of “yes” and “no” and are shown in Table 3.12.

Table 3.12 Chi-Square goodness-of-fit test for EFL teachers' opinions on the provision of formal training

Options	Frequency	Percentage	Expected Frequency	Residual	Degree of Freedom	Chi-Square	Significance Level	Decision
Yes	04	10.00	20.00	16.-00	01	25.600	0.000	significant at ($\alpha = 0.01$)
No	36	90.00	20.00	16.00				
Total	40	100%	////					

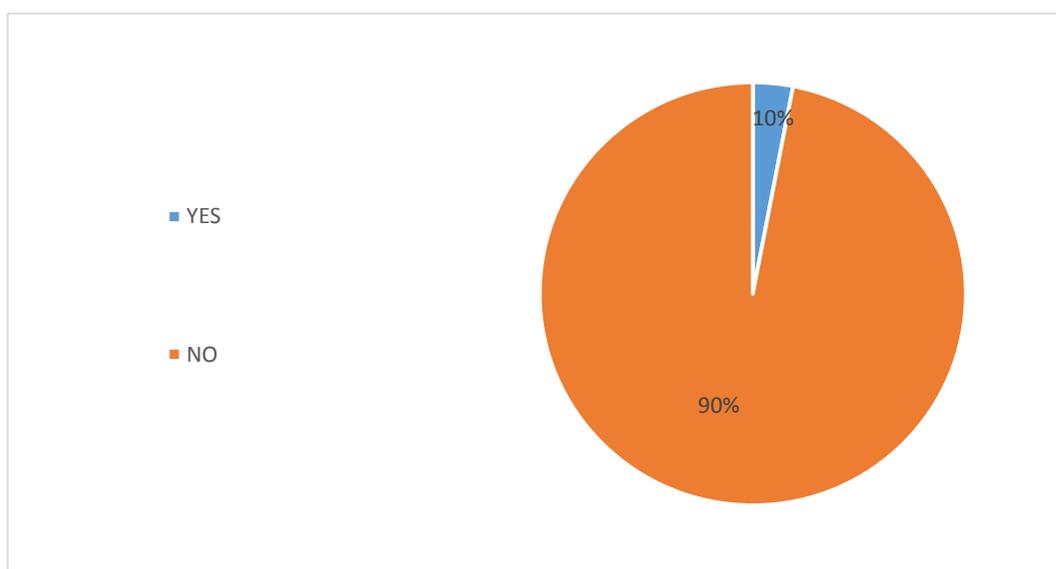


Figure 3. 5 Percentages for EFL teachers' opinions on the provision of formal training

Apparently, the majority of respondents (90.00%) chose the “no” response, indicating that they do not believe their institution staff offers adequate training on the use of new technology, while the

minority of respondents (10%) responded positively, suggesting that they think their institution staff provides sufficient training on the use of digital technologies in classrooms. The Chi-Square value (25.600); which was used to determine the significance of these frequency differences is statistically significant at the level ($\alpha = 0.01$) with the freedom degree of (01). Therefore, it can be concluded that there are statistically significant differences between the participants' responses in favor of the "no" option.

The interview participants revealed that the lack of adequate technical support affects the adoption of digital technologies in EFL writing instruction. Teacher (C) criticized the training programs offered by the institution staff which served only administrative purposes, illustrating that "all what they provide is training on using progress website and on using technological tools that serve only administrative objectives". In addition, teacher (D) stated that the institutional training is offered only to newly recruited teachers, and questioned the usefulness of such training programs when classrooms lack technological resources:

Let's say for the last years there has been certain programs to teach and to prepare especially the newly recruited teachers to use technologies in their instruction. But the problem is not limited to training teachers. When you train a teacher for one year to use technologies and the he goes to learning classrooms, where there is no technology, so for what!

Many interview participants reported that they did not receive effective formal training from the faculty institution, and that they had to use their own personal efforts for dealing with technical problems. In this respect, teacher (A) expressed that "as far as I am concerned, I had some training but from personal efforts only. Never before have I been taught by the institution or by someone's help. All what I have is from personal experience and personal efforts", and teacher (E) explained that the lack of technical support was due to the administrative staff's unfavorable attitudes towards new technologies:

You might have support from the one who is interested in the use of these technologies. You might have support from the one who possesses the equipment for the use of technologies. However, from the rest who do not have any equipment or are not interested in the equipment, you will have no support. Also not all people are interested,

if you have got a number of people who are interested in the use of technologies, you will have perhaps more people who are not interested or are still resenting and refuting the use of technologies.

In spite of these pressing conditions, the interviewees were still optimistic about the future uses of digital technologies in EFL writing instruction. They expected that there would be promising programs and plans promoting the incorporation of advanced technologies, as well as more resources available for use in the near future. The following statements represent their perspectives:

Well, in the near or mid-term future if there are resources, learning policy changes, and philosophy of education changes in Algeria, I might say that in the future we will have our EFL writing classrooms and our amphitheatres equipped with all possible digital technologies, and of course in this way we have to adapt ourselves in terms of modes of teaching and learning with these available technologies. So anyway, if the changes occur, we have to change. If things remain as they are, we have to change because things outside the learning institutions have totally changed. (Teacher A)

I expect that the teaching policy will change in the far future and all types of learning will be online, so we have to look for the ways of improving technology uses in writing classes, and we have also to develop our digital competence so that we can meet the requirements of this digital age. (Teacher E)

Generally, the quantitative and qualitative findings revealed that there is a low level of digital technology integration at the department. The lack of technological resources and technical support seemed to slow down the effective adoption of new technologies in EFL writing instruction. Although teachers recognized the merits of technology use in EFL writing context, it was difficult for them to incorporate digital tools in EFL writing instruction due to the lack of these facilities in classrooms. This finding is consistent with other study findings which indicated that the insufficient technological equipment and lack of technical support were key obstacles to the use of digital technologies in classrooms (Bates, 2005; Becta, 2004; Ertmer, 2005; Hunter, 2001; Lee, 2000; Pedro, 2007; Williams, 2003).

3.4 Relationship between Digital Literacy and EFL Writing Performance

In this section, the relationship between digital literacy proficiency and EFL writing skills is examined through the use of both quantitative and qualitative findings. Spearman correlation coefficient was used to test the first hypothesis which states that “*there is a statistically significant relationship between EFL students’ digital literacy proficiency and their academic writing performance*”. In addition, EFL students’ responses to the open-ended questions of the survey questionnaire were utilized to examine the effects of their digital literacy competence on the development of their English writing skills. Many students expressed their ideas on how they used digital skills for writing purposes and offered rich perspectives on the potential of digital literacy to develop writing skills. The responses presented in this section represent a small portion of data set gathered from a large sample consisting of 80 EFL students enrolled in third-year writing course at the English department of M’sila University.

Concerning quantitative findings, the test of spearman correlation coefficient was used to measure the correlation coefficient value between the first hypothesis variables: *digital literacy proficiency and academic writing performance*. The results are presented in the following table.

Table 3. 13 Spearman’s correlation coefficient between digital literacy proficiency and writing performance

Variables	Sample Size	Spearman’s correlation coefficient	Significance level	Decision
Academic writing performance	80	** 0.95	0.00	Statistically significant at ($\alpha = 0.01$)
Digital literacy proficiency				

As shown in the table above, the spearman’s correlation coefficient value between the total mean of digital literacy proficiency and the writing performance test is (**0.95). The coefficient value (**0.95) is extremely high, positive, and statistically significant at the level ($\alpha = 0.01$), indicating that there is sufficient evidence to support a strong relationship between digital literacy proficiency and

EFL students' writing skills. This result has a confidence level of (99%) and an error probability of (1%). Therefore, the null hypothesis which denies the existence of a statistically significant relationship between digital literacy proficiency and academic writing performance is rejected, and the alternative research hypothesis which confirms the existence of a relationship between the hypothesis variables is accepted. Consequently, the higher EFL students' digital literacy skills, the better their academic writing performance. The first hypothesis of the study, which states that "*there is a statistically significant relationship between EFL students' digital literacy proficiency and their academic writing performance*" is confirmed.

In examining students' responses to the open-ended questions of the survey questionnaire, it was remarked that many students have cited the advantages of digital literacy abilities in developing academic writing skills. They expressed that the digital practices they engaged into outside of college settings could offer valuable insights into the enhancement of their writing performance. A large number of students valued the fact that digital literacy enabled them to access digital language content in online spaces, which had rich potential for promoting the development of their writing competences. They shared ideas on how digital literacy facilitated their use of digital language resources for EFL writing learning purposes. The following are samples of students' written reflections on how digital literacy helped them to promote writing skills:

I think there is a strong relationship between writing and digital literacy, it is similar to the direct relationship between vision and writing. If we see the frequency, we see the word, we see the structure, we will be more able to memorize the writing structure and we will minimize the spelling mistakes, the grammar mistakes and so on. So, the more we write online, the more we read online, the more we check online writing resources, the more we use technology, the more we get ameliorated in our writing. (Student #07)

I consider myself as a digitally literate student, I use a large set of digital tools that help to develop my writing knowledge and practice. Sometimes when I get frustrated with printed handouts and books, I search for new interesting writing resources which put my enjoyment back to writing, these resources could promote my language knowledge and made me reflect more on how writing is composed. So I consider digital literacy as a great assist to all students because it offers them a real help in their studies, without it they can't properly use technological tools. (Student #09)

Digital literacy is helpful in the module of academic writing, because we like to learn in a different way, we need to put our hands on the learning materials, we need to manipulate, we need to touch and we need to practice. In case the teacher does not have

sufficient time for us to practice writing, we seek digital tools where we have unlimited opportunities to practice and reflect on our writing. (Student #24)

Students' written reflections revealed that digital literacy proficiency allowed them to experience writing for broad audiences in a variety of digital contexts. Students reported that their use of digital writing practice tools contributed to their EFL writing development, and helped them do well on written expression exams:

In fact, I am grateful that I have good digital skills which allow me to practice my favorite types of writing through websites or online applications. I really enjoy this way of writing because it takes the stress away from me. I feel comfortable to express my ideas to people I don't know, they don't mind if I make grammar mistakes or other mistakes, they care about how I feel in my writing and at the same time they just go smoothly when they want to draw my attention to some rules of writing. (Student #35)

Digital competence opens up for me good ways to practice writing and help me do well on exams. I think that because am proficient with technology, I can engage in online writing practices and receive responses or feedback from online readers, which help considerably in improving my writing. (Student #80)

Some students proposed the idea that academic writing skills could be practiced through social networks such as Facebook and Email messages. They explained that digital literacy enabled them to engage in written interactions within online communities, which could help them become better writers, and suggested that online writing practices outside of classroom settings could raise their awareness to essential writing issues. Respondents clarified this perspective by stating that,

The best way to improve writing is when I am not trying to learn it, digital skills allowed me to practice more and thus naturally learn more about writing, I could learn about important writing topics outside of classes, and could profit also from Facebook or email communications. (Student #04)

It is one thing to learn something but it is another different thing to see how it is actually applied in different contexts, this is the same when you learn to write, even social applications could teach you how to write in a better way if you are competent enough to use them. (Student #72)

Additionally, participants noted that digitally literate students may practice situated writing using social applications, which would offer them opportunities to write in different social contexts. They highlighted that when writing through these real-world applications, they kept in mind that they were writing for a specific audience for whom they needed to consider the appropriate writing style:

I think that digitally literate students have more chances for writing online, and have more awareness on what they write and read. For example, if they use social media, you will find them think more about what they see or read, they don't take things for granted, and when they send messages or emails, they would think of different ways of writing, they may try new expressions, vocabulary or stylish forms that are suitable to the readers. (Student #24)

Digitally literate people will know how to use and how to write through Facebook or other applications. For example, If I want to practice my English writing through Facebook, maybe I will contact somebody I know so I use informal English, or maybe I use more standard and formal English with people who are unfamiliar to me or have higher academic position than me. (Student #59)

I have some friends who are native speakers I contact them via email or Facebook. If I write for them I think more about the best way to express my ideas and the appropriate way to write for them. Sometimes they correct for me my mistakes and sometimes they teach me other better ways of writing. I can't keep updated about language knowledge, and I can't extend my learning and practice of writing if I am not digitally literate. (Student #66)

One of the significant concerns expressed by students is that the lack of digital literacy proficiency would make it difficult for them to grasp academic forms of language. They maintained that students with insufficient digital skills tend to fall into some writing deviations such as the use of abbreviations, improper capitalization, slang words and chat language, because they lack the critical thinking skills necessary for effective online learning. These are samples of students' written comments:

Many students have access to digital technologies, but not all of them are able to use properly these technologies in their studies, some cannot acquire knowledge or produce appropriate written drafts because they don't have adequate awareness on the effective use of technology. (Student #25)

I know some English students who have poor digital skills and want to be professional in writing, but they use texting language and slang words in their writing. I think they don't understand what they read online or cannot select what is good or wrong, this may be because they don't use their critical thinking when accessing information from the internet. (Student #40)

Although it is hard to draw such a causative relationship between proficiency in using technologies and proficiency in writing, I think honestly that students who lack digital skills and critical abilities practice wrongly writing; for example, they use abbreviation just as they use them in the Facebook chat, and this might have a negative effect on their academic writing competence. (Student #63)

Another important point mentioned by participants is that students with limited digital abilities would face complicated online issues such as intellectual property, credibility and validity of

information, which can lead to illegal practices as plagiarism. Participant (#40) explained that “the lack of critical thinking skills in using the internet make a lot of students fall in the trap of copy and paste technique”. Another participant clarified this idea by writing:

Some students write quickly and finish their tasks by plagiarizing other peoples’ writing. I think that they do not have the ability to assess information or they cannot manipulate all what they find in the internet, it is too much for them to grasp everything they see on the net, so they just prefer to practice plagiarism. Perhaps they are not used to technology or they do not have intelligent abilities to navigate through the internet and get what they want without putting themselves in the danger of plagiarism. (Student #18)

Moreover, some participants highlighted that digital illiteracy would minimize students’ access to online knowledge and participation in web-based writing communities. Those who lack ability to use digital technologies cannot access web-based learning materials, contribute in online writing groups, participate in blogs, distribute writing to large audiences, and use other digital tools. Their learning process is largely based on books and printed materials, and thus their learning opportunities might be restricted to classroom settings:

Now students who are poor at the use of technology cannot participate in writing websites. They cannot stay in touch with others either through e-mails or social media or other tools, and of course they are not able to enhance their academic writing through profiting from internet materials, they will just wait for the teacher to give knowledge and information, their learning is somehow limited in many ways. (Student #07)

You are not really going to get proper English writing resources when you are digitally illiterate. I think students cannot benefit from this huge set of online content if they cannot use technology, they will miss a lot of important resources, and also they cannot take part in writing through online tools as blogs or other means. (Student #13)

In general, participants suggested that poor digital skills would make students struggle in manipulating the standard rules of English language, arguing that those who lack critical engagement with technologies would often break down the conventions of academic writing. Conversely, having excellent levels of digital literacy enables students to engage in academic writing practices that resemble their existing traditional practices. This finding is consistent with other research findings which have shown that critical digital literacy correlates positively with writing development (Caws, 2006; Elola & Oskoz, 2017; Goldberg et al., 2003; Hafner, 2015; Mudra, 2020; Warschauer & Ware, 2006). Therefore, the enhancement of students’ digital literacies is an essential requirement to promote EFL students’ writing skills.

3.5 Effects of Digital Technology Integration on the Development of EFL Writing Skills

This section presents quantitative and qualitative findings related to the impact of digital technology integration on the development of EFL students' writing skills. The t-test was employed to assess the research's second hypothesis, which states that *“digital technology integration has a positive impact on the writing performance of EFL students”*. In addition, data gathered from the experimental group's responses to the open-ended questions were utilized to examine their underlying opinions and overall attitudes towards technology-enhanced EFL writing instruction.

The first part of this section provides results of the independent samples t-test statistic, which was applied in order to examine differences in writing performance between the control group and the experimental group. The control group and the experimental group were both taught the course of academic writing by the researcher; however, they had a different instructional method. The experimental group received technology-enhanced writing instruction, while the control group was taught using the conventional method of teaching. To make sure that the two groups were equivalent in their writing performance before starting the experiment, a writing pre-test was applied on the two groups, and then the independent samples t-test was utilized for measuring the significance of differences in their writing performances. Results of the pre-test writing performance of the two groups are summarized in Table 3.14.

Table 3. 14 Independent samples statistics of the control group and experimental group on pre-test

		N	Mean	Std. Deviation	T	Sig.
Pretest	Control	35	8.43	2.85	0.01	0.98
	Experimental	35	8.45	2.79		

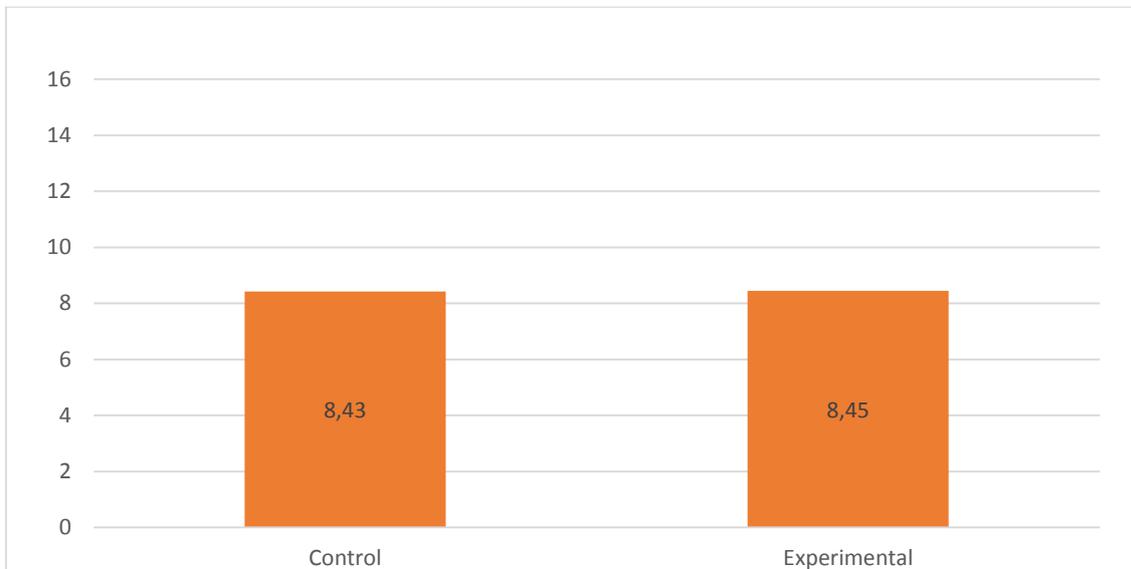


Figure 3. 6 Mean scores for the control group and experimental group on pre-test

According to Table 3.14, the mean score of the control group is (M=8.43, SD=2.85), and the mean score of the experimental group is (M=8.45, SD=2.79). The differences in mean scores between the control group and the experimental group were not statistically significant because the p-value (P=0.98) of the t-test value (T=0.01) is greater than the significance level ($\alpha = 0.05$). Therefore, it can be concluded that the writing performance of the two groups were nearly equivalent before conducting the experiment. After the end of the experiment, the two groups were administered a post writing test to examine if there was improvement in their writing performance. Results of the post-test are shown in the table below.

Table 3. 15 Independent samples statistics of the control group and experimental group on post-test

		N	Mean	Std. Deviation	T	Sig.
Posttest	Control	35	10.07	2.15	7.35	0.00
	Experimental	35	13.91	1.90		

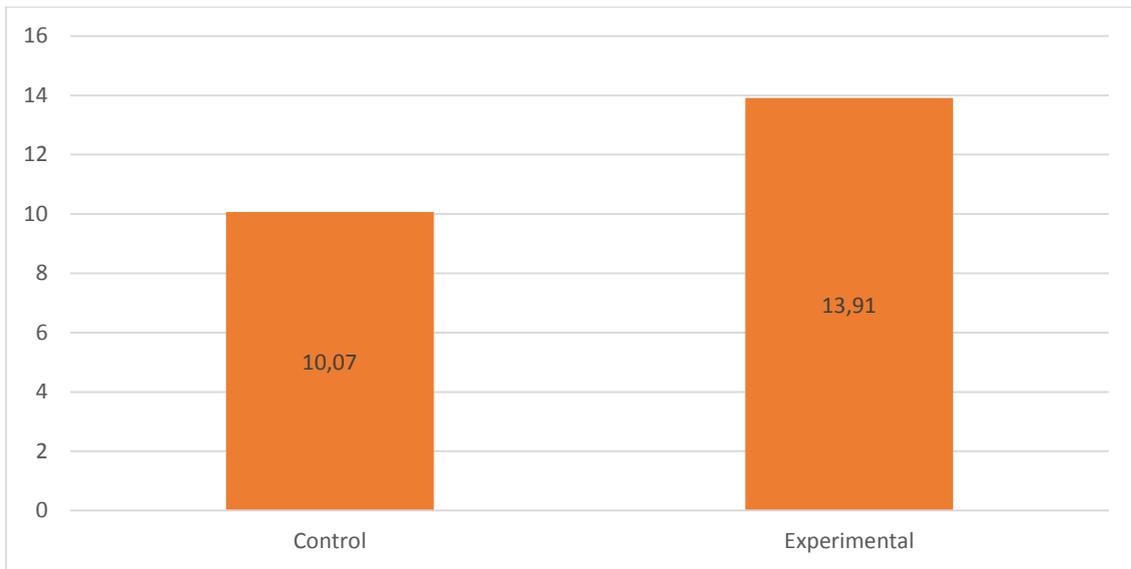


Figure 3. 7 Mean scores for the control group and experimental group on post-test

As illustrated in Table 3.15, after the end of the experiment the mean score of the control group was (M=10.07, SD=2.15), while the mean score of the experimental group reached (M=13.91, SD=1.90). The differences in mean scores between the control group and the experimental group are statistically significant (T=7.35, P=0.00). Therefore, it can be concluded that there are significant statistical differences in the post-test writing performance of the two groups in favor of the experimental group. Hence, the second hypothesis of this study which states that “*digital technology integration has a positive impact on the writing performance of EFL students*” was confirmed. Differences in the experimental group’s writing performance on the pre-test and post-test are displayed in the following table.

Table 3. 16 Paired samples statistics of the experimental group on pre-test and post-test

		N	Mean	Std. Deviation	T	Sig.
Experimental	Prettest	35	8.45	2.79	19.00	.00
	Posttest	35	13.91	1.90		



Figure 3. 8 Mean scores for the experimental group on pre-test and post-test

Table 3.16 shows that the mean scores of the experimental group on the pre-test was (M=8.45, SD=2.79), and on the post-test was (M=13.91, SD=1.90). This indicates that the differences in the mean scores of the experimental group's writing performance on the pre-test and post-test were statistically significant (T=19.00, P= 0.00). Therefore, it can be concluded that there are significant differences between the experimental group's pre-test and post-test writing performance, in favor of the post-test. Additionally, participants' performance in four sub-skills of writing were examined, the pre-test and post-test results of the two groups on these writing skills are presented in Table 3.17.

Table 3. 17 Paired samples statistics of writing sub-skills of the control group and experimental group on pre-test and post-test

Sub Skills	Group	Test	Mean	SD	T-value	Sig.
Content	Control	Pre test	2.64	1.00	4.35	.00
		Post test	3.28	.73		
	Experimental	Pre test	2.42	.69	14.98	.00
		Post test	4.25	.74		
Organisation of ideas	Control	Pre test	1.95	.71	1.83	.07
		Post test	2.14	.55		
	Experimental	Pre test	2.06	.77	10.95	.00
		Post test	3.34	.55		
Language	Control	Pre test	2.30	.99	4.64	.00
		Post test	2.91	.75		
	Experimental	Pre test	2.25	.96	12.55	.00
		Post test	3.92	.62		
Style	Control	Pre test	1.54	.70	1.36	.18
		Post test	1.72	.65		
	Experimental	Pre test	1.71	.76	6.38	.00
		Post test	2.37	.47		

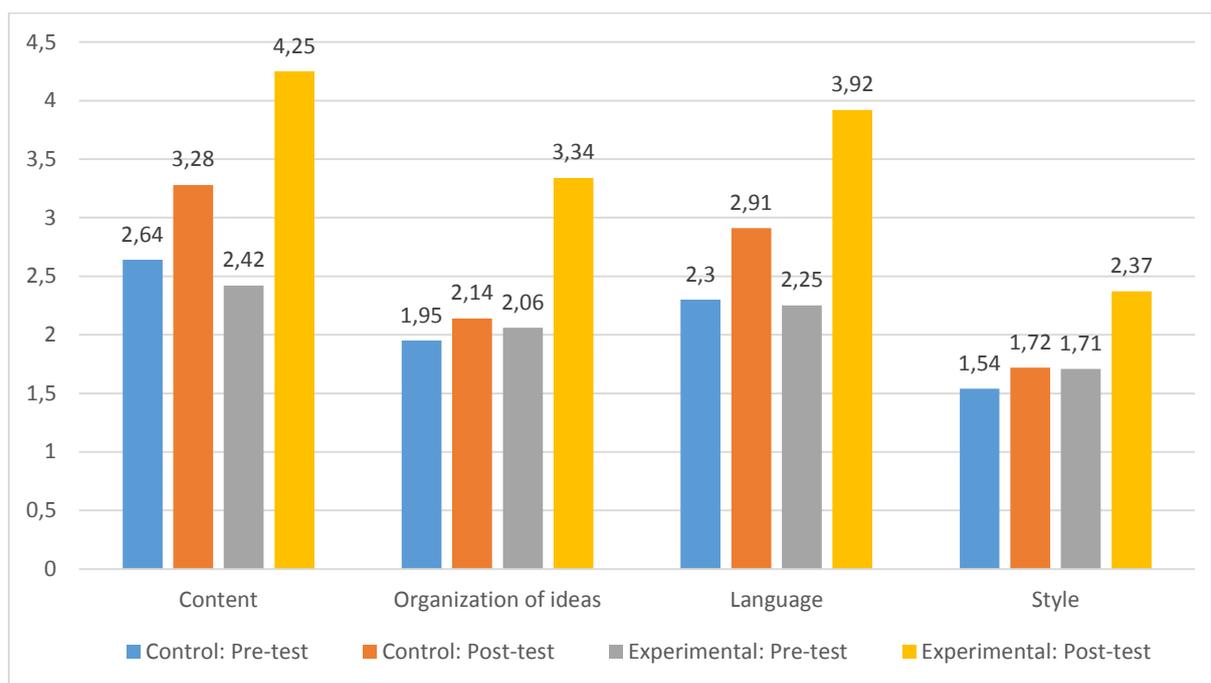


Figure 3. 9 Mean scores for writing sub-skills of the control group and experimental group on pre-test and post-test

According to the results of Table 3.17, the post-test mean scores of the control group and experimental group shows that the experimental group outperformed the control group in all writing sub-skills. The writing aspect that was significantly improved by the experimental group was the aspect of content (pretest: $M=2.42$, $SD=.69$ and posttest: $M=4.25$, $SD=.74$; $T=14.98$, $P=.00$), which was followed by the aspects of language (pretest: $M=2.25$, $SD=.96$ and posttest: $M=3.92$, $SD=.62$; $T=12.55$, $P=.00$), organization of ideas (pretest: $M=2.06$, $SD=.77$ and posttest: $M=3.34$, $SD=.55$; $T=10.95$, $P=.00$), and style (pretest: $M=1.71$, $SD=.76$ and posttest: $M=2.37$, $SD=.47$; $T=6.38$, $P=.00$), respectively.

In brief, these results show clearly that the experimental group made more significant improvements in their writing performance on the post-test than the control group. Therefore, it could be concluded that the integration of digital technologies strongly supported the development of EFL writing skills among participants of the experimental group. This significant improvement could be attributed to the fact that the use of technological tools in EFL writing instruction fostered the experimental group's motivation and interest in writing, developed the quality of their feedback and

critical reflection, enhanced their communication and collaboration, and promoted their overall autonomy and responsibility of learning. This finding is consistent with many study findings which demonstrated the usefulness of digital technologies in developing EFL students' writing skills (e.g., Adas & Bakir, 2013; Ahmed, 2016; Caws, 2006; Chen, 2016; Murray & Hourigan, 2006).

The qualitative findings obtained from the experimental group's responses to the open-ended questions also confirmed the effectiveness of digital technologies in improving EFL writing skills among the participants. Generally, students from the experimental group showed positive attitudes towards the integration of technologies in EFL writing classes, and expressed strong preferences for the use of technology-enhanced EFL writing instruction over the traditional method because online writing tools allowed them to reduce anxiety and boost self-confidence. They explained that as digital natives, they supported the use of digital resources in classrooms to make the learning process more appealing and interesting. In addition, participation in online writing applications such as blogs and wikis, on which students wrote for different purposes and real audiences, enhanced their overall motivation in writing, as reported by three participants:

To tell the truth, I always thought that to be a good writer you have to be friend with pen and paper, but now I changed my view. I think that writing on computers has a lot to do for writing skills, especially when writing for online audience, it could indeed improve my writing performance to a certain extent. I started to prefer this new type of learning to the traditional one because it is more enjoyable for our generation. (Student#01)

I liked web-based writing because it offered an interesting and comfortable space for practicing writing about different topics. As a shy person, I felt more at ease posting my essays online even though I knew they contained mistakes, I did not worry about my mistakes as I did in the traditional teaching way, I would prefer if writing activities were all the time online. (Student#15)

This new environment did not improve my writing skills only, it also helped me to improve my self-confidence while sharing my opinions online with my classmates. In fact, I could learn from their mistakes and from mine as well. We all were enthusiastic about this learning experience. (Student#31)

Students from the experimental group indicated that the use of digital technologies helped them to improve their EFL writing skills. They expressed that the use of blogs and wikis engaged them in collaborative learning activities such as sharing ideas, exchanging feedback and revising peer

writings. Besides, these tools gave them opportunities to promote their independent learning, and helped them to direct and evaluate their learning process without a strong presence of the teacher.

The following comments illustrate their views:

One of the useful aspects of online writing is that we had chances to work with each other. It was helpful to collaborate with peers because sometimes I worked with students who have higher levels than mine, they gave me suggestions or ideas or corrected my mistakes, and I trusted their feedback to a certain extent because of their advanced language skills. (Student#01)

I think it is a useful idea for both students and teachers to implement this learning method, it made them communicate with each other easily, it also let students get more information and knowledge from each other, especially in the collaborative writing on wiki, where students could share their ideas and suggestions of writing. In general, students could be independent and could learn by themselves during the whole period of studies. (Student#11)

I liked the use of digital technology in our writing class because it made learning more autonomous and flexible. We could do collaborative tasks at home, interact and discuss ideas with classmates more easily. For me, this way of teaching is better because it allowed us to practice writing independently and control our learning without being required to attend classes. In addition, we didn't have enough time to do all writing activities in class, so we could take the opportunity of technologies to do these activities. (Student#29)

In their responses to the open-ended questions, students emphasized that the use of blog and wiki tools helped them to improve their critical thinking skills, they explained that they needed to think and read more before writing or providing comments. This is because they knew that their writings and comments would be viewed by online audiences, thus they had to spend some time on thinking deeply and reflecting critically before publishing their posts. In this respect, participant (#29) expressed that “online writing is helpful in developing our thinking abilities. It made me think multiple times before publishing my writing, I had to spend more time in modifying, editing and adding links to my written draft”. Other participants strongly confirmed this perspective:

Absolutely, web-based activities helped me in a way or another to develop my critical thinking, I had to read others' writing several times before giving my opinion, and I had also to think more about my essay before posting it, I had to reconsider the formal structures, organization of ideas, supporting arguments, and other writing aspects. (Student#03)

The online writing applications helped us to develop our thinking skills. We learnt to be more careful in our writing, we learnt also that we had to read thoroughly the essays

for evaluation. We took time to reflect on the posts because we had to think about the writing mistakes and how to provide more accurate suggestions. (Student#35)

Most of the participants revealed that the use of blog and wiki platforms helped them to improve their writing accuracy, indicating that they could improve grammar, vocabulary and more formal aspects of language through online writing practices. In addition, they pointed out that the feedback provided by the teacher or peers helped them to write more logically and coherently. Students explained how online discussions and suggestions enriched their writing, and offered them different ideas on how to support their compositions with arguments, evidence and examples. Several participants commented that,

The feedback provided by my peers was very helpful in improving my writing, because I have learnt from others about my mistakes, I also learnt from their good style of writing which inspired me to work harder to develop my own writing. More precisely, my language accuracy was improved because most of the feedback that I received showed me the grammatical or lexical mistakes that I often did. So I found myself paying more attention to the academic formal style of writing. (Student#05)

I think that the online feedback was extremely beneficial in that we could get different points of views on how to write more coherently, on how to develop better arguments, use evidence or further explanation in order to make our writing appear more logical for the readers. I think that the online feedback we got from the others was very efficient and unforgettable. (Student#11)

It was very useful to participate in blog or wiki applications because we could do there practical writing activities and receive a lot of feedback that improved writing skills, especially the feedback of the teacher which guided us by giving us precise instructions and reminding us of the writing rules we have learnt in classroom. (Student#15)

Additionally, students appreciated the use of web learning resources and presentation materials in EFL writing instruction. For example, they viewed that the use of PowerPoint presentations facilitated the comprehension of the course content and made the writing class more interesting. Students also believed that online writing was easier than writing with a pen and paper, they could easily draft, edit and modify their written texts, and could as well add or remove ideas by simply typing on the keyboard. Two students explained this assumption by writing:

I personally find the use of PowerPoint presentations efficient and interesting, they presented the course lectures in an easy and understandable way. Online writing is also quite convenient and appealing. I find it easier to type down, edit and post my essays, I

could also easily post my comments and answer my classmates' questions, I think this way of writing is more easy and flexible. (Student#17)

Unlike normal writing activities, web-based writing activities make writing much easier, we could easily do proofreading and revise our drafts. In addition, the use of technology in EFL writing instruction allowed us to have a fast access to writing lessons. (Student#31)

However, participants had also some negative conceptions about the use of digital technologies in EFL writing instruction, they pointed out that there were certain constraints which hindered effective learning on virtual environments. First, participants noted that there were some options not realized on wiki or blog platforms, which influenced the quality of writing in one way or another. For example, wiki tool was prone to collaborative editing, therefore the content that some students shared on this tool could be wrong or misleading. One participant (#03) commented that "on wiki, we wrote with classmates who did not have the same level of English language, so some published unreliable content or incorrect language which could influence the linguistic level of others". Another participant illustrated more this view by writing:

I think wiki tool has some options that are not fully developed, it is open for edition at any time, and this is a negative aspect. Due to this, some students who had low levels of writing could publish on wiki writing that contained many mistakes. I feel that using wikis for writing was not appropriate because it included content that was not valid or reliable. (Student#35)

Second, some students felt that collaborative writing was a complicated and time-consuming task to conduct, revealing that they had to spend more time and exert more efforts to accomplish this type of writing:

Actually it costs time and effort to work online with peers, I have to contact the team members, plan together, and schedule suitable time for all of us to organize the work. It is very tiresome to do collaborative works in the traditional way, and more tiresome to do that online, that is why I prefer individual works. (Student#06)

Some students did not want to participate in online collaborative works, so they did not provide any kind of help, and I had to do all the work by my own. This is why I believe that group works were difficult, they took a lot of effort and time. (Student#22)

Third, students also remarked that technology-enhanced EFL writing instruction requires constant access to computers and internet, which was a huge constraint for those who lived in remote areas:

I felt sometimes frustrated because this type of learning requires computers and internet connection, and this was hard for me and for other students. I was not able to be always connected to the web network, it is really frustrating that I could not participate in all online writing activities because of such circumstances. (Student#05)

I think using blogs and wikis in EFL writing is more difficult than the traditional way of writing, it was problematic to be online all the time because there are students as me who did not have adequate access of internet at home for doing the activities. (Student#17)

Personally speaking, I had an adequate access to blog and wiki sites at home for doing the online writing activities, but some other students needed a fast internet connection and laptops, so it was hard for those who did not have these technology materials to do the online activities. (Student#22)

On the whole, participants from the experimental group revealed that they had positive attitudes towards technology-enhanced EFL writing instruction, they expressed that they could gain significant achievements from the online writing project via blog and wiki tools. These achievement gains; as indicated by the participants, could be attributed to the comfortable online learning environment which facilitated interactions between students and teachers, fostered motivation and enhanced collaboration among learners.

Additionally, technology-enhanced EFL writing instruction enabled participants in the experimental group to provide constant feedback and critical reflections on each other's writing. These participants had opportunities to learn autonomously, assess their writing performance, and seek online assistance from peers, which were lacked in the control group's traditional teaching method. Besides, the web-based writing facilitated the writing process more than the conventional writing, allowing students to easily compose drafts, insert ideas, correct mistakes, and revise the whole texts. It is also important to note that students' different learning styles were accommodated during the learning process by using a variety of multimedia tools such as audios, videos, photos and

power-point slides. Not surprisingly, the use of digital technologies helped the experimental group to achieve significant improvements in their writing performance.

Conclusion

As a conclusion, this chapter provided results and analysis to the research issues regarding digital literacy of EFL teachers and students, views and uses of technology-enhanced EFL writing instruction, and the efficiency of digital literacy proficiency and technology integration on improving EFL students' writing skills. The data from survey questionnaires, semi-structured interviews, and scores of writing tests were integrated to answer the research questions and hypotheses.

Generally, the study findings revealed that EFL teachers had a high level of digital literacy, but they were more proficient with basic technologies than with advanced technologies. By contrast, EFL students had a low level of digital literacy; they were proficient with social networking but lacked expertise in utilizing modern technologies. The findings indicated that; despite teachers' positive attitudes towards new technologies, the incorporation of technology into EFL writing instruction was limited. Most of EFL teachers utilized technology for low-level rather than higher-level activities. Several internal and external factors were cited as reasons for the ineffective use of technology in EFL writing instruction.

Moreover, the statistical results confirmed the first research hypothesis, which stated that there is a statistically significant relationship between EFL students' digital literacy proficiency and their academic writing performance, as well as the second research hypothesis, which stated that digital technology integration has a positive impact on the writing performance of EFL students. Discussions and implications of these findings are presented in the next chapter.

CHAPTER FOUR: DISCUSSIONS & IMPLICATIONS

Introduction

This chapter presents a discussion of the major study findings. It provides understanding about the technological skills of EFL teachers and students, and offers insights into teachers' perceptions and practices of digital technologies in EFL writing instruction. Additionally, it discusses the benefits of digital literacy proficiency, and the efficacy of Web 2.0 technologies in improving EFL students' writing skills. In light of the study findings, this chapter suggests implications for the effective use of digital literacies and digital technologies in tertiary EFL writing contexts.

4.1 Discussion of Study Findings

In this section, the discussions aim to address five research issues that are fundamental to this study. Key references from the quantitative and qualitative data were used to demonstrate the discussions of major findings. Each research finding was examined in light of several theoretical frameworks about the use of digital literacy and digital technologies to support EFL writing.

4.1.1 Digital Literacy: EFL Teachers and Students' Technology Skills

The current study attempted to analyze EFL teachers and students' digital literacy proficiency in an effort to provide rich understanding on how they utilized digital skills in academic settings. It presented profound insights on the technological uses of teachers and students in EFL writing contexts. The major findings of this study emphasized that the perspective of digital divide between teachers and students is not as simple as Prensky (2001) has suggested. In this study, all the participants could use a variety of technologies, but the skills they demonstrated were very different.

Generally, EFL teachers had a high level of digital competence, while students had a relatively low level of digital literacy. This suggests that age is not the sole determinant of digital proficiency and technological expertise. These results support Lei (2009)'s assumption that age alone should not be used to classify users of digital technology and evaluate individuals' digital skills. The results also

support earlier research showing that it is an inaccurate notion to always classify teachers as digital immigrants and students as digital natives (Bennett et al., 2008; Guo et al., 2008).

The findings demonstrated that EFL teachers exhibited a high level of digital literacy; however, they were proficient in using basic technologies such as *web browsers, emails, word processing, file transfers, and computers*, and less proficient in using more complex technologies as *online collaborative works, simulations or animation, web page creations, and wiki designs*. This shows that EFL teachers' digital literacy belongs to the foundational level of the DigEuLit project developed by Martin and Grudziecki (2006), indicating that as the complexity level of the digital tool increases, teachers' technological proficiency decreases. These findings correspond with previous study findings, which suggested that teachers had technology skills and expertise in integrating fundamental technologies such as email and word processing, while they lacked skills and expertise in using other sophisticated technologies such as Web 2.0 tools, interactive whiteboards and content-based technologies (Bates 2001; Levin & Arafeh, 2002; Oblinger & Oblinger, 2005; Trucano, 2005).

Despite having a high level of digital literacy, teachers appeared to have modest confidence in their technology abilities, according to the findings of the study. They reported a lack of confidence in their digital skills, voiced fear and anxiety while using new digital tools, and even stated that their students were more "tech-savvy" than they were. In line with earlier studies on barriers to digital technology incorporation (e.g., Chen, 2008; Lee, 2000; Rahimi & Yadollahi, 2011), this study suggests that teachers' lack of confidence in their digital skills impedes the efficient integration of technologies in EFL writing classrooms.

In stark contrast to Presnky's (2001) descriptions, the results of this study revealed that students are not tech-savvy or digital natives. Student participants had a low level of digital competence. In particular, they had low proficiency in using new technologies such as Web 2.0 tools, collaborative online works, web conferencing and website creations, while they had good expertise in using social media. Such competence in using social networks could be attributed to students' frequent uses of these networks in their daily lives. These findings concur with previous researches on students' digital

skills by Kvavik et al., (2004), Bennett et al., (2008), Lei (2009), and Hargittai (2010) who found that students have limited skills in terms of technology knowledge and expertise, and concluded that there are differences in students' digital abilities, opposing Prensky's (2001) claims that young students are all digital natives and competent at the use of digital technologies.

The findings of this study revealed that such an unsatisfactory level of digital literacy among EFL teachers and students could be attributed to the existence of factors similar to those reported in the research literature (Bates 2005; Ertmer 2005; Gray, 2001; Guri-Rosenblit, 2004; Pelgrum, 2001; Williams, 2003; Zemsky & Massy, 2004). The interview participants reported the unavailability of digital resources, the lack of institutional support, teacher's workload and insufficient time to be the key obstacles to digital literacy development. Due to these factors, teacher participants thought that they were not well prepared for the incorporation of digital technologies in EFL writing instruction.

Importantly, the study results demonstrated that the department's technical support was inadequate and that the training programmes offered only to newly recruited teachers were insufficient to improve their digital literacies. According to the interviewees, even those teachers who had the opportunity to engage in the university's training programmes did not gain any beneficial experience that would have resulted in enhancements to their digital skills or modifications to their instructional practices. Due to the insufficiency of these training programmes, participants were compelled to seek alternative means for enhancing their digital competency. The majority of interviewees stated that they relied on their own efforts to develop their technological knowledge; some of them engaged in self-study, others attended specific types of training to improve digital skills, and others sought assistance from colleagues on technical difficulties or issues related to technology-based pedagogical practices.

Participants indicated that, despite all of the obstacles they faced, these impediments could be easily overcome if they had a strong desire to develop expertise in the use of digital technology. They were excited about the usage of digital technology in EFL learning contexts and exhibited a strong willingness to enhance their technological abilities in order to meet the professional requirements of

this age. The majority of interviewees emphasized the need for training that would raise teachers' awareness of the pedagogical and critical uses of new technology in instructional practices. In accordance with what has been stated in the research literature (Becta, 2004; Buckingham, 2006; Guri-Rosenblit, 2004; Hague & Payton, 2010; Lei, 2009; Martin, 2008; Mishra & Koehler, 2006), they believed that pedagogical and critical understanding rather than technical knowledge should be the primary focus of training programmes.

Briefly, the increasing importance of digital literacy demands both teachers and students to reconsider their existing digital skills and develop new ones to meet the needs of this age. Today, the improvement of English language literacy entails the capacity to read, write, and interact via digital technologies (Warschauer & Kern, 2000). Putting it differently, teachers should have an adequate level of digital proficiency to benefit from networked information, and to teach English to students with the goal of training them to utilize digital technologies critically and appropriately for educational purposes.

4.1.2 Understanding EFL Teachers' Attitudes towards Digital Technology Integration

This study investigated teachers' attitudes and perceptions about digital technology integration in EFL writing instruction through the use of quantitative data obtained from a survey questionnaire and qualitative data gathered from semi-structured interviews. The quantitative findings of the survey questionnaire revealed that teachers held positive beliefs about the use of technology in EFL writing classes. Teachers' optimistic views about the potential of digital technologies in EFL writing instruction would positively influence the use of digital tools in classrooms, as suggested by a number of studies which indicated that teachers' positive attitudes towards technologies have a significant impact on their incorporation into classroom settings (Ertmer, 2005; Gray, 2001; Lee, 2000; Rahimi & Yadollahi, 2011).

The teacher participants highly appreciated the potential of technology to provide a wide variety of language resources and learning materials that could be useful in EFL writing instruction. They

also valued the fact that digital technologies facilitate interactions and exchanges between teachers and students, which would help in reinforcing the effective learning of EFL students' writing skills. Teachers held such strong views because they considered the internet as the primary resource for accessing knowledge content and lecture-related materials. The use of internet enabled them to read, use and edit learning materials to prepare for their lessons in an easier and faster way than the use of print-based materials such as texts, books or dictionaries. Additionally, technology was the primary means through which they interacted and communicated with others. These perspectives of teachers regarding the usefulness of technology in enhancing EFL writing instruction align with findings from previous studies, which indicated that technologies provide instructors and learners with a plethora of learning resources and ample opportunities for interactions in EFL writing contexts (Azmi, 2017; Burbules, 2006; Craig, 2012; Dowling, 2003; Elola & Oskoz, 2017; Thorne, 2009; Warschauer & Kern, 2000; Zhang & Barber, 2008).

The participants recognized additional benefits of integrating technology into EFL writing instruction, such as its potential in supporting classroom management, enhancing collaboration and shareability, developing students' writing style, personal expression and creativity, facilitating revision and edition processes, and fostering students' motivation as well as language proficiency skills. These reported advantages of technologies are critical in developing EFL writing skills as indicated in research literature (Adas & Bakir, 2013; Ahmed, 2016; Azmi, 2017; Chen, 2016; Craig, 2012; Crook et al., 2010; Lankshear et al., 2000; Lightbown & Spada, 2006; Peterson, 2012; Thorne, 2005). Due to this perceived effectiveness of technologies, participants strongly believed that digital literacy courses should be incorporated into the curriculum to support the efficient use of technological tools in classrooms.

Qualitative findings further confirmed that the participants exhibited positive perceptions on the use of digital technology in EFL writing instruction. The interviewed teachers highlighted the idea that technology is attractive, convenient, economical, time-saving, and effective in providing authentic language materials. In particular, they enthusiastically emphasized that the internet is the

main resource of information and language learning materials in the digital era, and that technology is appealing to students of this generation as it becomes more relevant in their daily lives. However, some of them had reservations and worries about the negative aspects related to digital technology uses in EFL writing classes. The participants reported that the use of technology is time-consuming and demanding for teachers. In addition, they showed great concerns about the inappropriate use of technologies among students, and thought that academic writing skills could be negatively affected by students' misuse of digital technology and their lack of critical thinking skills.

As presented in chapter three, the interviewees reported that technology integration in EFL writing instruction consumes time. The use of technology would require them to spend long hours for preparing learning materials and designing web-based activities, while they already had other pedagogical, academic and administrative responsibilities to undertake. Such views reflected teachers' preferences for the traditional teaching method which they found more comfortable and less demanding. These results are consistent with several study findings showing that instructors have different expectations to fulfill in university contexts; therefore, they might have reservations about technology integration in classrooms, and may prefer to deliver their lectures using the conventional teaching method (Gray, 2001; Guri-Rosenblit, 2004; Rahimi & Yadollahi, 2011; Williams, 2003; Wilson et al., 2004).

In a similar vein, the interviewees reported their worries about students' misuse of digital technology, expressing that the use of technologies may lead to certain problems among students such as distraction, laziness and plagiarism. They noted that students might use digital tools for purposes other than learning; for instance, they may spend long hours wasting their time on online games, social networks or internet surfing instead of studying. Due to laziness, some of them might fall easily into the trap of plagiarism which diminishes the quality of their written works. Teachers were also concerned about the inappropriate use of digital technologies which would result in the deficiency of students' writing skills, indicating that academic writing competence could be negatively influenced by students' informal language practices in online spaces. This finding about teachers' negative

conceptions on web-based writing is supported by other studies, which showed teachers' concerns regarding the detrimental impact of digital media on academic writing skills (Murray & Hourigan, 2006; Warschauer & Kern, 2000).

The negative writing practices of some students on online platforms imply that they are not digitally savvy enough to use technology effectively for educational objectives. Therefore, the interview participants suggested that EFL students should put sufficient efforts to enhance their digital skills. They believed that students should use critical thinking skills, make adequate decisions and reflect on their learning in order to get the best out of technology use with regard to their EFL writing competence. They thought that students' digital literacy proficiency would allow them to maximize the benefits of technology use for the development of their writing skills. This echoes the findings of other researches, emphasizing the importance of digital literacy as an essential skill for participation in all educational contexts (Barell, 2010; Lent, 2012; Trilling & Fadel, 2009; Warschauer & Matuchniak, 2010).

Overall, the interview participants recognized the increasing importance of digital technology integration in EFL writing instruction, especially considering that it becomes highly used by students in and outside of classroom settings. Nevertheless, they strongly believed that technology should be incorporated in EFL writing classes only when necessary. This implies that the use of technology is meaningful only if it would enhance the instructional practices, and fit with the targeted learning aims. Therefore, technology should be used for adding some values to the teaching process; for instance; for achieving curriculum objectives, motivating students, or developing learning skills. As a matter of fact, the interviewees stated that technology is effective but not essential to language learning, and expressed that digital technologies should not be used for the sake of digital technologies, but rather when they are compatible with the instructional practices and learning objectives. These beliefs about the appropriate use of technology to achieve learning goals correspond with other previous studies showing that instructors will adopt new digital tools efficiently if they

value their actual usefulness in classroom settings (Bates, 2001; Cennamo et al., 2010; Laurillard, 2013).

4.1.3 Technology Usage in EFL Writing Instruction

In this study, the current situation of technology integration in EFL writing instruction was investigated through the use of quantitative and qualitative methods. The results obtained from both survey questionnaire and semi-structured interviews revealed that the integration level of digital technologies in EFL writing classrooms is low, indicating that the advancement of digital tools has not yet caused any profound changes in the instructional practices of EFL teachers. Technologized traditional classroom could be the best description of teachers' technology uses in EFL writing classes, who used mostly basic technologies that did not lead to pedagogical innovations and changes in their teaching practices. Although teachers exhibited positive attitudes towards the incorporation of new technologies in EFL writing instruction, they failed to reach a compromise between their attitudes and usage of technology resources in classrooms, as their practices did not correspond with their favorable opinions on digital technologies.

Quantitative findings showed that teachers tended to use only the most fundamental technologies in EFL writing instruction. For example, they used the internet as the main resource for accessing and downloading lecture materials related to English writing such as lessons, books, ideas, exercises and activities, and instructed students to search the internet for relevant information prior to conducting writing assignments. They used also word processor and PowerPoint applications for preparing and presenting lessons, as well as emails and social media tools for communicating and interacting with students. However, it was found that the lowest means of use were given for the integration of high-level technology tools such as collaborative writing websites, wikis or blogs, online forums, online writing exchanges, LCD projectors and web-based assessment tools.

These results indicate that digital technology tools were used primarily for low-level tasks as getting, preparing and creating learning materials, while the use of technology for high-level tasks

which require students' critical thinking, analytical abilities and collaborative skills was rarely used by teachers in EFL writing instruction. Despite their great affordances, digital technologies were not implemented for promoting active, autonomous and collaborative learning in EFL writing classroom. This means that technological resources were incorporated mainly for facilitating the teaching process rather than developing exploratory learning. This finding about teachers' technology uses in EFL writing instruction is consistent with earlier study findings which concluded that teachers utilize technological applications in classrooms merely to facilitate lecture delivering and enhance pedagogical practices (Bates, 2001; Collis & van der Wende, 2002; Dockstader, 1999; Hanna, 2003).

Moreover, qualitative findings gained from semi-structured interviews also demonstrated that EFL teachers used basic technologies for simple activities such as seeking information, planning lessons and communicating with students. The interview participants reported to use less complicated technological equipment as computers, projectors and PowerPoint application in EFL writing instruction, with PowerPoint presentations being the most commonly used tool in classrooms. Very similar to what was revealed in quantitative results, the use of more advanced technologies such as blogs, wikis and virtual assessment tools was unfamiliar to EFL teachers. In line with previous study findings (Bates 2001; Collis & van der Wende, 2002; Trucano, 2005), these results suggest that teachers used technology for low-level purposes such as finding instructional resources, exposing students to authentic input, displaying audiovisual materials and interacting with students. With regard to interactive tools, the use of Emails and Facebook were very popular among the interviewed teachers who utilized these applications to facilitate the sharing of students' written assignments, offer feedback and communicate with students.

Teachers' use of technologies for low-level purposes could be attributed to the fact that they used frequently digital tools for ordinary tasks such as web searching, emailing, and social networking; consequently, their use of technology in EFL writing instruction was limited to basic tools. It can be concluded that teachers' digital practices in EFL writing classrooms reflected their level of digital literacy proficiency. An apparent relationship seemed to exist between teachers' level of digital

literacy competence and their current uses of digital technologies, their incorporation of digital technologies represented the foundational level of digital literacy competence, as indicated by Martin and Grudziecki (2006).

Notably, the investigation of teachers' technology uses in EFL writing instruction showed that they transferred their practices from face-to-face teaching environment to technology-mediated tools. Teacher participants reported that they preferred the integration of technology for structural purposes, as exposing students to authentic input, viewing writing models and practicing online grammar exercises, which deemed to be the most applicable web-based activities for improving English writing practice. Similar to what they did in face-to-face classroom settings, they regarded technology as a tool to build structural language skills that are essential for the development of writing performance. This result ties well with previous studies which showed that teachers tended usually to transfer instructional activities used in face-to-face context to online learning environments without exploiting the limitless opportunities provided by technologies for the design of productive and creative tasks. (Collis & van der Wende, 2002; Dockstader, 1999).

Although participants in this study expressed positive perceptions on the incorporation of digital technologies in EFL writing instruction, their use of technology tools remained limited in classrooms. This could be attributed to their concerns and fears over the potential negative effects of digital technologies on EFL writing skills. In addition to this, their digital literacy proficiency, and accessibility to technological resources and technical support also influenced their adoption of digital tools in EFL writing instruction. Clearly, this study suggests that there are three main factors impeding the effective use of technology tools in writing classroom, namely, teachers' personal concerns about technology use in EFL writing classes, teachers' competence to use digital tools in the instructional process, and the availability of digital technologies and technical support for EFL teachers in the department.

One of the important reasons explaining the low level of technology integration in EFL writing instruction relates to the fact that the participants considered the use of technology in classrooms as

a demanding and time-consuming endeavor. While all the participants valued the merits of new technologies as tools for finding authentic teaching materials and facilitating lesson preparation in EFL writing instruction, some interview participants reported that the use of digital technology was more demanding than the use of traditional text-based materials as textbooks, handouts and printed learning materials, which were more convenient for use. They expressed that they preferred the use of the traditional teaching method, because digital technology integration was a time-consuming and challenging task for them to undertake. This was because teachers had to spend long time in searching, selecting and preparing the learning materials attained from technology resources. This finding supports those results reported in previous researches, which revealed that teachers often resist the use of digital technology in their instruction as it is time-consuming (Becta, 2004; El Aggoune & Ghaouar, 2019; Ertmer, 2005; Guri- Rosenblit, 2004; Pelgrum, 2001; Zemsky & Massy, 2004).

In addition, teachers' views on the inappropriateness of technology use in EFL writing course seem to be one of the most influential factors for the limited use of technology tools in EFL writing classes. When they reported their uses of web-based activities in EFL writing instruction, some interview participants referred to important issues including preferable traditional teaching methods, the nature of learning subject, course objectives and uselessness of technology in EFL writing module. These teachers believed that technology use is related to the nature of the instructional course and the context in which it is implemented, and thought that the use of technology tools in writing classes is less efficient for the development of students' writing skills.

They considered that digital technology was only suitable for particular pedagogical subjects and language skills, and were willing to implement technology-enhanced instruction only if it would fit their instructional courses and targeted objectives. What can be induced from this finding is that technology incorporation in EFL writing instruction was largely based on the personal perceptions and pedagogical concerns of the teacher participants. This finding is in accordance with those studies by Gray (2001) and Ertmer (2005), who stated that the critical factors affecting technology integration

are not external ones such as the unavailability of equipment, but teachers' perceptions and willingness to use innovative tools in classrooms.

Equally important, the interview participants expressed their concerns about students' misuse of digital technology which may lead to certain problems such as distractions, laziness, academic writing deficiencies, lack of responsibility as well as plagiarism. They believed that technology could deteriorate students' writing competence and distract them from effective learning, arguing that students might be exposed to inappropriate linguistic content which they could transfer to their writing skills, and thus diminish their English writing proficiency. In this respect, students' negative online practices and inappropriate uses of technology tools contributed to teachers' low usage of digital technologies in EFL writing instruction. This result confirms those results from previous studies which showed teachers' fears to use technology resources, while simultaneously pursuing the development of academic writing skills and minimizing the distractions of online learning (Murray & Hourigan, 2006; Warschauer & Kern, 2000).

Teachers' digital literacy was another key factor that may have contributed to the low integration level of digital technologies in EFL writing instruction. The study results revealed that the teacher participants had a high level of digital literacy competence; however, they were proficient in using basic technologies as web searching, computers, emails and word processing applications, and less proficient in using more advanced technologies as online collaborative works, simulations, animations, web page creations and wikis. Teachers' use of technology for low-level activities such as preparing lessons, projecting information and presenting audiovisual materials in classrooms also indicated their limited digital abilities. As discussed in the chapter of literature review, teachers' digital literacy competence is a significant contributor to the effective use of digital technologies in classrooms (Becta, 2004; Chen, 2008; Ertmer, 1999; Hunter, 2001; Pelgrum, 2001; Trucano, 2005). Therefore, the limited use of technology tools in EFL writing instruction could be attributed to teachers' low competence in using advanced digital resources.

The study findings showed that teachers believed that their students were more tech-savvy and proficient in using digital tools than they were, and claimed that their students could use advanced digital technologies more successfully and efficiently than they could. This high regard for students' digital literacy competency reduced teachers' confidence in using technology facilities in classrooms. Consequently, it can be inferred that teachers' low confidence in their digital skills may have weakened the situation of technology integration in the department. This result is consistent with previous research findings which demonstrated that teachers' high confidence in their digital competence would increase chances of technology use among them, while their low confidence would decrease intentions to use technology resources in pedagogical contexts (Chen, 2008; Lee, 2000; Rahimi & Yadollahi, 2011).

Furthermore, the lack of technological resources and technical support also impeded the effective incorporation of digital technologies in EFL writing instruction. Teachers reported that they could not integrate new technologies in writing classrooms because they had insufficient equipment, and were not adequately trained to use advanced digital tools in their teaching process. Echoing other study findings (Becta, 2004; Pedro, 2007; Williams, 2003), this study suggests that teacher participants recognized the merits of technology in enhancing EFL writing performance, but could not implement it in their instruction because of the lack of digital resources and technical support.

Due to the lack of formal training programmes, the interview participants expressed that they relied on their own efforts or sought assistance from colleagues to address problems and complicated issues related to the use of technology in EFL writing instruction. Despite the diverse support they provided for one another, teachers still felt the need for professional training on the use of digital technology so that they could use more innovative resources when teaching EFL writing skills. It is evident that the insufficient technology materials and technical support influenced EFL teachers' use of technologies within the department. This result is in line with other study findings indicating that the unavailability of technology facilities and technical support would rule out the use of digital technology in instructional settings (Ertmer, 2005; Hunter, 2001).

4.1.4 EFL Students' Digital Literacy and Writing Achievements

The study findings showed that there is a strong significant relationship between students' digital literacy proficiency and academic writing performance test ($r = .95$, $p = .000$). The high value of spearman's correlation coefficient which was statistically significant at the level ($\alpha = 0.01$) suggests that there is sufficient evidence to support a causative relationship between students' technological skills and their writing performance, indicating that an increase in digital skills correlates with an improvement in writing quality. The strong relationship between digital literacy and writing skills was also apparent in students' responses to the open-ended questions of the survey questionnaire. Generally, students revealed positive experiences on how digital literacy skills facilitated the development of writing performance in digital spaces. These findings are consistent with previous research results demonstrating a positive correlation between digital proficiency and writing development (Caws, 2006; Elola & Oskoz, 2017; Goldberg et al., 2003; Hafner, 2015; Mudra, 2020; Warschauer & Ware, 2006).

In their written reflections about the impact of digital literacy on writing skills, participants reported that digital competence had helped them to increase writing achievement gains throughout time. They stated that digital literacy is conducive to strengthening online academic writing practices that resemble the existing traditional ones. In addition, they argued that digital competence allowed them to easily access, evaluate and communicate written content in web-based learning environment. Thus, as suggested by Hull and Schultz (2001), being digitally literate enabled them to access a growing set of digital information, and broaden their potential resources of knowledge, instead of being restricted to traditional-based materials of learning.

Furthermore, students noted that having digital skills to critically evaluate web information by assessing its validity, quality, relevance and usefulness helped them to reflect on linguistic choices, select reliable resources, and make adequate learning decisions. These digital skills came to play a vital role in developing sophisticated writing competencies among EFL learners. These findings are

in line with the research literature, which indicates that students' ability to use and reflect on internet-based knowledge positively affects their writing development (Caws, 2006; Elola & Oskoz, 2017).

Moreover, participants identified the ability to easily communicate and interact with a broad audience as one of the merits of digital literacy skills. They stated that they could access a complex digital space for writing, which provided them with a large set of multimedia features to use. For instance, they reported to use different technological tools for composing and sharing texts as e-mails, blogs, and social networks. These applications enabled them to contact online audience for discussing ideas, exchanging feedback, and offering assistance on complex linguistic matters. Students were able to practice situated writing through these tools by modifying registers, styles, and discourse identities according to the target audience. This finding supports the assumptions of Bloch (2007) and Hafner (2014) that digital literacy has the potential to improve English academic skills and discourse identities.

Students' ideas on how online interactions facilitate writing development draw on Vygotsky's (1978) concept of ZPD, which posits that learners can reach their potential development levels through interactions and collaboration with more capable people. Students believed that digital literacy helped them to enhance their writing skills by allowing them to access online content and practice situated writing. As indicated by Bloch (2007), online interactions in which students practice different types of writing, relevant discourses, and critical thinking would contribute to the enhancement of their writing skills. The finding that students had beneficial learning experiences when writing online and interacting with digital audiences who were more proficient in writing is consistent with prior research findings, which emphasized that online interactions correlate positively with writing development and learning achievements (Caws, 2006; Chen, 2016; Elola & Oskoz, 2017; Hafner, 2015; Mudra, 2020; Murray & Hourigan, 2006; Rosatelli & Self, 2004).

Equally important, the findings of the open-ended questionnaire revealed that digitally literate students often use formal and more sophisticated forms of writing, because they have critical thinking abilities and cognitive skills which enable them to work hard while receiving or producing online

language content within digital spaces. However, those who lack digital skills may experience deterioration in academic writing skills and face particular learning challenges. Students with low digital literacy abilities may not be able to critically think, evaluate and synthesize online information, and they may not be able also to recognize grammatical errors and manipulate the standard rules of English written language. These students would often break down the conventions of academic writing by using informal styles, contractions, slang words, and other forms of text messaging language. This is because they lack the critical digital skills necessary to distinguish thoroughly between formal and informal types of online writing and to comprehend the contexts in which the appropriate writing style is used. Additionally, their lack of critical thinking abilities and awareness about intellectual property rights makes them more susceptible to plagiarism.

These findings on the importance of digital literacy for successful writing aligns with prior research findings which highlighted that students' critical digital literacy skills correlate favorably with their writing development (Caws, 2006; Elola & Oskoz, 2017). Evidently, it can be concluded that digital literacy comprises not merely technical skills, but also analytical and critical capabilities to use digital technology adequately for learning purposes. Therefore, students are advised to utilize critical reflections and analytical abilities to effectively enhance their writing skills in online environments.

4.1.5 Efficiency of Web 2.0 Technologies in Enhancing EFL Writing Performance

This study aimed to examine the effects of digital technology integration on the development of EFL students' writing skills. In particular, special effort was made to use the asynchronous online writing tools of blogs and wikis in order to investigate whether or not their implementation could lead to any improvement in the writing performance of EFL students. With such a purpose, the study participants were divided into two groups: a control group and an experimental group who were both taught the course of academic writing by the same instructor; however, they had different instructional methods. The experimental group received technology-enhanced writing instruction which was

largely based on the use of blog and wiki writing tools, while the control group was taught academic writing course using the traditional method of teaching.

Before starting the treatment, a pre-writing test was administered to the two groups, and the results showed that there were no significant differences in the writing performance of the control group and the experimental group. Yet, the results of the post-writing test indicated that there were statistically significant differences in the writing performance of the two groups, in favor of the experimental group. This indicates that the incorporation of the online writing tools led to a significant progress in the experimental group's writing abilities. These findings are in line with several research studies highlighting the usefulness of technologies in enhancing EFL writing skills (e.g., Adas & Bakir, 2013; Ahmed, 2016; Caws, 2006; Chen, 2016; Chuo, 2007; Cunningham, 2000; Murray & Hourigan, 2006). The results of this study are also in line with earlier studies, which showed that using wiki and blog technologies can significantly enhance EFL writing performance (e.g., Alshumaimeri, 2011; Arnold et al., 2012; Franco, 2008; Kuteeva, 2011; Lundin, 2008; Miyazoe & Anderson, 2010; Özdemir & Aydın, 2015; Pinkman, 2005; Wichadee, 2010). More specifically, the experimental group achieved higher mean scores on the post-writing test in the sub-skills of content, language, organization of ideas, and style than the control group.

These results indicate that there is a close correlation between the experimental group's writing improvement and the treatment, and suggest that the experimental group could improve their autonomous learning and extend their knowledge on writing skills through the use of online writing tools. These findings correspond with previous research findings, which highlighted that Web 2.0 tools have many benefits for the improvement of lexical and syntactical accuracy, organization of ideas and writing creativity (e.g., Alshumaimeri, 2011; Cunningham, 2000; Fellner & Apple, 2006; Godwin-Jones, 2003; Lee, 2010; Peterson, 2012; Sun & Chang, 2012; Wichadee, 2010).

The significant differences in the writing performance between the experimental group and the control group can be attributed to the change in the instructional method. This implies that technology-enhanced instruction was more effective than the conventional teaching method in

improving students' writing abilities. The two groups had the same learning objectives, the same course content, and the same instructor. The only difference between them was the method of instruction, thus technology-enhanced writing instruction proved to be more useful in promoting EFL writing skills than the traditional writing instruction.

As a matter of fact, students in the experimental group had more opportunities for practicing writing on digital tools, they could receive more feedback and benefit from extra time of learning outside of classroom settings. However, students in the control group had limited opportunities for writing practices due to the short class time. In addition, they had few chances for developing their independent learning and extending their knowledge on writing skills, because they had been constrained to the teacher's direct instruction and paper-based materials. As evidenced by the research literature, the sole reliance on paper-based materials was insufficient to accommodate all students' learning needs and preferences (Azmi, 2017; Borden, 2011; Thorne & Payne, 2005). Furthermore, the traditional writing instruction did not provide adequate opportunities for students to engage in situated writing contexts, which are essential for the development of their writing competences (Thorne, 2009).

Notably, technology-enhanced writing instruction helped to address the limitations of the traditional teaching method in that the use of online writing tools as blogs and wikis supported the development of the experimental group's knowledge, abilities and writing practices. The experimental group could benefit from a set of web-based learning resources that suited their different interests and needs, and could as well engage into a variety of situated writing contexts outside of classroom settings. According to the research literature, the use of internet-based learning materials and exposure to situated writing contexts offer strong potential for supporting the development of students' writing skills (Elola & Oskoz, 2017; Pavlenko & Lantolf, 2000). Additionally, the virtual writing platforms offered a comfortable learning environment for demotivated or shy students to participate and construct knowledge meaningfully (McLaughlin, 1990; Peterson, 2012). Therefore,

the effects of technology-enhanced writing instruction in promoting EFL writing proficiency were greater than that of the traditional teaching method.

As indicated in their written responses to the open-ended questions, students' attitudes towards the integration of digital technologies in EFL writing instruction were rather positive. Participants in the experimental group expressed that the use of blog and wiki could boost their interest and motivation in the learning process, foster interactions and discussions, and promote their collaborative learning. As claimed by Miyazoe and Anderson (2010), these promising aspects provided by digital tools are essential for the development of writing competences. Participants also valued the efficiency of Web 2.0 tools in providing a less threatening environment which reduced anxiety, increased self-confidence, and made writing practices more comfortable. These results; which showed students' enjoyment with technology incorporation in EFL writing instruction, are consistent with previous studies demonstrating students' positive attitudes towards the use of Web 2.0 tools in EFL writing classrooms (e.g., Campbell, 2004; Chao & Lo, 2011; Lin & Yang, 2011; Wichadee, 2010).

According to students' written reflections, the use of blog and wiki platforms helped to improve their writing quantity and quality. Students indicated that they had opportunities to learn more complex grammatical forms, vocabulary and sophisticated expressions of writing through these tools. In addition, they stated that writing on this online environment indirectly boosted their critical thinking abilities, and that receiving feedback from their teacher or peers made their writing more logical and coherent. Research has shown that meaningful feedback provided through online tools increases students' motivation in learning and improves their writing abilities (e.g., Barrios, 2003; Chao & Huang, 2007; Chen, 2016; Huffaker, 2005; Johnson, 2004; Pavlenko & Lantolf, 2000; Sun, 2010).

Moreover, students believed that online writing tools facilitated the writing process in the sense that they could draft and revise their texts on such tools more easily and flexibly than with a pen and paper. This is in line with research studies showing that students get more motivated when using computers and mobile devices than when using the traditional method of pen and paper (Adas &

Bakir, 2013; Ahmed, 2016; Chuo, 2007; Warschauer, 1996). Furthermore, most of the students appreciated the use of PowerPoint presentations and other technological materials in writing classroom, which promoted their understanding and overall comprehension of the course content.

Despite the fact that the majority of participants held positive attitudes towards the integration of digital technology in EFL writing classrooms, a few participants held certain negative conceptions regarding technology-enhanced writing instruction. Specifically, they found online collaborative writing activities to be difficult and time-consuming. Several students reported to prefer individual writing activities because they could modify compositions according to their own personal preferences and work at their own pace. They could also be more dependent on their own abilities and less reliant on the assistance of others. Students' preferences of online individual writing over collaborative writing activities could be explained by the fact that students who were used to individual writing struggled with cooperative works outside of classroom settings, as they had to arrange meeting dates, resolve technology-related issues on their own, and rely on the assistance of others for the accomplishment of the work.

Another significant remark noted by the participants was that the option of collaborative editing on wiki platform might contain less meaningful and constructive input, which could diminish their writing quality. This finding is in line with the result of Wu (2005)'s study, which revealed that students' negative attitudes towards digital technology may be attributable to technical issues and difficulties in using online writing tools. Additionally, participants pointed out to the fact that technology-enhanced EFL writing instruction requires constant access to computers and internet, which was a challenging obstacle for students, especially those who lived in remote areas. These findings are consistent with several study findings which demonstrated that the integration for technologies could present major challenges for both learners and instructors in classrooms, and thus it is essential to provide technological equipment and develop the critical use of it among learners in order to ensure an effective learning environment in EFL writing contexts (Ertmer, 2005; Hunter, 2001; Warschauer, 2008; Wenglinsky, 2005).

Overall, the results of this study indicated that the experimental group's writing performance was improved due to the efficiency of technology-enhanced instruction in developing students' writing skills. These findings align with earlier research indicating that learning through Web 2.0 tools such as wikis and blogs have positive effects on writing development, motivation, authenticity, learning style, attitudes towards writing, collaboration and interaction (e.g., Chao & Huang, 2007; Ducate & Lomicka, 2008; Kessler & Bikowski, 2010; Kovacic et al., 2007; Lundin, 2008; McPherson, 2006; Miyazoe & Anderson, 2010; Özdemir & Aydın, 2015; Parker & Chao, 2007; Richardson, 2010; Sun, 2010; Sun & Chang, 2012; Turgut, 2009; Ward, 2004; Xiao & Lucking, 2008; Zhang, 2009). Several justifications can be given to explain the significant writing improvements made by the experimental group in the following paragraphs.

First, technology-enhanced writing instruction increased students' motivation in the learning process, which ultimately led to improvements in their writing abilities. Students appreciated the interactive features of blog and wiki platforms, because they boosted their enthusiasm and inspired them to write better compositions. In this respect, Kessler (2009) asserted that online environments motivate learners and enhance their positive attitudes, hence contributing to their overall writing achievements. Numerous research findings highlighted the efficiency of technology tools in fostering students' motivation and developing writing skills (e.g., Chen, 2016; Craig, 2012; Godwin-Jones, 2008; Murray & Hourigan, 2006; Peterson, 2012; Sun, 2010; Warschauer & Grimes, 2007).

Second, another contribution of technology-enhanced writing instruction was the involvement of the reading-writing method. Students in the experimental group were required to read extensively before writing about any topic, and they were strongly encouraged to research, read and examine additional materials available on learning websites. As a result, their writing performance improved because they had acquired enough background information about the subject. This finding is consistent with the research literature indicating that online reading and exposure to multimodal learning input could significantly boost students' academic writing achievements (Elola & Oskoz, 2017; Ward, 2004; Zhang & Barber, 2008).

Third, technology-enhanced writing instruction placed students in a low-anxiety environment of learning. Students expressed that they felt more comfortable to practice web-based writing and engage in online discussions, and revealed that they were enthusiastic to take part in this novel experience throughout the entire study period. Due to the low anxiety settings of Web 2.0 tools, they could write and interact with a greater ease than with the traditional writing method. Therefore, this innovative method of teaching is believed to have a strong potential in developing the experimental group's writing performance. These results are in accordance with earlier research, which identified technology-based programs as a revolutionary method of teaching that lowers anxiety and promotes writing development (e.g., Adas & Bakir, 2013; Ahmed, 2016; Chuo, 2007; Ducate & Lamicka, 2008; Özdemir & Aydın, 2015; Richardson, 2010).

Fourth, technology-enhanced writing instruction offered a collaborative learning context which encouraged the experimental group to actively participate in the writing process. Through collaborative writing projects on wiki tool, students had opportunities to practice cooperative writing, exchange ideas, share group work and take part into peer reviews. Engagement in wiki-based writing enabled students to gain knowledge and insights from each other, which in turn led to improvements in their writing performance. These collaborative web-based activities are assumed to facilitate the development of students' ZPD (Lightbown & Spada, 2006; Miyazoe & Anderson, 2010; Warschauer, 2005). Numerous study findings reported that students who use wiki application to practice situated writing and collaborate with peers could effortlessly improve their writing abilities (e.g., Craig, 2012; Kessler, 2009; Lundin, 2008; Miyazoe & Anderson, 2010; Xiao & Lucking, 2008; Warschauer & Kern, 2000).

Finally, technology-enhanced writing instruction improved students' independent learning. According to the participants' written reflections, this innovative method of teaching encouraged them to use technological resources for autonomous learning in order to enhance their writing skills. Due to the active learning opportunities provided by blog and wiki tools, students could have control over their written products, and became more responsible for their learning process. These online

tools enabled them to develop their writing skills without a significant involvement of the teacher. They were able to develop and organize ideas on their own, work collaboratively with others, and learn linguistic forms independently. As a result, their linguistic abilities and writing performance improved.

According to Franco (2008), the encouragement of autonomous learning through the use of online tools outside of classroom settings is crucial for the overall writing skill gains. It makes students feel more comfortable when expressing thoughts, exchanging feedback and discussing new ideas. Several earlier studies asserted that the use of technology in writing instruction promotes students' independent learning by allowing them to explore, write, revise, and review their work at their own convenient pace (e.g., Dowling, 2003; Fairman, 2004; Godwin-Jones, 2003; Horváth, 2009).

4.2 Implications of the Study

In light of the study findings, it is evident that developing EFL teachers and students' digital skills, fostering positive attitudes toward technology integration, providing technology resources and technical support, and recognizing the potential of digital literacies and digital technologies in enhancing EFL writing skills are essential for the development of EFL writing learning. As a result, the following pedagogical implications which are feasible in tertiary EFL writing contexts are proposed.

4.2.1 Development of EFL Teachers and Students' Digital Literacies

In this information age, instructional practice requires the incorporation of digital technologies in all learning settings. Consequently, digital competence becomes a significant area of focus in education. To utilize digital technologies effectively in pedagogical contexts, and especially in EFL writing instruction, EFL teachers and students need to continually develop their technological expertise. This study suggests the development of efficient training programmes that support innovative pedagogy and foster digital literacy skills among EFL teachers and learners.

Concerning the development of EFL teachers' digital literacy, the current study indicates that the institution should provide teachers with adequate training programmes on the use of digital technologies in order to meet the professional standards. The emphasis of these training programmes should be on developing EFL teachers' pedagogical, critical and technological knowledge to prepare them for these evolving digital spaces of learning. EFL teachers should be encouraged to participate in professional development workshops and courses that explain how to utilize technology tools in the learning process. They should be provided with examples on how educational technologies are utilized effectively in classrooms.

In addition, they should be made aware of the potential obstacles associated with technology adoption such as technical issues, access, and the difficulty of integrating technology into specific instructional curricula. Most importantly, the administrative staff should provide teachers with immediate technical assistance whenever it is required in classrooms. Evidently, the success of digital technology integration in EFL writing instruction can be realized if EFL teachers' technological and pedagogical knowledge is developed.

Regarding the development of EFL students' digital literacy, the study findings revealed that there were many differences among students' digital literacy abilities, knowledge and experiences. As a matter of fact, most of them reported to be competent at using social networking sites and good users of simple technologies such as computers, web browsers, emails and word processing, but they were not necessarily competent at using digital technologies for learning purposes.

Therefore, the results of this study imply that students require sufficient training on how to use technology for educational purposes. EFL students should be provided with a variety of training opportunities, including courses, seminars, and workshops, to develop their digital competence. Quite clearly, they need a continual instruction on the appropriate use of basic and advanced digital tools so they can take advantage of new technologies in their learning process. As suggested by Warschauer (2008), what students needed most is knowledge on how to effectively retrieve web information, critically use technological tools, and meaningfully engage in online communicates. Therefore, for

the development of EFL students' digital skills, training programmes should promote their uses of technology and put strong focus on improving their abilities to think critically, access web content quickly, evaluate online information appropriately, and use it effectively for learning.

4.2.2 Enhancement of Attitudes towards Digital Technology Integration

This study highlights the vital need of including teachers' perspectives and attitudes towards technology integration as a as a crucial element of any technology integration strategy. The analysis of what digital resources teachers employ or how they employ them in classrooms is not as important as the evaluation of their underlying motives. Due to the fact that teachers' perspectives determine whether or not they employ and accept a specific technology, it is essential to improve EFL teachers' attitudes regarding technology integration in EFL writing instruction. Therefore, policymakers and administrative personnel are advised to analyze the assumptions and viewpoints of EFL instructors on digital technology integration in EFL writing instruction.

This study has the potential to provide insights on how EFL instructors feel about the usage of technology in EFL writing classrooms and the difficulties they encounter while utilizing it. For instance, the findings revealed that the effects of pedagogical and contextual variables on the attitudes of EFL teachers towards technology incorporation cannot be disregarded. A teacher's decision to adopt technology in EFL writing instruction was influenced by a variety of factors such as lesson preparation, learning objectives, expectations of teacher and student roles, and concerns about detrimental effects of technology on EFL writing skills. Therefore, the university administration should understand the influence of contextual factors on shaping EFL teachers' views towards technology integration.

Attempts to change the opinions of teachers should not be the major emphasis of the administrative staff. Instead, the primary focus should be on assisting teachers to accept the innovative changes in pedagogy. It is important to investigate the reasons why certain teachers are resistant to using technology in EFL writing classrooms. Understanding teachers' educational goals,

their perspectives about technologies, and the obstacles they face while adopting them is the first step to integrate digital technologies successfully in EFL writing instruction.

4.2.3 Provision of Technology Resources and Technical Support

According to the findings of this study, digital resources like wikis, blogs, and LCD projectors were rarely used in EFL writing instruction. A number of factors contributed to the low integration of digital tools in EFL writing classrooms, including the unavailability of technology tools, the lack of technical support, participants' unfamiliarity with novel tools and teachers' lack of time to learn how to apply and utilize these tools in their instruction. Therefore, this study suggests for university administrators and policy makers to provide EFL teachers with more technology resources and technical assistance in order to better integrate digital technologies in EFL writing classes.

In higher education, strategic priorities should be established to improve the quality of instruction by employing technology tools to enhance the learning process. The government should raise funding for universities so they can improve internet and network services, educate teachers and students, and build technology infrastructures and facilities. The effectiveness of digital technology integration in EFL writing instruction depends largely on the availability of a high-quality of technology infrastructure, such as laptops, internet connection, and uninterrupted electricity supply in classrooms.

4.2.4 Recognition of Digital Literacy's Potential in EFL Writing Instruction

The study findings indicate that writing nowadays is different from what it was yesterday. The advancement of new technologies has facilitated the process of writing and contributed to the enhancement of EFL students' writing skills. Hence, EFL teachers and university administrators should take the responsibility to develop EFL students' digital literacies to ensure that they would benefit from effective writing practices on technological tools. For example, when technology is used in classrooms, EFL teachers should encourage students to think about online content, reflect on linguistic choices in digital spaces, consider how poor choices affect negatively writing styles, and

explore how English writing conventions are used based on the type of online audience in different social contexts.

This study highlights that the concept of digital literacy encompasses not only the technical skills required to use digital tools, but also a set of thoughtful, analytical and critical abilities for using digital technology effectively to achieve particular goals. It reflects the ability of being able to think, evaluate and communicate well in online environments. Therefore, digital writing requires that EFL students have a thorough understanding of how to engage effectively in web-based writing practices, use English language appropriately with adequate multimodal features, address different types of online audiences, construct academic writing identities, and participate meaningfully in collaborative learning communities. If EFL students are to succeed in developing sophisticated writing skills and become effective contributors in the academic digital world, it is essential for them to improve digital competencies, which would allow them to use technological resources critically for gaining writing achievements.

Importantly, the study emphasizes that using digital technologies in classrooms is no longer sufficient; having adequate digital literacy skills to learn efficiently through these technologies is an essential requirement in EFL writing contexts. Therefore, students should not be left to use technologies to develop their linguistic competences in digital spaces at their own, they should be rather guided by adult models or teachers to instruct them on how to use technological resources effectively to gain writing achievements.

In order to improve digital skills among EFL students, EFL teachers need first to develop their own digital literacies so that they would be authentic users of digital technologies. They need to reflect on their digital ability levels in order to enhance the skill areas that require improvements, and should seek further support on technology usage by enrolling in professional training courses. They should develop adequate competencies to work efficiently with the most advanced digital equipment, keep abreast of the latest technological innovations in pedagogical contexts, and expand their knowledge on how to integrate new technologies properly within the educational curriculum.

Additionally, EFL teachers should recognize that simple access to technologies will not guarantee effective and thoughtful digital writing practices among EFL students. Therefore, they should develop their students' technological skills so that they can attain adequately targeted learning goals. They need to teach their students how to find, evaluate, synthesize and use information within online learning environments. For instance, they may share their experiences of digital technology uses with students in order to help them engage in efficient writing practices outside of classroom settings.

Evidently, EFL writing classrooms should be equipped with modern technologies to create a digital environment where students can participate in a set of powerful learning opportunities and adequate writing practices. Within this online learning environment, teachers should encourage students to question, think, analyze and carefully select web-based information. They should also remind students to reflect critically on the digital contexts they write within, the audiences they write for, and the linguistic forms they choose for their writing.

4.2.5 Integration of Web 2.0 Tools in EFL Writing Instruction

The study findings indicated that technology-enhanced EFL writing instruction could successfully provide a secure space for students to explore learning and practice writing skills. It made it feasible for the teacher and students to communicate in a way that would not have been possible in the traditional instructional method. In addition, the use of online writing tools made it easier for EFL students to write, reflect, edit, and review their works. Generally, the use of Web 2.0 tools had a great potential for improving EFL students' writing performance, attitudes, motivation, feedback, autonomy, critical thinking, interaction, and collaboration.

Therefore, it is recommended that EFL teachers incorporate Web 2.0 technologies in their writing instruction, and encourage their students to use these resources both within and outside of the classroom to enhance their writing achievements. Although Web 2.0 technologies should not completely replace the face-to-face teaching approach, their use offers a practice setting where students can think and evaluate critically their writing before publishing it for a real audience.

Additionally, their authentic, motivating, and interactive nature provides a great asset in the learning process.

Conclusion

In conclusion, this final chapter discussed significant issues raised by the study findings in light of previous theories and studies related to the research topic. In addition, it presented implications for the effective use of digital literacies and digital technologies in tertiary EFL writing contexts. From this study, it can be concluded that the effective use of digital technology in EFL writing instruction will be attained if the instructional challenges and contextual issues regarding the application of TELL in classrooms are well handled. The study findings suggest that the successful use of technologies can be gained if participants' attitudes towards technology integration in EFL writing class are enhanced, their digital literacy skills are improved, and classrooms are equipped with technology facilities. Obviously, teachers who are provided with technological resources and technical support would use more technology tools in their instruction than those who are poorly supported.

In addition, EFL teachers' positive attitudes which include several aspects such as perceived usefulness, self-confidence and training have a substantial impact on the effective use of technology in pedagogical contexts; therefore, the current beliefs of teachers should be improved to develop the level of digital technology integration in EFL writing instruction. Most importantly, the study suggests that EFL teachers are required to incorporate technological tools into their writing instruction due to the potential of digital literacies and digital technologies in supporting the development of EFL writing skills.

GENERAL CONCLUSION

This study was undertaken to investigate the potential of digital technologies and digital literacy for the learning and teaching of EFL writing skills among EFL teachers and students at the English department of M'sila University. It particularly aimed to examine participants' digital literacy competencies and their beliefs about technology integration in EFL writing classrooms, the current state of digital technology integration in EFL writing instruction, and the influences of contextual factors on teachers' incorporation of digital tools. It also attempted to examine the relationship between EFL students' digital literacy proficiency and their EFL writing skills, and the impact of digital technology integration on the development of EFL students' writing performance. This concluding part summarizes the major findings reported in the preceding chapters, discusses the limitations of the study and recommends suggestions for future research.

1. Summary of Major Findings

This study presented and analyzed findings on the following research issues: levels of digital literacy proficiency among EFL teachers and students; teachers' perspectives regarding technology-enhanced EFL writing instruction; the actual state of technology adoption in EFL writing classrooms; the impact of digital competence on the enhancement of writing skills; and the effects of digital technology incorporation on the improvement of EFL students' writing performance. A mixed-method approach was utilized to integrate the advantages of both quantitative and qualitative data. In this study, quantitative methods, including survey questionnaire and scores of writing tests, and qualitative research methods, including semi-structured interviews and open-ended responses, were used to answer the research questions and test the hypotheses.

Several key results arose in answer to the first research question about the level of EFL teachers and students' digital literacies. Although it is widely believed that students are digital natives and teachers are digital immigrants, this study revealed the opposite to be true: EFL teachers had a high level of digital competence, while students had a low level of digital literacy. EFL teachers were more

competent at using basic technologies such as web browsers, emails, word processing and computers, and less competent at using sophisticated technologies as simulations, web page creations, wikis or blogs, and online collaborative works. Despite their high levels of digital literacy, EFL teachers lacked confidence in their technology abilities. They expressed concerns about utilizing novel digital tools, and claimed that their students were more “tech-savvy” than them. The findings of this study demonstrated that EFL students had an unsatisfactory level of digital literacy. They were proficient with social networking but had low abilities and expertise in using advanced technologies such as Web 2.0 applications, online collaborative projects, and content-based tools.

According to the findings attributed to the second research question on EFL teachers’ beliefs and perspectives about technologies, EFL teachers held favorable attitudes towards the integration of digital technologies in EFL writing instruction. They acknowledged the merits of technology use in EFL writing classroom, such as its potential to provide learning materials and resources, offer opportunities for interactions, and increase students’ motivation. However, several teachers were concerned about the negative aspects related to the use of digital technology in EFL writing classes, such as students’ distraction, laziness, plagiarism and deterioration of academic writing competence. Consequently, teachers considered that technology should be used in EFL writing classes only if it enhanced the teaching practices and aligned with the targeted learning goals.

Although teachers exhibited positive attitudes towards new technologies, they had a low level of technology integration in EFL writing classrooms. They largely used technology tools for low-level tasks, such as seeking information, preparing learning materials, and communicating with students, while they rarely used technology for high-level tasks which require critical, analytical, and collaborative abilities. This suggests that technology was mainly used to facilitate the instructional process rather than promote students’ exploratory and collaborative learning in the classroom. The ineffective use of technologies in EFL writing instruction was attributed to several factors, including the lack of digital resources and institutional support, lack of digital literacy skills, teachers’ fears

about the detrimental effects of technology use in EFL writing classes, teachers' workload, and insufficient time.

The first hypothesis of this study which stated that there is a statistically significant relationship between EFL students' digital literacy proficiency and their academic writing performance was confirmed. The statistical results showed that there was a strong significant correlation between students' digital literacy proficiency and writing outcomes, indicating that an increase in digital skills associates with an improvement in writing quality. This strong relationship was also evident in the open responses of students who shared positive experiences regarding how digital literacy abilities supported the enhancement of their writing skills in digital environments. Participants reported that students with a high level of digital literacy were better able to engage in academic writing practices in online contexts, whereas those with a low level of digital literacy had greater difficulty adopting the standard rules of English language in such contexts. This is due to the fact that students who lack critical engagement with technologies are more prone to break down the conventions of academic writing.

The second hypothesis of the study which stated that digital technology integration has a positive impact on the writing performance of EFL students was also confirmed. The statistical findings revealed that the experimental group made more significant improvements in their writing performance on the post-test than the control group. On the post-writing test, the experimental group outperformed the control group in terms of mean scores for content, language, organization of ideas, and style. The qualitative findings collected from the experimental group's open responses demonstrated also the effectiveness of digital technologies in developing EFL writing skills. Generally, students in the experimental group expressed favorable opinions regarding technology-enhanced EFL writing instruction due to its potential in developing motivation, feedback, critical thinking, autonomy, interaction, and collaboration.

2. Limitations of the Study

This study has some limitations. First, the sample size was insufficient to adequately represent the whole population of EFL teachers and students at M'sila University. The study utilized data collected from third year EFL students enrolled in an academic writing course at the English department of M'sila University. These EFL students are not reflective of the university's EFL learners as a whole. In addition, only few tertiary EFL teachers in this study were interviewed. If more teachers had been able to express their views on technology-enhanced EFL writing instruction, more in-depth findings would have been obtained on technology incorporation in the tertiary EFL writing context. Therefore, the study results cannot be generalized to include to the entire population of EFL students and teachers.

Second, this study relied mostly on the use of survey, interview, pre-test and post-test methods. If additional methods of classroom observation and focus-group discussion were employed, it would be feasible to gain a deeper understanding of the situation of technology integration in EFL writing instruction. The use of classroom observations could have been beneficial to investigate the influence of EFL teachers' attitudes on their actual use of technology tools in EFL writing instruction.

In addition, conducting focus-group discussions with EFL students could yield further insights. Information regarding how EFL students evaluate their teachers' technology implementation and how they perceive the impact of digital technology on the development of their EFL writing skills could have been gained through the use of focus-group discussions. The study could provide more insights on how closely the attitudes of EFL students and teachers towards technology-enhanced EFL writing instruction align, if the method of focus-group discussion was utilized.

Third, in order to obtain data regarding technology integration and digital literacy in EFL writing instruction, the study's design and measures were adjusted to fit tertiary EFL writing context at M'sila university; hence, the generalizability of the findings beyond this study's specific setting is limited because various EFL contexts will yield different results. Nevertheless, there is a potential of generalizability, if other EFL contexts are similar to this study context.

3. Suggestions for Future Research

Given the limitations of this study, it would be useful to recommend some suggestions for future researches. First, it would be beneficial to replicate the study with a larger sample size. Since this study only covered tertiary EFL contexts, it would be also advantageous to conduct comparable studies with different samples (and possibly modified methodologies) to determine if the same findings will be revealed in other contexts. Researchers might be interested in a study involving samples from primary, elementary, or secondary EFL contexts. Other case studies would enhance understanding of how EFL teachers and students' digital competencies, attitudes and uses of technology change in various educational settings.

Second, this study highlighted the significance of EFL teachers' attitudes and perspectives, as well as contextual factors, as a crucial aspect for the success of technology-enhanced writing instruction. Therefore, it would be worthwhile to examine how EFL teachers' beliefs and attitudes towards technology, as well as their own digital proficiency, impact the success of technology integration in EFL writing classrooms. Additionally, it would be beneficial to investigate EFL students' needs in technology-enhanced writing classrooms and their views on the use of technology to promote writing performance.

Third, it is recommended to conduct longitudinal studies to explore the effects of providing technology resources, training programmes, and digital literacy courses on the integration of digital technologies in EFL writing instruction. These studies would determine if EFL teachers will have more favorable opinions on the implementation of technology and use it more frequently in classrooms, after having more technology equipment and facilities available, and after acquiring more digital expertise through the training programmes.

Fourth, in light of the potential of the media technologies, it is interesting to investigate how other online resources such as videos, photographs, and audio files, etc. can assist EFL students in learning EFL writing skills or other language skills. This would allow researchers to draw upon the full benefits of new technologies for the development of language competence.

Finally, the primary objective of this research was to focus on the effectiveness of digital literacy and technology integration in improving EFL writing skills. Future research is recommended to investigate the significance of digital literacy and the viability of introducing technology into the learning of multiple EFL language skills, such as speaking, listening and reading. Additionally, further research is required to examine novel areas. For instance, it is recommended to study the effects of various technology tools on facilitating collaboration, critical thinking and reflection.

REFERENCES

- Abrams, S. S. (2013). Peer review and nuanced power structures: Writing and learning within the age of connectivism. *E-Learning and Digital Media*, 10(4), 395-406.
- Adas, D., & Bakir, A. (2013). Writing difficulties and new solutions: Blended learning as an approach to improve writing abilities. *International journal of humanities and social science*, 3(9), 254-266.
- Ahmed, M. A. E. A. S. (2016). The effect of a flipping classroom on writing skill in English as a foreign language and students' attitude towards flipping. *US-China Foreign Language*, 14(2), 98-114.
- Allen, K. (2005). Online learning: Constructivism and conversation as an approach to learning. *Innovations in Education and Teaching International*, 42(3), 247-256.
- Alshumaimeri, Y. (2011). The effects of wikis on foreign language students writing performance. *Procedia - Social and Behavioral Sciences*, 28, 755-763. doi:10.1016/j.sbspro.2011.11.139
- Apperson, J. M., Laws, E. L., & Scepanisky, J. A. (2008). An assessment of student preferences for PowerPoint presentation structure in undergraduate courses. *Computers & Education*, 50(1), 148-153.
- Arnold, N., Ducate, L., & Kost, C. (2012). Collaboration or cooperation? Analyzing group dynamics and revision processes in wikis. *CALICO Journal*, 29(3), 431-44.
- Atkinson, D. (2003). L2 writing in the post-process era: Introduction. *Journal of Second Language Writing*, 12(1), 3-15. doi: 10.1016/S1060-3743(02)00123-6
- Augar, N., Raitman, R., & Zhou, W. (2004). Teaching and learning online with wikis. In *Beyond the comfort zone: proceedings of the 21st ASCILITE Conference, Perth, 5-8 December* (pp. 95-104). ASCILITE.
- Axtell, K., Maddux, C., & Aberasturi, S. (2008). The effect of presentation software on classroom verbal interaction and on student retention of higher education lecture content. *International Journal of Technology in Teaching and Learning*, 4(1), 21-33.
- Azmi, N. (2017). The benefits of using ICT in the EFL classroom: From perceived utility to potential challenges. *Journal of Educational and Social Research*, 7(1), 111.
- Babbie, E., & Mouton, J. (2001). *The practice of social research*. Cape Town: Oxford University Press Southern Africa.
- Babbie, E., & Mouton, J. (2002). *Social research*. Belmont, CA: Wadsworth Group.
- Baddeley, A. D. (1986). *Working memory*. Oxford, England: Clarendon Press.
- Badger, R., & White, G. (2000). A process genre approach to teaching writing. *ELT Journal*, 54(2), 153-160. doi: 10.1093/elt/54.2.153

- Barell, J. (2010). Problem-based learning: The foundation for 21st century skills. In J. Bellanca & R. Brandt (Eds.), *21st century skills: Rethinking how students learn* (pp. 179–199). Bloomington, IN: Solution Tree.
- Barnard, R., & Campbell, L. (2005). Sociocultural theory and the teaching of process writing: The scaffolding of learning in a university context. *The TESOLANZ Journal*, 13, 76-88.
- Barnes, S. (2003). Computer-Mediated Communication: Human-to-Human Communication across the Internet. *Language Learning & Technology*, 7(3), 30-33.
- Barrios, B. (2003). The year of the blog: Weblogs in the writing classroom. *Computers and Composition Online*, 4. Retrieved March 07, 2019, from <http://www2.bgsu.edu/departments/english/cconline/barrios/blogs/>
- Bates, A. W. (2001). *National Strategies for E-learning in Post-Secondary Education and Training*. Paris: International Institute for Educational Planning, UNESCO.
- Bates, A.W. (2005). *Technology, E-Learning and Distance Education*. London: Routledge.
- Beatty, K. (2003). *Teaching and researching: Computer-assisted language learning*. London, England: Pearson Education.
- Bell, F. (2011). Connectivism: Its place in theory-informed research and innovation in technology enabled learning. *The International Review of Research in Open and Distance Learning*, 12 (3), 98–118.
- Belz, J. A. (2003). Linguistic perspectives on the development of intercultural competence in telecollaboration. *Language Learning & Technology*, 7(2), 68- 117.
- Bennett, S., Maton, K., & Kervin, L. (2008). The ‘digital natives’ debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775-786.doi: 10.1111/j.1467-8535.2007.00793.x
- Betcher, C., & Lee, M. (2009). *The interactive whiteboard revolution: Teaching with IWBs*. Camberwell, Vic: ACER Press.
- Bitner, N., & Bitner, J. (2002). Integrating technology into the classroom: Eight keys to success. *Journal of Technology and Teacher Education*, 10(1), 95-100.
- Black, R. W. (2009). English-language learners, fan communities, and 21st-century skills. *Journal of Adolescent and Adult Literacy*, 52(8), 688–697.
- Bloch, J. (2002). Student/teacher interaction via email: The social context of Internet discourse. *Journal of Second Language Writing*, 11(2), 117-134.
- Bloch, J. (2007). Abdullah’s blogging: A generation 1.5 student enters the blogosphere. *Language Learning & Technology*, 11(2), 128-141.
- Boas, I.V. (2011). Process Writing and the Internet: Blogs and Ning Networks in the Classroom. *English Teaching Forum* 49 (2), 26-33.

- Borden, J. D. (2011). Leveraging Internet Resources to Improve Teaching and Learning. In *A workshop presented at the Second International Conference of E-Learning and Distance Learning*, Riyadh: National Center for E-Learning and Distance Learning.
- Borg, S. (2006). *Teacher cognition and language education. Research and practice*. London, UK: Continuum.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- British Educational Communications and Technology Agency (Becta), (2004). *A review of the research literature on barriers to the uptake of ICT by teachers*. Retrieved August 15, 2018, from <http://www.becta.org.uk>
- Bruner, J. (1999). Folk pedagogies. *Learners and pedagogy*, 1(1), 4-20.
- Bryman, A., 2012. *Social research methods*. Oxford: Oxford University Press.
- Buckingham, D. (2006). Defining digital literacy: What do young people need to know about digital media? *Nordic Journal of Digital Literacy*, 1(4), 263-276.
- Burbules, N. C. (2006). Rethinking the virtual. In J. Weiss (Ed.), *The international handbook of virtual learning environments* (pp. 37–58). The Netherlands: Springer.
- Burns, A. (2010). *Doing action research in English language teaching: A guide for practitioners*. New York: Routledge.
- Calvani, A., Cartelli, A., Fini, A., & Ranieri, M. (2008). Models and instruments for assessing digital competence at school. *Journal of E-Learning and Knowledge Society*, 4(3), 183– 193.
- Campbell, A. P. (2003). Weblogs for use with ESL classes. *The Internet TESL Journal*, 9(2), 33-35.
- Campbell, A. P. (2004). *Learner attitudes towards a tutor-run weblog in the EFL university classroom*. Retrieved May, 25, 2019, from <http://www8.ocn.ne.jp/%7Eapc33/newtanuki.htm>
- Carey, M. (2012). *Qualitative research skills for social work: Theory and practice*. Surrey, England: Ashgate Publishing Limited.
- Caws, C. (2006). Breaking down borders to multiliteracy: Writing in a second language with technology. *IALLT Journal of Language Learning Technologies*, 38(2), 49-71.
- Cennamo, K., Ross, J. D., & Ertmer, P. A. (2010). *Technology integration for meaningful classroom use: A standards-based approach*. Belmont, CA: Wadsworth, Cengage Learning.
- Chao, Y. C. J., & Lo, H. C. (2011). Students' perceptions of wiki-based collaborative writing for learners of English as a foreign language. *Interactive Learning Environments*, 19(4), 395-411.
- Chao, Y.C.J. & Huang, C.K. (2007). The Effectiveness of Computer-Mediated Communication on Enhancing Writing Process and Writing Outcomes: The implementation of Blog and Wiki in the EFL Writing Class in Taiwan. In C. Montgomerie & J. Seale (Eds.), *Proceedings of ED-MEDIA 2007--World Conference on Educational Multimedia, Hypermedia & Telecommunications* (pp. 3463-3468). Vancouver, Canada: Association for the Advancement

of Computing in Education (AACE). Retrieved August 12, 2020, from <https://www.learntechlib.org/primary/p/25871/>.

- Chen, T. (2016). Technology-supported peer feedback in ESL/EFL writing classes: A research synthesis. *Computer Assisted Language Learning*, 29(2), 365-397.
- Chen, Y. L. (2008). A mixed-method study of EFL teachers' Internet use in language instruction. *Teaching and Teacher Education*, 24(4), 1015-1028.
- Chenail, R. J. (2000). Navigating the "seven c's": Curiosity, confirmation, comparison, changing, collaborating, critiquing, and combinations. *The qualitative report*, 4(3), 1-6.
- Chiao, T. L. (2006). Application of blogging in EFL writing class: A Case study. In *Proceedings of the Fifth International Symposium on English teaching, Taipei, Taiwan* (pp. 336-344). Taipei, Taiwan: Crane Publishing.
- Cho, K., & Schunn, C. D. (2007). Scaffolded writing and rewriting in the discipline: A web-based reciprocal peer review system. *Computers & Education*, 48(3), 409-426.
- Chuo, T. W. I. (2007). The Effects of the WebQuest Writing Instruction Program on EFL Learners' Writing Performance, Writing Apprehension, and Perception. *Tesl-ej*, 11(3), n3.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. London: Routledge.
- Coiro, J., Knobel, M., Lankshear, C. & Leu, D. (Eds). (2008). *Handbook of Research on New Literacies*. New York: Lawrence Erlbaum Associates.
- Cole, J. & Foster, H. (2010). *Using Moodle: teaching with the popular Open Source Course Management System* (2nd Ed.). New York NY: O'Reilly media.
- Collis, B., & van der Wende, M. (2002). *Models of Technology and Change in Higher Education: An international comparative survey on the current and future use of ICT in Higher Education*. Twente: Center for Higher Education Policy Studies (CHEPS).
- Cooper, P. A. (1993). Paradigm shifts in designed instruction: From behaviorism to cognitivism to constructivism. *Educational Technology*, 33(5), 12-19.
- Craig, J. L. (2012). *Integrating writing strategies in EFL/ESL university contexts: A writing-across-the-curriculum approach*. Routledge.
- Creswell, J. W. (1994). *Research design: qualitative and quantitative approaches*. Thousand Oaks, CA: Sage Publications.
- Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson Education.
- Creswell, J. W., & Garrett, A. L. (2008). The "movement" of mixed methods research and the role of educators. *South African Journal of Education*, 28(3), 321-333.
- Crook, C., Cummings, J., Fisher, T., Graber, R., Harrison, C., Lewin, C. et al. (2008). *Web 2.0 technologies for learning: The current landscape—opportunities, challenges and tensions*. Coventry, England: Becta. Retrieved May 9, 2020, from https://dera.ioe.ac.uk/1474/1/becta_2008_web2_currentlandscape_litrev.pdf

- Crook, C., Harrison, C., Farrington-Flint, L., Tomás, C., & Underwood, J. (2010). *The Impact of technology: Value-added classroom practice*. Coventry, England: BECTA.
- Cunningham, K. (2000). Integrating CALL into the writing curriculum. *The Internet TESL Journal*, 6(5), 9-22.
- David, C. (2001). *Language and the Internet*. Cambridge, CUP.
- Davies G. (1997). Lessons from the past, lessons for the future: 20 years of CALL. In Korsvold A-K. & Rüschoff, B (eds.), *New technologies in language learning and teaching*, Strasbourg: Council of Europe. Also on the Web in a revised edition (2009) at: <http://www.camsoftpartners.co.uk/coegdd1.htm>
- Davies, J. & Merchant, G. (2007). Looking from the inside out: Academic blogging as new literacy. In Lankshear, C. & Knobel, M. (Eds.), *A new literacies sampler* (pp.167-197). NY: Peter Lang Publishing, Inc.
- De Bot, K., & Stoessel, S. (2002). Introduction: language change and social networks. *International Journal of the Sociology of Language*, 153 (1). 1–7.
- Dede, C. (2009). Immersive interfaces for engagement and learning. *Science*, 323(5910), 66-69.
- Deubel, P. (2003). An investigation of behaviorist and cognitive approaches to instructional multimedia design. *Journal of Educational Multimedia and Hypermedia*, 12(1), 63-90.
- DeVellis, R. F. (2012). *Scale development: Theory and applications* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Dhillon, M. (2007). Online information seeking and higher education students. In M. K. Chelton & C. Cool (Eds.), *Youth information-seeking behaviors II: Context, theories, models and issues* (pp. 165–205). Lanham, MD: Scarecrow Press.
- Dockstader, J. (1999). Teachers of the 21st century know the what, why, and how of technology integration. *THE journal*, 26(6), 73-74.
- Dörnyei, Z. (2007). *Research methods in applied linguistics: quantitative, qualitative and mixed methodologies*. Oxford: Oxford University Press.
- Dowling, C. (2003). The role of the human teacher in learning environments of the future. *Proceedings of the 3.1 and 3.3 working groups conference on International federation for information processing: ICT and the teacher of the future-Volume 23* (pp. 37-38). Australian Computer Society, Inc., AUS. <https://crpit.scem.westernsydney.edu.au/confpapers/CRPITV23Dowling.pdf>
- Downes, S. (2007). Learning networks in practice. *Emerging technologies for learning*, 2(4), 20.
- Ducate, L. C., & Lomicka, L. L. (2005). Exploring the blogosphere: Use of web logs in the foreign language classroom. *Foreign Language Annals*, 38(3), 410-421.
- Ducate, L. C., & Lomicka, L. L. (2008). Adventures in the blogosphere: from blog readers to blog writers. *Computer Assisted Language Learning*, 21(1), 9-28.

- Dudley-Evans, T. (1997). Genre models for the teaching of academic writing to second language speakers: advantages and disadvantages. In T. Miller (ed.), *Functional Approaches to Written Text: Classroom Applications*. Washington DC: United States Information Agency.
- East, M. (2009). Evaluating the reliability of a detailed analytic scoring rubric for foreign language writing. *Assessing Writing*, 14, 88-115.
- El Aggoune, A., & Ghaouar, N. (2019). Barriers to CALL Implementation in Written Expression Courses: EFL Teachers' Perspectives. *Arab World English Journal (AWEJ) Special Issue on CALL*, (5).
- Elola, I., & Oskoz, A. (2017). Writing with 21st century social tools in the L2 classroom: New literacies, genres, and writing practices. *Journal of Second Language Writing*, 36, 52-60.
- Ertmer, P. (1999). Addressing first and second order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, 47 (4), 47–61.
- Ertmer, P. A. (2005). Teacher pedagogical beliefs: The final frontier in our quest for technology integration? *Educational Technology Research and Development*, 53(4), 25-39.
- Eshet-Alkalai, Y. (2004). Digital literacy: A conceptual framework for survival in the digital era. *Journal of Educational Multimedia and Hypermedia*, 13 (1), 93–106.
- European Commission. (2007). *Key competences for life-long learning: European reference framework*. Retrieved March 24, 2019, from http://ec.europa.eu/dgs/education_culture/publ/pdf/ll-learn-ing/keycomp_en.pdf.
- Faigley, L. (1986). Competing theories of process: A critique and a proposal. *College English*, 48(6), 527-542.
- Fairman, J. (2004). *Trading roles: Teachers and students learn with technology*. Orono, ME: Maine Education Policy Research Institute, University of Maine Office.
- Fellner, T., & Apple, M. (2006). Developing writing fluency and lexical complexity with blogs. *The JALT CALL Journal*, 2(1), 15-26.
- Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication*, 32(2), 365-387.
- Fontana, A., & Frey, J. H. (2005). The interview: From structured questions to negotiated text. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (3rd ed., pp. 695-728). Thousand Oaks, CA: Sage Publications.
- Franco, C. d. P. (2008). Using wiki-based peer-correction to develop writing skills of Brazilian EFL learners. *Novitas-ROYAL*, 2(1), 49-59.
- Gall, M.D., Gall, J.P., & Borg, W.R. (2007). *Educational research: An introduction*. (8th ed).
- Gallagher, J. (2010). "As Y'all Know": Blog as Bridge. *Teaching English in the Two-Year College*, 37(3), 286-294.
- Garrison, D.R., & Anderson, T. (2003). *E-Learning in the 21st Century: A framework for research and practice*. London: Routledge.

- Gillham, B. (2005). *Research interviewing*. New York: Open University Press.
- Gilster, P. (1997). *Digital literacy*. New York: Wiley Computer Publications.
- Glover, D., Miller, D., Averis, D., & Door, V. (2005). The interactive whiteboard: a literature survey. *Technology, Pedagogy and Education, 14*(2), 155-170.
- Godwin-Jones, R. (2003). Emerging technologies. Blogs and wikis: Environments for on-line collaboration. *Language, Learning & Technology, 7*(2), 12-16.
- Godwin-Jones, R. (2006). Tag clouds in the blogosphere: Electronic literacy and social networking. *Language Learning & Technology, 10*(2), 8-15.
- Godwin-Jones, R. (2008). Emerging Technologies. Web-writing 2.0: Enabling, documenting, and assessing writing online. *Language Learning & Technology, 12*(2), 7-12.
- Goldberg, A., Russell, M., & Cook, A. (2003). The effect of computers on student writing: A meta-analysis of studies from 1992 to 2002. *The Journal of Technology, Learning and Assessment, 2*(1), 1-51.
- Gonglewski, M., Meloni, C., & Brant, J. (2001). Using e-mail in foreign language teaching: Rationale and suggestions. *The Internet TESL Journal, 7*(3), 1-12.
- Graham, S., & Harris, K. R. (2007). Best practice in teaching planning. In S. Graham, C. A. MacArthur & J. Fitzgerald (Eds.), *Best practices in writing instruction* (pp. 119-140). New York, NY: Guilford Press.
- Gray, K. C. (2001). Teachers' perceptions of innovation adoption. *Action in Teacher Education, 23* (2), 30-35.
- Graziano, A. M., & Raulin, M. L. (2009). *Research methods: A process of inquiry*. Boston, MS: Allyn & Bacon. Hardcover.
- Guo, R. X., Dobson, T., & Petrina, S. (2008). Digital natives, digital immigrants: An analysis of age and ICT competency in teacher education. *Journal of Educational Computing Research, 38*(3), 235-254. doi: 10.2190/EC.38.3.a
- Guri-Rosenblit, S. (2001). Virtual universities: Current models and future trends. *Higher Education in Europe, 26*(4), 487-499.
- Guri-Rosenblit, S. (2004). Distance education teachers in the digital age: New roles and contradictory demands. In J. E. Brindley, C. Walti, & O. Zawacki-Richter (Eds.), *Learner support in open, distance and online learning environments* (pp. 63-70). Oldenburg: Bibliotheks- und Informationssystem der Universität Oldenburg.
- Gutiérrez, A., & Tyner, K. (2012). Media education, media literacy and digital competence. *Comunicar, 3*(1)8, 31-39.
- Hafner, C. A. (2014). Embedding digital literacies in English language teaching: Students' digital video projects as multimodal ensembles. *TESOL Quarterly, 48*(4), 655-685.
- Hafner, C. A. (2015). Remix culture and English language teaching: The expression of learner voice in digital multimodal compositions. *Tesol Quarterly, 49*(3), 486-509.

- Hague, C., & Payton, S. (2010). *Digital literacy across the curriculum*. Berkshire, England: Futurelab.
- Hamdy, A. (2007). *Survey of ICT and Education in Africa: Algeria Country Report*. InfoDev ICT and Education Series. World Bank Group, Washington, D.C.
- Hampel, R. (2006). Rethinking task design for the digital age: A framework for language teaching and learning in a synchronous online environment. *ReCALL*, 18(1), 105-121. doi: 10.1017/S0958344006000711
- Hampel, R., & Stickler, U. (2005). New skills for new classrooms: Training tutors to teach languages online. *Computer assisted language learning*, 18(4), 311-326.
- Hanna, D. E. (2003). Organizational models in higher education, past, and future. In M. G. Moore, & W. G. Anderson (Eds.), *Handbook of distance education* (pp. 67-78). Mahwah, NJ: Lawrence Erlbaum Associates.
- Harasim, L., Hiltz, S. R., Teles, L. and Turrof, M. (1995). *Learning Networks: A Field Guide to Teaching and Learning Online*. Cambridge, MA: MIT Press
- Hargittai, E. (2009). An update on survey measures of web-oriented digital literacy. *Social science computer review*, 27(1), 130-137.
- Hargittai, E. (2010). Digital na(t)ives? Variation in internet skills and uses among members of the 'Net Generation'. *Sociological inquiry*, 80(1), 92-113.
- Hattie, J., & Yates, G. C. (2013). *Visible learning and the science of how we learn*. New York: Routledge.
- Hayes, J. R., & Flower, L. (1983). Uncovering cognitive processes in writing: An introduction to protocol analysis. In P. Mosenal, L. Tamor & S. A. Walmsley (Eds.), *Research in writing: Principles and methods* (pp. 207-220). New York, NY: Longman.
- Heaton, J. B. (1990). *Classroom Testing*. London: Longman.
- Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development*, 48(3), 23-48.
- Higgins, S., Xiao, Z., & Katsipataki, M. (2012). *The impact of digital technology on learning: A summary for the education endowment foundation*. Durham, England: Durham University.
- Hinds, D. (2000). Research instruments. In D. Wilkinson (Ed.), *The researcher's toolkit: The complete guide to practitioner research* (pp. 41-54). London: Routledge Falmer.
- Horváth, J. (2009). Hungarian university students' blogs in EFL: Shaping language and social connections. *TESL-EJ*, 12(4), 1-9.
- Huffaker, D. (2005). The educated blogger: Using weblogs to promote literacy in the classroom. *AACE Journal*, 13(2), 91-98.
- Hull, G., & Schultz, K. (2001). Literacy and learning out of school: A review of theory and research. *Review of Educational Research*, 71(4), 575-611.

- Hunter, B. (2001). Against the odds: Professional development and innovation under less-than-ideal conditions. *Journal of Technology and Teacher Education*, 9(4), 473-496.
- Hussein, A. (2009). The use of triangulation in social sciences research: Can qualitative and quantitative methods be combined. *Journal of Comparative Social Work*, 1(8), 1-12.
- Hyland, K. (2003). Genre-based pedagogies: A social response to process. *Journal of Second Language Writing*, 12(1), 17-29. doi: 10.1016/S1060-3743(02)00124-8
- Hyland, K. (2004). *Genre and second language writing*. United States of America: The University of Michigan Press.
- International Society for Technology in Education. (2007). *National educational technology standards for teachers* (2nd ed.). Eugene, OR: Author.
- Johns, A. M. (2003). Genre and ESL/EFL composition instruction. In B. Kroll (Ed.), *Exploring the dynamics of second language writing* (pp. 195 – 217). New York: Cambridge University Press.
- Johns, A. M., Bawarshi, A., Coe, R. M., Hyland, K., Paltridge, B., Reiff, M. J., & Tardy, C. (2006). Crossing the boundaries of genre studies: Commentaries by experts. *Journal of Second Language Writing*, 15(3), 234-249.
- Johnson, A. (2004). Creating a writing course utilizing class and student blogs. *The Internet TESL Journal*, 10(8), 10-10.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26. doi: 10.3102/0013189X033007014
- Joint Information Systems Committee. (2014). *Developing digital literacies*. JISC: Author. Retrieved from <https://www.jisc.ac.uk/full-guide/developing-digital-literacies>
- Jonassen, D. H. (1994). Thinking technology: Toward a constructivist design model. *Educational technology*, 34(4), 34-37.
- Jonassen, D., Howand, J., Moore, J., & Marra, R. (2003). *Learning to solve problems with technology*. Upper Saddle River, NJ: Prentice Hall.
- Jones, C., & Fortescue, S. (1987). *Using computers in the language classroom*. Addison-Wesley Longman Limited.
- Jones, M. G., & Brader-Araje, L. (2002). The impact of constructivism on education: Language, discourse, and meaning. *American Communication Studies*, 5(1), 1-10.
- Kagan, D. M. (1990). Ways of evaluating teacher cognition: Inferences concerning the Goldilocks principle. *Review of educational research*, 60(3), 419-469.
- Kaplan, R. B. (1967). Contrastive rhetoric and the teaching of composition. *TESOL Quarterly*, 1(4), 10-16.
- Keh, C. L. (1990). Feedback in the writing process: A model and methods for implementation. *ELT Journal*, 44(4), 294-304.

- Keller, H. E., & Lee, S. (2003). Ethical issues surrounding human participants research using the Internet. *Ethics & Behavior*, 13(3), 211-219.
- Kern, R. (2000). *Literacy and language teaching*. Oxford: Oxford University Press.
- Kessler, G. (2009). Student-initiated attention to form in wiki-based collaborative writing. *Language Learning & Technology*, 13(1), 79-95.
- Kessler, G., & Bikowski, D. (2010). Developing collaborative autonomous learning abilities in computer mediated language learning: Attention to meaning among students in wiki space. *Computer Assisted Language Learning*, 23(1), 41-58.
- Kim, H. (2002). Teachers as a barrier to technology-integrated language teaching. *English Teaching*, 57(2), 35-64.
- Kim, M. (2006). Genre-based approach to teaching writing. *HPU TESL Working Paper Series*, 4(2), 33-39.
- Kline, P. (1986). *A handbook of test construction: Introduction to psychometric design*. New York: Methuen.
- Knobel, M. (2011). *Schools of education must fuel a digital revolution in teaching*. Edutopia Web site Retrieved January 09, 2020 from <http://www.edutopia.org/digital-generation-schools-education-technology>
- Knobel, M., & Lankshear, C. (2006). Discussing new literacies. *Language Arts*, 84(1), 78–86.
- Kop, R., & Hill, A. (2008). Connectivism: Learning theory of the future or vestige of the past?. *International Review of Research in Open and Distributed Learning*, 9(3), 1-13.
- Kovacic, A., Bubas, G., & Zlatovic, M. (2007). Evaluation of activities with a wiki system in teaching English as a second language. In *Proceedings of the International Conference ICT for Language Learning, Florence, Italy*. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.681.6606&rep=rep1&type=pdf>
- Krashen, S., & Terrell, T. (1983). *The natural approach: Language acquisition in the classroom*. Oxford, England: Pergamon Press.
- Kuteeva, M. (2011). Wikis and academic writing: Changing the writer–reader relationship. *English for Specific Purposes*, 30(1), 44-57.
- Kvavik, R. B., Caruso, J.B., & Morgan, G. (2004). *ECAR study of undergraduate students and information technology 2004: convenience, connection, and control*. Boulder, CO: EDUCAUSE Center for Applied Research.
- Lai, C., & Gu, M. (2011). Self-regulated out-of-class language learning with technology. *CALL Journal*, 24(4), 317–335.
- Lamb, A., & Johnson, L. (2007). An information skills workout: wikis and collaborative writing. *Teacher Librarian*, 34(5), 57–59.
- Lamb, B. (2004). Wide open spaces: Wikis, ready or not. *EDUCAUSE Review*, 39(5), 36-48.

- Lamy, M., & Hampel, R. (2007). *Online communication in language learning and teaching*. Hampshire, UK: Palgrave Macmillan.
- Lankshear, C., & Knobel, M. (2003). *The 'New Literacies Studies' and the study of "New" literacies*. Philadelphia: Open University Press.
- Lankshear, C., Snyder, I., & Green, B. (2000). *Teachers and techno-literacy: Managing literacy, technology and learning in schools*. Sydney: Allen and Unwin.
- Lantolf, J. P., & Thorne, S. L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford, England: Oxford University Press.
- Laurillard, D. (2013). Foreword to the second edition. In Beetham, H. & Sharpe, R. (Eds), *Rethinking Pedagogy for a Digital Age* (pp. xvi-xviii). London: Routledge.
- Lee, K. W. (2000). English teachers' barriers to the use of computer-assisted language learning. *The internet TESL Journal*, 6 (12), 1-8.
- Lee, L. (2010). Fostering reflective writing and interactive exchange through blogging in an advanced language course. *ReCALL*, 22(2), 212-227.
- Lei, J. (2009). Digital natives as preservice teachers: What technology preparation is needed? *Journal of Computing in teacher Education*, 25(3), 87-97.
- Leki, I., Cumming, A., & Silva, T. (2008). *A synthesis of research on second language writing*. New York, IL: Routledge.
- Lent, R.C. (2012). *Overcoming textbook fatigue: 21st century tools to revitalize teaching and learning*. Alexandria, VA: ASCD.
- Leuf, B., & Cunningham, W. (2001). *The Wiki way: quick collaboration on the Web*. Boston: Addison-Wesley.
- Lever-Duffy, J., & McDonald, J. B. (2011). *Teaching and learning with technology*. (4th ed.). New York: Allyn & Bacon.
- Levin, D., & Arafah, S. (2002). *The digital disconnect: The widening gap between Internet savvy students and their schools*. Washington, DC: Pew Internet & American Life Project.
- Levy, M. (2000). Scope, goals and methods in CALL research: Questions of coherence and autonomy. *ReCALL*, 12(2), 170-195.
- Lightbown, P. M., & Spada, N. (2006). *How languages are learned* (3rd ed.). Oxford: England, Oxford University Press
- Lin, H. (2014). Establishing an empirical link between computer-mediated communication (CMC) and SLA: A meta-analysis of the research. *Language Learning & Technology*, 18(3), 120-147.
- Lin, W., & Yang, S. (2011). Exploring students' perceptions of integrating Wiki technology and peer feedback into English writing courses. *English Teaching: Practice and Critique*, 10(2), 88-103.
- Lotherington, H., & Jenson, J. (2011). Teaching multimodal and digital literacy in L2 settings: New literacies, new basics, new pedagogies. *Annual Review of Applied Linguistics*, 31(1), 226-246.

- Lowe, C., & Williams, T. (2004). Moving to the public: Weblogs in the writing classroom. In L.J. Gurak, S. Antonijevic, L. Johnson, C. Ratliff, & J. Reyman (Eds.), *Into the blogosphere: Rhetoric, community, and culture of weblogs*. Retrieved November 10, 2020, from <https://conservancy.umn.edu/handle/11299/172819>
- Loyd, B.H., & Loyd, D.E. (1985). The reliability and validity of an instrument for the assessment of computer attitudes. *Educational and Psychological Measurement*, 45, 903-908.
- Lundin, R. (2008). Teaching with wikis: Toward a new worked pedagogy. *Computers and Composition*, 25 (4), 432-448.
- Mackey, T. P., & Ho, J. (2005). Implementing a convergent model for information literacy: Combining research and web literacy. *Journal of Information Science*, 31(6), 541–555. doi: 10.1177/0165551505057018.
- Martin, A. (2008). Digital literacy and the digital society. In C. Lankshear and M. Knobel (Eds.), *Digital literacies: Concepts, policies and practices* (pp. 151-177). New York: Peter Lang Publishing.
- Martin, A., & Grudziecki, J. (2006). DigEuLit: Concepts and tools for digital literacy development. *Innovation in teaching and learning in information and computer sciences*, 5(4), 249-267.
- Martin, A., & Rader, H. (Eds.). (2003). *Information and IT literacy: Enabling learning in the 21st century*. London: Facet Publishing.
- Mason, J. (2002). *Qualitative researching* (2nd edition). Thousand Oaks, CA: Sage Publications.
- Matsuda, P. K. (2003a). Process and post-process: A discursive history. *Journal of Second Language Writing*, 12(1), 65–83.
- Matsuda, P. K. (2003b). Second language writing in the twentieth century: A situated historical perspective. In B. Kroll (Ed.), *Exploring the dynamics of second language writing* (pp. 15–34). New York: Cambridge University Press.
- Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3 ed.). Los Angeles, CA: Sage.
- Mayer, R. E. (1997). Multimedia learning: Are we asking the right questions?. *Educational Psychologist*, 32(1), 1-19.
- Mayer, R. E. (2005). Cognitive theory of multimedia learning. In R. E. Mayer (Ed.), *The Cambridge handbook of multimedia learning* (pp. 31–48). Cambridge University Press. <https://doi.org/10.1017/CBO9780511816819.004>
- Mayer, R. E., & Anderson, R. B. (1992). The instructive animation: Helping students build connections between words and pictures in multimedia learning. *Journal of Educational Psychology*, 84(4), 444-452.
- McLaughlin, B. (1990). *Myths and misconceptions about second language learning: What every teacher needs to unlearn*. Santa Cruz: National Center for Research on Cultural Diversity and Second Language Learning.

- McLoughlin, C. (2011). What ICT-related skills and capabilities should be considered central to the definition of digital literacy? In T. Bastiaens and M. Ebner (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2011* (pp. 471-475). Chesapeake, VA: AACE.
- McPherson, K. (2006). Wikis and student writing. *Teacher Librarian*, 34(2), 70-72.
- Melouk, M., & Merbouh, Z. (2014). EFL writing hindrances and challenges: The case of second year students of English at Djillali Liabes. *Journal of Educational and Social Research*, 4(3), 149-156. Doi:10.5901/jesr.2014.v4n3p149
- Merchant, G. (2007). Writing the future in the digital age. *Literacy*, 41(3), 118–128.
- Meyer, A., & Rose, D. H. (1998). *Learning to read in the computer age*. Cambridge, MA: Brookline Books.
- Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A new framework for teacher knowledge. *Teachers College Record*, 108 (6), 1017-1054.
- Mitchell, M. L., & Jolley, J. M. (2010). *Research design explained*. CA: Wadsworth.
- Miyazoe, T., & Anderson, T. (2010). Learning outcomes and students' perceptions of online writing: Simultaneous implementation of a forum, blog, and wiki in an EFL blended learning setting. *System*, 38(2), 185-199.
- Moreno, R., & Mayer, R. E. (2000). A learner-centered approach to multimedia explanations: Deriving instructional design principles from cognitive theory. *Interactive multimedia electronic journal of computer-enhanced learning*, 2(2), 12-20.
- Morrell, E. (2012). 21st-century literacies, critical media pedagogies, and language arts. *The Reading Teacher*, 66(4), 300-302.
- Mudra, H. (2020). Digital literacy among young learners: How do EFL teachers and learners view its benefits and barriers?. *Teaching English with Technology*, 20(3), 3-24.
- Murray, L, Hourigan, T., & Jeanneau, C., (2007). Blog writing integration for academic language learning purposes: Towards an assessment framework. *Ibérica*, 14, 9-32.
- Murray, L., & Hourigan, T. (2006). Using micropublishing to facilitate writing in the foreign language. In L. Ducate & N. Arnold (Eds.), *Calling on CALL: From theory and research to new directions in foreign language teaching* (pp. 149–179). San Marcos: CALICO.
- Myles, J. (2002). Second language writing and research: The writing process and error analysis in student texts. *Teaching English as a Second or Foreign Language*, 6(2), 1-19.
- Narli, S. (2010). An alternative evaluation method for Likert type attitude scales: Rough set data analysis. *Scientific research and Essays*, 5(6), 519-528.
- National Commission on Writing. (2004). *Writing: A ticket to work... or a ticket out*. New York, NY: College Entrance Examination Board.

- New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60–92.
- Newby, T. J., Stepich, D. A., Lehman, J. D., & Russell, J. D. (2006). *Instructional technology for teaching and learning: Designing instruction, integrating computers, and using media* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Ng, W. (2012). Can we teach digital natives digital literacy?. *Computers & Education*, 59(3), 1065-1078.
- Nunan, D. (1999). *Second Language Teaching & Learning*. Boston: Heinle & Heinle Publishers.
- Nunnally, J. C. (1978). *Psychometric Theory 2nd ed.* Mcgraw hill book company.
- O’neill, K., Singh, G., & O’donoghue, J. (2004). Implementing eLearning programmes for higher education: A review of the literature. *Journal of Information Technology Education: Research*, 3(1), 313-323.
- Oblinger, D., & Oblinger, J. L. (Eds.) (2005). *Educating the net generation*. Boulder, CO: EDUCAUSE.
- Onwuegbuzie, A. J., & Collins, K. M. T. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report*, 12(2), 281-316. Retrieved from <http://www.eric.ed.gov/PDFS/EJ800183.pdf>
- Onwuegbuzie, A. J., & Leech, N. L. (2006). Linking research questions to mixed methods data analysis procedures. *The Qualitative Report*, 11(3), 474-498. Retrieved from <http://www.nova.edu/ssss/QR/QR11-3/onwuegbuzie.pdf>
- Oommen, A. (2012). Teaching English as a global language in smart classrooms with PowerPoint presentation. *English Language Teaching*, 5(12), 54-61.
- Ormrod, J. E. (2004). *Human learning* (4th ed.). Upper Saddle River, NJ: Merrill/ Prentice Hall.
- Özdemir, E., & Aydın, S. (2015). The effects of blogging on EFL writing achievement. *Procedia-social and behavioral sciences*, 199, 372-380.
- Paltridge, B. (2002). Genre, text type, and the English for academic purposes (EAP) classroom. In A. M. Johns (Ed.), *Genre in the classroom: Multiple perspectives* (pp. 73–90). Mahwah, NJ: Lawrence Erlbaum.
- Parker, K., & Chao, J. (2007). Wiki as a teaching tool. *Interdisciplinary Journal of e-learning and Learning Objects*, 3(1), 57-72.
- Pavlenko, A., & Lantolf, J. P. (2000). Second language learning as participation and the (re)construction of selves. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 155-177). New York, NY: Oxford University Press.
- Pedro, F. (2007). The new millenium learners: Challenging our views on digital technologies and learning. *Digital Kompetanse*, 4, 244-263.
- Pelgrum, W. J. (2001). Obstacles to the integration of ICT in education: Results from a worldwide educational assessment. *Computers & Education*, 37(2), 163-178.

- Peterson, M. (2012). EFL learner collaborative interaction in second life. *ReCALL*, 24(1), 20–39.
- Pierson, M. (2001). Technology integration practice as a function of pedagogical expertise. *Journal of Research on Computing in Education*, 33(4), 413-430.
- Pinkman, K. (2005). Using blogs in the foreign language classroom: Encouraging learner independence. *The JALT CALL Journal*, 1(1), 12-24.
- Prensky, M. (2001). Digital natives, digital immigrants, part 1. *On the Horizon*, 9(5), 1-6. Retrieved from <http://www.webcitation.org/5eBDYI5Uw>
- Pritchard, R. J., & Honeycutt, R. L. (2007). Best practices in implementing a process approach to teaching writing. In S. Graham, C. A. MacArthur & J. Fitzgerald (Eds.), *Best practices in writing instruction* (pp. 28-49). New York, NY: Guilford Press.
- Rahimi, M., & Yadollahi, S. (2011). ICT use in EFL classes: A focus on EFL teachers' characteristics. *World Journal of English Language*, 1(2), 17-29. doi: 10.5430/wjel.v1n2p17
- Rao, Z. (2007). Training in brainstorming and developing writing skills. *ELT journal*, 61(2), 100-106.
- Rhodes, J. A., & Robnolt, V. J. (2009). Digital literacies in the classroom. In Christenbury, L., Bomer, R., & Smagorinsky, P. (Eds.) *Handbook of Adolescent Literacy Research* (pp. 153-169). New York: The Guilford Press.
- Richards, J. C., & Renandya, W. A. (2002). *Methodology in language teaching: An anthology of current practice*. Cambridge university press.
- Richardson, W. (2010). *Blogs, wikis, podcasts, and other powerful web tools for classrooms*. Corwin press.
- Richey, R. C. (2008). Reflections on the 2008 AECT definitions of the field. *TechTrends*, 52(1), 24-25.
- Rico, M., & Vinagre, F. (2000). A comparative study in motivation and learning through print-oriented and computer-oriented tests. *Computer Assisted Language Learning*, 13(4-5), 457-465.
- Ritchie, J., & Spencer, L. (2002). Qualitative data analysis for applied policy research. In C. Casell, & G. Symon (Eds.), *Qualitative methods in organisational research*. London: Sage Publications.
- Robb, T. (2004). Moodle: A virtual learning environment for the rest of us. *TESL-EJ*, 8(2), 1-8.
- Rogers, C. R., & Freiberg, H. J. (1994). *Freedom to Learn* (3rd edn), Columbus OH: Merrill.
- Rosatelli, M. C., & Self, J. A. (2004). A collaborative case study system for distance learning. *International Journal of Artificial Intelligence in Education*, 14(1), 97-125.
- Rovai, A. P. (2004). A constructivist approach to online college learning. *The Internet and Higher Education*, 7(2), 79-93.

- Santos, T. (1992). Ideology in composition: L1 and ESL. *Journal of Second Language Writing*, 1(1), 1–15.
- Schmid, E. C. (2008). Potential pedagogical benefits and drawbacks of multimedia use in the English language classroom equipped with interactive whiteboard technology. *Computers & Education*, 51(4), 1553-1568.
- Schonlau, M., Fricker, R.D. Jr., & Elliott, M. N (2002). *Conducting Research Surveys via E-Mail and the Web*, RAND: Santa Monica, MR-1480-RC.
- Selber, S. (2004). *Multiliteracies for a digital age*. Carbondale, IL: Southern Illinois University Press.
- Sharpe, R., & Beetham, H. (2010). Understanding students' uses of technology for learning: Towards creative appropriation. In R. Sharpe, H. Beetham, & S. de Freitas (Eds.), *Rethinking learning for the digital age: How learners shape their experiences* (pp. 85-99). London: Routledge. <https://doi.org/10.4324/9780203852064>
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology & Distance Learning*, 2 (1), 3–9.
- Silva, T. (1987). *ESL Composition: An historical perspective*. Paper presented at the annual meeting of the Conference of College Composition and Communication. Atlanta, GA.
- Spack, R., & Sadow, C. (1983). Student-teacher working journals in ESL freshman composition. *TESOL Quarterly*, 17(4), 575-594.
- Stake, R. E. (2000). Case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 435-545). Thousand Oaks, CA: Sage.
- Strunk, W., Jr., & White, E. B. (2000). *The elements of style* (4th ed.). Needham Heights, MA: Allyn & Bacon.
- Sturman, L. (1994). Case study methods. In Keeves, J. P. (Ed.), *Educational research, methodology, and measurement: An international handbook*. (2nd ed.). (pp.61-6). Oxford: Pergamon.
- Sun, Y. C. (2010). Extensive writing in foreign-language classrooms: A blogging approach. *Innovations in Education and Teaching International*, 47(3), 327-339.
- Sun, Y. C., & Chang, Y. J. (2012). Blogging to learn: Becoming EFL academic writers through collaborative dialogues. *Language Learning & Technology*, 16(1), 43-61.
- Susser, B. (1994). Process approaches in ESL/EFL writing instruction. *Journal of Second Language Writing*, 3(1), 31-47.
- Suvorov, R. (2010). Using Moodle in ESOL writing classes. *TESL-EJ*, 14(2), 1-11.
- Swales, J. M. (Ed.). (1990). *Genre analysis: English in academic and research setting*. New York: Cambridge University Press.
- Sykes, J. M., Oskoz, A., & Thorne, S. L. (2008). Web 2.0, synthetic immersive environments, and mobile resources for language education. *CALICO Journal*, 25(3), 528-546.

- Thomas, M., & Schmid, E. C. (2010). *Interactive whiteboards for education: Theory, research and practice*. Hershey, PA: IGI Global.
- Thorne, S. (2005). Pedagogical and praxiological lessons from Internet-mediated intercultural foreign language education research. In J. Belz & S. Thorne (Eds.), *Internet-mediated intercultural foreign language education* (pp. 3–30). Boston, MA: Thomson Higher Education.
- Thorne, S. L. (2009). ‘Community’, semiotic flows, and mediated contribution to activity. *Language Teaching*, 42(1), 81–94.
- Thorne, S. L., & Payne, J. S. (2005). Evolutionary trajectories, Internet-mediated expression, and language education. *CALICO Journal*, 22(3), 371–397. <https://doi.org/10.1558/cj.v22i3.371-397>
- Thorne, S. L., & Reinhardt, J. (2008). “Bridging activities,” new media literacies, and advanced foreign language proficiency. *Calico Journal*, 25(3), 558-572.
- Tompkins, G., Campbell, R., Green, D., & Smith, C. (2014). *Literacy for the 21st century*. Pearson Australia.
- Tribble, C. (1996). *Writing*: Oxford University Press.
- Trilling, B & Fadel, C. (2009). *21st Century Skills: Learning for Life in Our Time*. San Francisco, CA: Jossey-Bass.
- Trucano, M. (2005). *Knowledge Maps: ICTs in Education*. Washington, DC: InfoDev/World Bank.
- Turgut, Y. (2009). EFL Learners’ Experience of Online Writing by PBWiki. In G. Siemens & C. Fulford (Eds.), *Proceedings of ED-MEDIA 2009--World Conference on Educational Multimedia, Hypermedia & Telecommunications* (pp. 3838-3847). Honolulu, HI, USA: Association for the Advancement of Computing in Education (AACE). Retrieved August 12, 2020, from <https://www.learntechlib.org/primary/p/32033/>.
- United Nations Organization for Education, Science and Culture. (2008). *Teacher Training Curricula for Media and Information Literacy. Report of the International Expert Group Meeting UNESCO House*. Paris: International UNESCO. Retrieved from http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/teacher_training_curricula_mil_meeting_june_2008_report_en.pdf
- Verma, G. K., & Mallick, K. (1999). *Researching Education*. London: Falmer Press.
- Vrasidas, C., & Glass, G. V. (2005). Teacher professional development: Issues and trends. In C. Vrasidas & G. V. Glass (Eds.), *Current perspectives in applied information technologies: Online professional development for teachers* (pp.1- 29). Greenwich, CT: Information Age Publishing, Inc.
- Vygotsky, L. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.
- Vygotsky, L. S. (2000). *Thought and language*. Cambridge, MA: MIT Press.
- Wang, H., & Gearhart, D. L. (2006). *Designing and developing web-based instruction*. Englewood Cliffs, NJ: Prentice-Hall.

- Ward, J. M. (2004). Blog assisted language learning (BALL): Push button publishing for the pupils. *TEFL Web Journal*, 3(1), 89-125.
- Warschauer, M. (1996). Comparing face-to-face and electronic discussion in the second language classroom. *CALICO Journal* 13(2), 7-26.
- Warschauer, M. (2002). Reconceptualizing the digital divide. *First Monday*, 7(7). Retrieved July 1, 2020 from <https://firstmonday.org/article/view/967/888>
- Warschauer, M. (2005). Sociocultural perspectives on CALL. In J. Egbert & G. M. Petrie (Eds.), *CALL research perspectives* (pp. 41-51). Mahwah, NJ: Lawrence Erlbaum.
- Warschauer, M. (2008). Laptops and literacy: A multi-site case study. *Pedagogies: An International Journal*, 3(1), 52-67.
- Warschauer, M. (2011). *Learning in the cloud: How (and why) to transform schools with digital media*. New York, NY: Teachers College Press.
- Warschauer, M., & Grimes, D. (2007). Audience, authorship, and artifact: The emergent semiotics of Web 2.0. *Annual Review of Applied Linguistics*, 27, 1-23. doi:10.1017/S0267190508070013
- Warschauer, M., & Kern, R. (2000). *Network-based language teaching: Concepts and practice*. Cambridge, UK: Cambridge University Press.
- Warschauer, M., & Matuchniak, T. (2010). New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. *Review of Research in Education*, 34(1), 179-225.
- Warschauer, M., & Ware, P. (2006). Automated writing evaluation: Defining the classroom research agenda. *Language teaching research*, 10(2), 157-180.
- Wei, L. (2000). Towards a critical evaluation of language maintenance and language shift. *Sociolinguistica*, 14(1), 142-147.
- Weir, C. J. (1990). *Communicative Language Testing*. London: Prentice Hall International.
- Wellington, J. (2000). *Educational research: contemporary issues and practical approaches*. London : Continuum.
- Wenglinsky, H. (2005). *Using technology wisely: The keys to success in schools*. Teachers College Press: NY.
- Wichadee, S. (2010). Using wikis to develop summary writing abilities of students in an EFL class. *Journal of College Teaching & Learning*, 7(12), 5-10.
- Williams, P. E. (2003). Roles and Competencies for Distance Education Programs in Higher Education Institutions, *American Journal of Distance Education*, 17 (1), 45-57.
- Wilson, B. (1996). What is a constructivist learning environment? In B. Wilson (Ed.), *Constructivist learning environments: Case studies in instructional design* (pp. 3-8). Englewood Cliffs, NJ: Educational Technology Publications.

- Wilson, B. G., Ludwig-Hardman, S., Thornam, C. L., & Dunlap, J. C. (2004). Bounded community: Designing and facilitating learning communities in formal courses. *International Review of Research in Open and Distributed Learning*, 5(3), 1-22.
- Winke, P., & Goertler, S. (2008). Did we forget someone? Students' computer access and literacy for CALL. *CALICO Journal*, 25(3), 482-509.
- Wu, H. J., & Wu, P. L. (2011). Learners' perceptions on the use of blogs for EFL learning. *US-China Education Review*, 1(3), 323-330.
- Wu, W. S. (2005). Using blogs in an EFL writing class. In *meeting of the 2005 Conference and Workshop on TEFL and Applied Linguistics, Department of Applied English, Ming Chuan University* (Vol. 16, pp. 426-432). Retrieved July 7, 2019, from <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.476.3456&rep=rep1&type=pdf>
- Wyse, D. (2009). Teaching English, language and literacy. *Cambridge Journal of Education*, 39(3), 287-290.
- Xiao, Y., & Lucking, R. (2008). The impact of two types of peer assessment on students' performance and satisfaction within a Wiki environment. *The Internet and Higher Education*, 11(3-4), 186-193.
- Yan, G. A. (2005). Process-genre model for teaching writing. *English Teaching Forum*, 43(3), 18-26.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Zamel, V. (1976). Teaching composition in the ESL classroom: What we can learn from research in the teaching of English. *TESOL Quarterly*, 10(1), 67-76.
- Zamel, V. (1983). The composing processes of advanced ESL students: Six case studies. *TESOL Quarterly*, 17(2), 165-186.
- Zemsky, R., & Massy, W. F. (2004). Why the e-learning boom went bust. *The Chronicle of Higher Education*, 50(44), B6-B8.
- Zhang, D. (2009). The application of blog in English writing. *Journal of Cambridge Studies*, 4(1), 64-72.
- Zhang, F., & Barber, B. (Eds.). (2008). *Handbook of research on computer-enhanced language acquisition and learning*. Hershey, PA: Information Science Reference.

Appendices

Appendix (1): Informed Consent Form

Title of the Research Project:

Digital technology and Digital literacy in tertiary EFL writing instruction: A case study of EFL teachers and third year EFL students at M'sila University

Researcher: Hamouma Chahrazad

This study is about digital technology and digital literacy in tertiary EFL writing instruction. It attempts to investigate the efficacy of digital literacy and digital technology on the development of writing skills. Particularly, it aims to explore EFL teachers and students' digital literacy proficiency and their current digital practices, to elicit teachers and students' perspectives regarding the integration of digital technologies in EFL writing instruction, and to examine the status of technology incorporation in EFL writing class.

Survey questionnaires will be administered to both teachers and students during the data collection process. Participants may spend about 20 minutes to complete the survey. A few teachers will be asked to participate in semi-structured interviews in order to find out their views on the research issues under discussion. The interviews sessions will take approximately 20-35 minutes and will be held at a comfortable classroom in the English Department.

Participation in this study is non-compulsory, and all respondents have the freedom to withdraw from the study at any moment. No participant will be identified as an individual in this study. Pseudonyms will be used instead of participants' real identities in order to maintain anonymity and confidentiality. In addition, all the collected data will be secured safely and kept confidentially. The transcriptions of interviews will be available to the study participants to check before undertaking data analysis.

If you have any questions regarding the research study, please do not hesitate to contact the researcher via the email or phone number provided above.

Please sign and give this form back to the researcher, if you accept to take part in this research.

I, (name) do agree to participate in the research.

Signature:

Date:

Thank you for your collaboration

Appendix (2): Teachers' Survey Questionnaire

This survey is about digital literacy and digital technologies in tertiary EFL writing instruction, it aims to assess EFL teachers' digital literacy competence and their digital practices, and to elicit how EFL teachers think about using digital technologies in writing instruction. The survey comprises of four sections: The first section is biographical, it aims at gathering some personal information, the second section attempts to measure EFL teachers' digital literacy proficiency, the third section investigates EFL teachers' attitudes towards digital technology incorporation in writing classrooms, and the fourth section examines the current situation of digital technology integration in tertiary EFL writing context.

I hope that you will be willing to spend about 20-30 minutes to complete this survey. Thank you for providing information that will be regarded as confidential.

Section One: Background Information

Please put a check (√) to provide information about yourself.

- 1. Gender:** Male Female
- 2. Age:** less than 25 26 – 35 36 – 45 46 – 55 over 55
- 3. Your Major is:**
- Applied linguistics Didactics (TEFL) Civilization and literature
- Translation ESP (English for specific purposes)
- 4. Academic Degree:** Master Magister Doctorate Other:
- 5. Teaching Experience:** 1-5 years 6-10 years
- 11-15 years 15-20 years
- More than 20 years

Section Two: Digital Literacy Level of EFL Teachers

How would you rate your digital literacy level of the following skills? Please indicate with a tick (√) the response that is most appropriate for your proficiency.

Items	Illiterate	Poor	Average	Good	Excellent
1. Using computers.					
2. Using cell-phones and tablet devices (iPad or Android).					
3. Using printers.					
4. Using digital cameras.					
5. Using electronic readers such as Kindle.					
6. Attaching files to emails or to sharing websites.					
7. Transferring files from cell phones to computers or vice versa.					
8. Navigating the web browsers such as Internet Explorer and Firefox.					
9. Using search engines such as Google or Bing.					
10. Finding information that you want on a website.					
11. Evaluating if information on a website is up-to-date and reliable.					
12. Figuring out how trustworthy a website is.					
13. Using email.					
14. Participating in an electronic conferencing or online forum.					

15. Using social networking sites such as Facebook, Twitter, Instagram, etc.					
16. Using a Word Processing to create documents.					
17. Using Presentation software (e.g. PowerPoint or Prezi).					
18. Using electronic databases (e.g. MS Access) and managing excel files.					
19. Collaborating with others on a group work.					
20. Downloading files to different locations on a mobile or computer.					
21. Operating language labs.					
22. Using smart boards.					
23. Using scanners.					
24. Establishing networks on a computer.					
25. Troubleshooting technical hardware and software problems.					
26. Understanding copyright ownership when downloading files (books, videos, images, etc.) from the Internet.					
27. Securing your electronic device (Anti-virus software, firewall, spyware, etc.).					
28. Creating a wiki.					
29. Using and editing blogs.					
30. Installing software.					
31. Creating and editing video/audio files.					
32. Using electronic library databases for searching resources such as books and articles.					
33. Editing documents.					
34. Creating and editing simulations and animations.					
35. Creating web pages.					

1. Overall, and according to your own understanding, how would you rate your digital literacy level?

- 1) Very low
- 2) Low
- 3) Medium
- 4) High
- 5) Very high

2. How would you rate your ability to use digital technologies as compared to your students?

- 1) Our knowledge levels are somehow equal
- 2) My students know more than me
- 3) I know more than my students do

Section Three: EFL Teachers' Attitudes towards Technology Integration

Please indicate with a tick (✓) the response that applies to you.

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I generally hold positive attitudes towards integrating digital technologies in EFL writing instruction.					
2. Digital technology promotes interaction between EFL teachers and students.					
3. The use of digital technologies facilitates classroom management.					
4. Using web-based writing activities makes the learning of writing more attractive and faster than using the conventional hand writing method.					
5. Digital technologies enhance students' personal expression and creativity.					
6. When utilizing digital technologies, students write faster and carelessly, with poor grammar, spelling and punctuation.					
7. Digital technologies distract students from academic work and effective learning.					
8. Technology provides teachers with effective learning materials and resources for EFL writing instruction.					
9. Technology facilitates the writing process as it enables students to revise and edit easily their works.					
10. Students can collaborate and share their work with a larger audience thanks to digital technologies.					
11. Today's technologies make it more difficult for students to find and use reliable resources.					
12. Because technology use is important in EFL writing contexts, courses on digital literacy should be incorporated into the curriculum.					
13. The gap between the most and least successful students in academic writing is narrowed due to technologies.					
14. Technology helps students to understand and develop different writing styles.					

Section Four: Status of Technology Integration in EFL Writing Instruction

Please indicate with a tick (✓) how often you use the following technological practices in EFL writing instruction.

Items	Never	Rarely	Sometimes	Most of the time	All the time
1. Using a website, wiki or blog for supporting English writing practice.					
2. Asking students to use discussion groups for working collaboratively on an online writing project.					
3. Using online search engines to prepare for authentic learning materials related to EFL writing skills.					
4. Participating in students' online forums and providing necessary feedback on students' writing.					
5. Asking students to share their electronic writings with peers for exchanging feedback and ideas.					
6. Encouraging online submission of students' written assignments.					
7. Taking and displaying pictures of students' written assignments in classroom.					
8. Having students use web-based research to look for useful information before writing paragraphs, reports, or essays.					
9. Using social networking sites (Facebook, LinkedIn or Google+) for exchanging ideas and interacting with students.					
10. Using educational videos or other multimedia resources in classroom.					
11. Using the internet for keeping up updated on the latest knowledge (researches, content and methods) in EFL writing field.					
12. Using e-mail for written communication with students.					
13. Using Microsoft Word and PowerPoint to prepare for course materials.					
14. Using online platforms such as Moodle to upload lectures and classroom activities.					
15. Encouraging students to engage into online reading (books or articles) to promote their knowledge on writing skills.					
16. Having students use online references (e.g. dictionaries) to enrich their writing.					

17. Using online language tests and exercises for the assessment of students' writing skills.					
18. Using LCD projectors in classrooms to present lectures.					

1. How would you describe the level of your department in integrating digital technologies effectively?

- 1) Behind the curve
- 2) About average
- 3) Ahead of the curve

2. The faculty does a satisfactory job when it comes to providing teachers with digital resources for integrating digital technologies into classrooms?

- 1) Yes
- 2) No

3. The faculty does a satisfactory job when it comes to providing teachers with formal training on how to integrate effectively digital technologies into classrooms?

- 1) Yes
- 2) No

Thank you for your collaboration

22. Using smart boards.					
23. Using scanners.					
24. Establishing networks on a computer.					
25. Troubleshooting technical hardware and software problems.					
26. Understanding copyright ownership when downloading files (books, videos, images, etc.) from the Internet.					
27. Securing your electronic device (Anti-virus software, firewall, spyware, etc.).					
28. Creating a wiki.					
29. Using and editing blogs.					
30. Installing software.					
31. Creating and editing video/audio files.					
32. Using electronic library databases for searching resources such as books and articles.					
33. Editing documents.					
34. Creating and editing simulations and animations.					
35. Creating web pages.					

Part Two: Open-ended Questions

1. How do you perceive the relationship between digital literacy competence and EFL writing skills?
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2. To what extent do you think having an adequate level of digital literacy is important for the development of EFL writing performance?
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3. Overall, have your digital literacy skills assisted you to gain any writing achievements. If yes, explain how were they useful?
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4. What kind of digital practices do you usually engage into to improve your writing skills?
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5. What are the consequences of digital illiteracy/limited digital proficiency on EFL writing development? Illustrate with examples.
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6. How learning writing is different between digitally literate and digitally illiterate students?
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Thank you for your collaboration

Appendix (4): Writing Test Correlated with Perceived Digital Literacy Proficiency

Write a compare and contrast essay about the topic below. You should provide your response in a well-written, comprehensive essay: Introduction, body, and conclusion paragraph. Make sure to use correct grammar, spelling and punctuation. You will have 80 minutes to write the composition.

“Education at the college level differs from that at the high school level in a number of ways. Nonetheless, there are many similarities between these institutes of learning. Write about the similarities and differences concerning education at college and high school”.

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Appendix (5): Teachers' Semi-Structured Interview Questions

1. To what extent do you think it is important to incorporate digital technologies in EFL tertiary context?
2. Are you comfortable in using new technologies?
3. What is your students' reaction when it comes to using new technologies in classrooms?
4. What are the advantages and disadvantages that digital technologies may have on students' learning in general?
5. How do you evaluate your digital literacy competence?
6. Overall, how do you evaluate the digital literacy proficiency of EFL teachers and students?
7. To what extent do you think it is important for EFL teachers to develop their digital literacy?
8. What are the main barriers to develop digital literacy?
9. To what extent do you think your department integrates effectively digital technologies in classrooms?
10. Do you use digital technologies in EFL writing instruction? If yes, what kind of technologies do you use?
If no, why not?
11. Do you get any technical support from your department or colleagues concerning the integration of new technologies?
12. How can we integrate technology to improve students' writing?
13. What kind of web-based activities do you use in teaching writing?
14. What is the impact of digital tools such as blogs and wikis on students' EFL writing?
15. Overall, what are the main advantages and disadvantages of digital technologies on EFL writing?
16. How do you think teaching writing will be different in the far future?

Appendix (6): Academic Writing Syllabus for the Experimental Group

Lectures	Web-based activities	Resources
<ul style="list-style-type: none"> • Introduction to the course syllabus. • Introduction to the writing process. • Pretest: Timed essay in 80 mins. 	/	/
<ul style="list-style-type: none"> • Instructions about web-based writing (blog, wiki, and Google documents). • Setting up a personal email and accounts on blog and wiki sites. 	/	PPT/Blog/Wiki/Email
Lecture 01: Academic Style (Formality in English Academic Writing)	Activities 01 & 02: Reducing the informality of sentences. Activities 03 & 04: Identifying formal and informal aspects, and writing formal sentences.	PPT/Email
Lecture 02: Considerations in Academic writing (audience, organization, purpose, flow)	Activities 01 & 02: Determining the appropriate academic expressions Activities 03 & 04: Formalizing colloquial language.	PPT/Email
Lecture 03: Paragraph Writing	Activities 01, 02, 03: Evaluating the topic sentence, supporting sentences and concluding sentence of paragraphs. Activities 04 & 05: Writing short paragraphs for different topics.	PPT/Email
Lecture 04: Writing Thesis Statements	Individual Blog Activity 01: Writing an individual essay using the thesis statement for one of the topics provided. Group Wiki Activity 02: Writing a collaborative essay using the thesis statement for one of the topics provided.	PPT/Blog/Wiki
Lecture 05: Academic Essays (Expository/ Analytical /Argumentative/ Compare & Contrast Essays)	Individual Blog Activity 01: Writing an individual argumentative or compare & contrast essay on one of the topics provided. Group Wiki Activity 02: Writing collaboratively an argumentative or expository essay on one of the topics provided.	PPT/Blog/Wiki
Lecture 06: Follow up to Academic Essays (Descriptive/ Narrative/ Cause& Effect Essays)	Individual Blog Activity 01: Writing an individual descriptive or narrative essay on one of the topics provided. Group Wiki Activity 02: Writing a collaborative cause & effect essay on one of the topics provided.	PPT/Blog/Wiki
Lecture 07: Paraphrasing, Summarising and Quoting	Activity 01, 02 & 3: Paraphrasing and summarizing short texts.	PPT/ /Email
Lecture 08: Writing Academic Reports	Individual Blog Activity 01: Writing an individual academic report about a topic of one's choice while taking into account the given instructions.	PPT/ Blog/Wiki

	Group Wiki Activity 02: Writing a collaborative academic report about an interesting book.	
Lecture 09: Writing Letters	Individual Blog Activity 01: Writing an individual motivation letter for a scholarship. Group Wiki Activity 02: Writing a collaborative application letter for an interesting company.	PPT/ Blog/Wiki
Lecture 10: Critiques Writing	Individual Blog Activity 01: Writing an individual critique for a creative work such as (movies, TV drama series, music, etc.), taking into account the given instructions. Group Wiki Activity 02: Sharing and analyzing collaboratively a critique which evaluates an interesting creative work, while taking into account the given instructions.	PPT/ Blog/Wiki
Lecture 11: Writing Literary Analysis	Individual Blog Activity 01: Writing an individual literary analysis to a work of fiction, poetry, or drama. Group Wiki Activity 02: Sharing and analyzing collaboratively a particular literary analysis while taking into account the given instructions.	PPT/Blog/Wiki
• Posetst: Timed essay in 80 mins.	/	/

Appendix (7): Guidance for Students' Online Feedback

These questions would guide you to write a feedback on your peers' writings

1. What do you think of the format (is the title centered, is the first line of every paragraph intended, are there any margins on both sides, are there double-spaces between lines)?
2. What do you think of the capitalization, spelling and punctuation?
3. What do you think of the used grammar? (verb tenses, articles, pronoun agreement, subject –verb agreement, sentence structure and fragments..., etc.)
4. What is your opinion about the topic sentence? Is it stated clearly?
5. Is the content clear? What parts of writing you do you find unclear?
6. What do you think of the organization of ideas in a paragraph and the organization of the three parts: introduction, body, and conclusion?
7. If there is an introduction or a conclusion, what do you think about them?
8. What is your opinion about the supporting evidences that the writer uses?
9. What is missing in your peer's writing? Is there anything that should be added?
10. Is there any irrelevant addition or information to the topic?
11. What do you think of the coherence? Does the writer make a good use of cohesive devices?
12. Which part of writing do you find interesting?

Appendix (8): Pre-Test & Post-Test

Pre-Test

Write an argumentative essay about the topic below. You should provide your response in a well-written, comprehensive essay: Introduction, body, and conclusion paragraph. Make sure to use good grammar, correct spelling and punctuation. You will have 80 minutes to write the composition.

“Is it necessary for parents to send their children to school at a young age? Some parents support the idea of sending their children to pre-schools, while others disagree? What are your opinions? Support your opinion with evidence and strong arguments.”

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Post-Test

Write an argumentative essay about the topic below. You should provide your response in a well-written, comprehensive essay: Introduction, body, and conclusion paragraph. Make sure to use good grammar, correct spelling and punctuation. You will have 80 minutes to write the composition.

“Compose an essay in favour of or in opposition to the claim: distance learning programs are superior to traditional teaching methods. Which teaching method do you think is more effective? Support your opinion with strong arguments and evidence.”

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Appendix (9): Experimental Group's Post-test Questions

1. How do you feel about the use of blog and wiki in EFL writing instruction?

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2. In what ways do you think the use of digital technologies and web-based activities helped you to improve your writing skills?

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3. What is your opinion on the integration of technology tools (such as PowerPoint application, LCD projector, email, Moodle, etc.) in EFL writing instruction?

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4. What do you think about the feedback offered by your peers and the teacher on your web-based writing activities?

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5. Have you faced any problems when doing your web-based writing activities? If yes, what kind of challenges have you faced in technology-enhanced writing instruction?

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Appendix (10): Analytic Writing Rubric (AWR)

Rating	Content	Organization of Ideas	Language	Style
Excellent (05)	<ul style="list-style-type: none"> • Very clear and well-developed content that is related to the topic. • Using clearly supporting explanations. • Displaying an excellent consideration of purpose and audience. 	<ul style="list-style-type: none"> • The main idea or the thesis is clearly and convincingly stated. • Well organized and developed ideas. • Displaying an excellent consistency, unity, coherence and progression. • Excellent use of explicit transitions. • Very logical sequence within the essay paragraphs. 	<ul style="list-style-type: none"> • Excellent use of language. • A very good use of syntactic variety, appropriate word choice and idiomatic language (may have minor grammatical errors). • A very good use of spelling and punctuation. 	<ul style="list-style-type: none"> • An impressive control of style that demonstrates originality and creativity.
Good (04)	<ul style="list-style-type: none"> • A clear developed content that is related to the topic. • Using supporting explanations. • Displaying a good consideration of purpose and audience. 	<ul style="list-style-type: none"> • The main idea or the thesis is well stated. • Organized and developed ideas. • Displaying a good consistency, unity, coherence and progression. • A good use of explicit transitions. • Appropriate logical sequence within the essay paragraphs. 	<ul style="list-style-type: none"> • A good use of language. • A good use of syntactic variety, appropriate word choice and idiomatic language (have insignificant grammatical errors). • A good use of spelling and punctuation. 	<ul style="list-style-type: none"> • A good control of style that displays originality and creativity.
Average (03)	<ul style="list-style-type: none"> • Fairly clear developed content that is related to the topic. • Using satisfactory explanations. • Displaying a fair awareness of purpose and audience. 	<ul style="list-style-type: none"> • The main idea or the thesis is fairly stated. • Satisfactory organized and developed ideas. • Displaying a consistency, unity, coherence and progression. • A satisfactory use of explicit transitions. 	<ul style="list-style-type: none"> • Satisfactory use of language. • Satisfactory use of syntactic variety, appropriate word choice and idiomatic language (have few grammatical errors). • A satisfactory use of spelling and punctuation. 	<ul style="list-style-type: none"> • A satisfactory control of style that displays originality and creativity.

		<ul style="list-style-type: none"> Fairly appropriate and logical sequence within the essay paragraphs. 		
Poor (02)	<ul style="list-style-type: none"> Poorly clear and developed content that is irrelevant to the topic. Using dissatisfactory explanations. Displaying a poor consideration of purpose and audience. 	<ul style="list-style-type: none"> The main idea or the thesis is barely stated. Poorly organized and developed ideas. Displaying a poor consistency, unity, coherence and progression. A poor use of explicit transitions. Less appropriate and logical sequence within the essay paragraphs. 	<ul style="list-style-type: none"> A poor use of language. A poor use of syntactic variety, appropriate word choice and idiomatic language (have many grammatical errors). A poor use of spelling and punctuation. 	<ul style="list-style-type: none"> A poor control of style that lacks display of originality and creativity.
Very poor (01)	<ul style="list-style-type: none"> Very Poor development of content that is barely clear and irrelevant to the topic. Lack of explanations and evidence to support ideas. No attempt to consider audience and purpose. 	<ul style="list-style-type: none"> The main idea or the thesis statement is unclear. No organization and development of ideas. Displaying a pointless consistency, unity, coherence and progression. No use of explicit transitions. Inappropriate and illogical sequence within the essay paragraphs. 	<ul style="list-style-type: none"> A very poor use of language. A very poor use of syntactic variety, appropriate word choice and idiomatic language (have numerous grammatical errors). A very poor and dissatisfactory use of spelling and punctuation. 	<ul style="list-style-type: none"> Hardly any control of style that does not demonstrate any originality or creativity.

Appendix (11): Sample Screenshots of Web-based Writing Activities on Gmail

Saïdi Nada G02 (lecture3, tasks 9,10,11,12,13,14) ☆ ☰ ☰
File Edit View Insert Format Tools Extensions Help Last edit was made on November 13, 2018 by pure soul

(i) To Err is Human. (All humans commit sins and mistakes) (All humans make errors).
(ii) Life in the Town is better than Life in the City. (One of the biggest debates humans have is whether town life is better than city life or vice versa) .
(iii) The Food I like Best. (My favorite food.)

Task 12: In the following exercise, we have given you a topic sentence, the title, as well as some notes which might help you develop a paragraph. As you develop your paragraph, use only those points which will support the topic sentence and leave out the rest. Your paragraph should not be more than 100 words.

The secret of the Cockroach's Survival!

Topic Sentence: The cockroach is one of the earth's oldest creatures, older than even the dinosaur. It survived because it can live anywhere. Cockroach is a clean insect, usually black or brown in color, it can eat almost anything, including flower buds, paint, soap, wood. But it can even live without food and water for months. Cockroach can live in cold and warm climate.

Task 13: The following sentences go together to form a complete paragraph but they are in the wrong order. Keeping in mind the idea of coherence, put them in the right order.
Many insects rely upon the direction of the sun's rays as a sort of compass. This can easily be demonstrated by a simple experiment. First, place a light-tight box over an ant carrying food back to its nest, and keep it imprisoned for a few hours. Second, when the box is removed, the ant will not continue on its former course, but will start off rapidly in a new direction, and this new route will differ from the old by exactly the angle that the sun has shifted across the sky during the time the ant was imprisoned.

Glossary
former - earlier, previous

AllDoun.tasks 01,03,04 (lecture01) ☆ ☰ ☰
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- Use Rhetorical question: so who is..
- Use of strong argument : Have it!

There are also a number of features of formal language. Can you identify them? (with examples)

features of formal language:

- passive voice: can't be blamed
- Nominalization: unemployment, losses, increase..

Task 04: Revise these sentences to state their meaning in fewer words.

1. There are several studies in epidemiology that have shown that when people consume alcohol in moderate amounts they have a lower risk of developing heart disease in comparison to those people who drink a lot of alcohol.
◆ Several studies in epidemiology have shown that moderate consumption of alcohol lowers the risk of developing heart disease.
2. At this point in time we can't ascertain the reason as to why the screen door was left open.
◆ Now we don't know the reason as to why the screen door was left open.
3. Many uneducated citizens who have never attended school continue to vote for better schools.
◆ Many uneducated citizens continue to vote for better schools.
4. In spite of the fact that Bradley Hall is regularly populated by students, close study of the

AllDoun.tasks :05,06,07,08 (lecture02) ☆ ☰ ☰
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Task 06: Supply a more academic word or phrase for the one in *italics* in each sentence.

1. The reaction of the officials was *approximately* negative.
2. The economic outlook is *perfect*.
3. The future of Federal funding is *high*.
4. America's major automakers are planning to *meet* on the research needed for more fuel efficient cars
5. The resulting competition between countries is *better*.
6. The economy is affected by *factors* that happen outside the country.
7. She was *given* the sack because of her poor record.
8. The examination results were *greater*.

Task 07: Suggest alternatives to the following to avoid use of personal language.

- 1 In this essay I will discuss the main differences between the English and Scottish legal systems.
This essay includes a discussion of the main differences between the English and Scottish legal systems.
- 2 I have divided my report into five sections.
Five sections were put in that report.

Yassa Dja Lecture 03- Paragraph Writing

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Lecture 03: Paragraph Writing

Task 09: The topic sentence of the paragraph below is hidden somewhere within the paragraph. Find it and place it in the correct position.

"In Mother's Shadow": Nothing could be more important to the development of an infant Indian langur than its relationship with its mother. (correct position of TS) During its early weeks, it depends almost completely upon her, and she, in turn, fastens her attentions upon it, although from time to time she will allow the other females to hold and fondle it. Sheltered by its mother, the growing infant gradually widens its contact with the outside world. Though its first week is spent sleeping and nursing, by its second, it is already stumbling about and being restrained and of the tail or leg. Nothing could be more important to the development of an infant Indian langur than its relationship with its mother. (wrong position of TS) At four weeks, on unsteady feet, it ventures forth and discovers the world or at least that part of it within a safe three or four feet of its mother.

Glossary
fastens her attentions upon it: fixes her mind on it by watching it or listening to it
fondle (v): sucking milk from the mother's breast
stumbling: walking on unsteady feet
restrained: held back
ventures (v): a sudden, sharp pull
infers: a very young creature
ventures forth: takes the risk of going forward

Task 10: Is there a topic sentence in the following paragraph? Underline it, if it is there. If you don't find a topic sentence, state the main idea of the paragraph in your own words.

Men have cleared away forests to make fields for growing crops. They have moved mountains to make room for roads and cities. They have built huge dams across rivers to turn valleys into lakes, and they have built dykes to push back the sea and create more dry land to live on. Once everyone cheered at the progress that man made in changing his environment like this, but now many people are worried by the problems that such changes can bring. When the Aswan Dam

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Feltan Hassiba Lecture 01 Felt Hass - Felt Hass 11/20/18

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experience. For this reason, you need to reflect upon and analyse your own reactions to the task of writing. That is to say, the task will become more manageable if you learn how to cope with your own particular ways avoiding putting off the moment when you must put pen to paper" (Taylor 1989, p. 3).

Summary:
Most people feel a great deal of anguish when faced with writing tasks, even experienced writers. This response can be managed by recognising and coping with personal avoidance strategies (Taylor 1989, p.3).

Paraphrase the following text.

Traditionally, in oral and written discourses, the masculine pronoun 'he' was used as a pronoun to refer to a person whose gender was unknown or irrelevant to the context. Recently, this usage has come under criticism for supporting gender-based stereotypes and is increasingly considered inappropriate (Smith, 2010, p. 24).

paraphrasing:
If the gender of a person was not known or was unimportant to the meaning of oral or written tasks, it was customary to use the masculine form of "he" when a pronoun was required; however, there has been growing concern about this practice in modern usage because it appears to privilege stereotypes based on gender (Smith, 2010, p.24).

Task 18: Read the quotations below and then decide which is the better paraphrase, (a) or (b).

"most of the shops are closed because of the bad weather conditions".¹
 b. *Since the weather is terrible, the grocery stores are not open*

In short, adoption is a ubiquitous social institution in American society, creating invisible"²
 "relationships with biological and adoptive kin that touch far more people than we imagine
 b. *Adoption touches a surprising number of people throughout American society*
 answer b

Some argue that the approximately 11 million undocumented immigrants in the United States"³
 ought to receive a path to US citizenship, while others claim that these immigrants need to be
 "deported back to their home countries
 b. *Although some individuals maintain that undocumented immigrants should go back to their countries, others defend these immigrants' right for a path to citizenship*

AGGO Hantasks 15,16,17,18 (lecture 4) ☆ @ ① ②

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Lecture 04: Paraphrasing, Summarising and Quoting

Task 15:

The growth of the car industry parallels the development of modern capitalism. It began in France and Germany, but ended in the US. There Henry Ford adapted the moving production line from the Chicago meat industry to motor manufacturing, thus inventing mass production. In the 1920s Alfred Sloan's management theories helped General Motors to become the world's dominant car company.

(a) Find synonyms for the underlined words.

The growth= The rise.
 car industry parallels the development of modern=Automobile industry.
 It began= It started
 ended=accelerated.
 adapted the moving production line= modified the moving assembly line
 meat industry= motor manufacturing= car manufacturing.
 inventing mass production= creating mass production.
 management=administration
 helped=aided
 dominant= common

paraphrasing the paragraph with Changing the word class of the underlined words:

The expansion of contemporary capitalism matches the rise of the automobile industry. After starting in Germany and France, it accelerated in the United States. There the moving assembly line was modified by Henry Ford from the Chicago meat industry to manufacturing cars; thereby creating mass production. General Motors dominated the world's car companies in the 1920s, with aid from the managerial theories of Alfred Sloan.

Task 16: Paraphrase and summarize the following text

Generative writing can still prove useful, as we explore options. They can help us to move beyond the fragments of a thesis by having several attempts at pulling them together. They allow us to write – briefly – about the whole thesis. They can help us to find the type of story that our thesis will tell.

Salemchaima. tasks 0102,03,04 (lecture 1) ☆ @ ① ②

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1. Expert Systems can *assist* the user in the diagnosis of problems.
 2. This program was *created* to improve access to medical care.
 3. Research expenditures have *increased* to nearly \$350 million.
 4. The use of optical character readers (OCRs) should *eliminate* the number of problems with the U.S. mail service.
 5. Researchers have *determined* that this drug has serious side effects.
 6. Building a nuclear power plant will not *reduce* of the energy problem completely.
 7. Researchers have been *investigating* this problem for 15 years now.
 8. This issue was *raised* during the investigation.
 9. Engineers can *create* *with* better designs using CAD.
 10. The emission levels have been *fluctuating*.

Task 02:deduce the informality of each sentence by substituting a single verb for the one in italics.

1. The implementation of computer-integrated-manufacturing (CIM) has *caused* some serious problems.
 2. The process should be *continued* until the desired
 3. Plans are being made to *provide* with a database containing detailed environmental information for the region.
 4. Subtle changes in the earth's crust were *provoked* by these new devices.
 5. Proposals to construct new nuclear reactors have *encountered* great resistance from environmentalists.

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Appendix (12): Sample Screenshots of Web-based Writing Activities on Blogger

Written Expression
Written Expression for Third Year English Students (2018-2019)

Welcome to Blogger

Welcome dear students!

The aim of using this blogger is to engage you in online writing. Several individual writing activities are posted here to help you improve your competency in writing, particularly in academic and formal writing. Online writing is utilized to help you write correct and effective paragraphs, state clearly topic sentences and develop supporting details in your writing, it helps you as well as to write different types of academic essays, formal letters, reports, literary analyses and critiques.

Overall, in this blogger, you are requested to do activities related to the following lectures:

- Thesis Statement
- Academic Essays (Compare & Contrast Essay)
- Academic Essays (Descriptive/ Narrative Essays)
- Letters
- Academic Reports
- Critiques
- Literary Analysis

Resultado de imagen para WELCOME GIF

Powerful Writing Websites

- A Guide to Grammar and Punctuation
- Quick-reference Guide to Writing
- Grammarly
- Purdue Writing Lab

Dictionaries

- Pronunciation dictionary
- Thesaurus
- Visuwords

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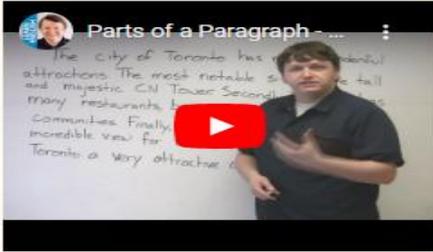
Written Expression for Third Year English Students (2018-2019)

Introductory Paragraphs

Write an introductory paragraph about your self

Make sure to write a good paragraph free of mistakes,

Have a look at this video which illustrates the main parts of a paragraph (the topic sentence, the body, the concluding sentence).



Powerful Writing Websites

- A Guide to Grammar and Punctuation
- Quick-reference Guide to Writing
- Grammarly
- Purdue Writing Lab

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Narrative and Descriptive Essays

Write an essay to one of these essay topics below. Your writing should be clear, coherent, organized and well developed.

“Focus on a moment in your life that is very significant (funny, embarrassing, journey, important learning experience etc.)”. Write your story about it.

Describe the most important character traits of your favorite teacher, or of your role model.

The first genre you will be exploring is a narrative essay. The intent of the narrative genre is to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences. Most of students complain that they do not know what to write about when assigned a narrative piece. It is suggested for you to think about a well remembered event; something that you can tell a good story about, using vivid language to describe the places and people and provide an indication of the event's significance.

The second genre you will be exploring is a descriptive one. Descriptive writing vividly portrays a person, place, or thing in such a way that the reader can visualize the topic and enter into the writer's experience. You should be able to describe every aspect surrounding your topic without discrimination. A good description should be able to bring the reader of your essay to the real happening of events. The reader should not question themselves or be left in suspense in a way; you should ensure that you exhaust your descriptions. Every point has to come out clearly in your writing. To come up with a good essay, you have to learn how to create a picture of what you are talking about in the reader's mind.

Here is a link to the site below which will give you some further information.

[LINK](#)

- [A Guide to Grammar and Punctuation](#)
- [Quick-reference Guide to Writing](#)
- [Grammarly](#)
- [Purdue Writing Lab](#)

Dictionaries

- [Pronunciation dictionary](#)
- [Thesaurus](#)
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The most significant, life changing experience I have ever had!

The moment of moments, as I like to call it. It might have not been so pleasant to undergo, yet after it came to an end, much was revealed, and certain feelings no longer existed, which meant a state of absolute peace and harmony. Everyone has a breaking point, this was mine!

It was dark, quite frustrating, and I was helpless. All signs of a killing depression were perfectly drawn every how and all where, upon the once bright and comforting roof, afterwards the opposite since the lights were off, and to make the perfect closure for a night that gloomy, sorrow worn his ugliest mask, put on his pitch black cloak, that is saved for the dearest of occasions, death ceremonies, and went swirling up and down, all around, he made a prey out of me, because i made it easier and much amusing for him. I went drowning with no resistance, for it had some sense of peace and a quiet emptiness, as I was being swallowed in, so I let go enjoying the symphony played by victorious sorrow, while he was waving goodbye. He dropped no tears, nor I was expecting any, because after all, a murder never feels grief over his victims!

Slowly eyes were closing taking a last glimpse, saying goodbye too..cold, it felt cold thoroughly, I guess that's how it feels like to farewell this world...defeated and cold! Then it found its way to me, a knight in shining armor, attempting to rescue me, I never thought I was worth rescuing, heroically reached out along the flow of what seemed to be a whirlpool of devastation, and pulled them hands up, I reacted back, for it somehow felt right, and as if I was being summoned for a second chance, a call to set all wrongs right, therefore I willingly responded.

My knight in shining armor turned out to be quite the surprising figure, and didn't fit its expected form, it was shining, but certainly wasn't a knight, and no armor was included too..it was simply a pen! A pen that has been thrown for two days, I passed by it earlier, neglected it, and once wondered why hasn't any one picked it up, then it became clear why, it was left vagabond, aimless, till its fate was determined, to fulfil my rescue mission, and it sure made all the difference that night. The minute my hands were attached to its pointed figure, each matter that ever carried that very night to be unforgettable..devastation, misery, sorrow, and the ultimate guest, depression, simply faded. Minutes later I introduced that wandering pen to its old friend and companion, a white refined paper..and I just wrote it off!..every thing that was aching was led out of what's under my ribs, and

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Sunday, March 17, 2019

A critique of a song; "lovely" by Billie Eilish & Khalid.

"Lovely" Criticism

By Meryem.B

March 7th, 2019.

*"This assessment is a **critical essay** on a creative work of **music production**. The song that I am going to work on is sung by the two American singers "**Eilish Billie**" and "**Khalid**", titled "**Lovely**". My critics of the song is based on **the content and the messages** of the song, **the production** that is to say; the musical performance as a whole, and based on **my own point of view**."*

*" oh, I hope
someday I will
make it out of
here...even if it
takes all night
or a hundred
year.. "*



"Lovely" is a song by two American singers/songwriters Billie Eilish and Khalid, it was released on April 26, 2018. The lyrics of the track find both singers attempting to surmount the sadness and depression drowning them. This tune was officially Eilish's second single of 2018. As for Khalid, it marked his second single for the year in question. In all the song is about overcoming depression by accepting it as it is, as it is the only way to live with it. So, are the

at February 26, 2019 1 comment

Job application letter (Yassamine DJA)

Yassamine Djaidja

ST Woroud
Ageria, M'sila, 2800
+21306592345

djaiyass@gmail.com

26th February 2019

Weekly Shōnen Jump

3 Chome-13 Kanda
Jinbocho,
Chiyoda, Tokyo 101-0051, Japan

Dear Ms.

I am writing to apply to the translator position advertised on your website www.viz.com/shonenjump. I was overjoyed to see your group launching an Arabic comic magazine; it would be an honor to be part of it and introduce more Arab youth to the world of comics.

I am fluent in Arabic, as it is my mother language, and I am competent in English, for I am currently a third year English student soon to graduate with honors. In addition, my passion for comics goes back to my teens; I have always loved reading comics and manga, so I am familiar with the ways language is used to add more to the picture and story. I also have experience with digital medium, graphics and drawing, so I can manage writing the translation directly and save the time of copying process.

Thank you for your time and consideration. I look forward to your positive response, it would mean the world to me.

Sincerely,

6 comments:

 **Khadoudj BEZAF** February 28, 2019 at 2:44 PM
A good application letter
But you have to give more details about yourself in order to convince them to give you what you want, you may talk about your successful transition for example in previous journal articles.....
Reply Delete

▼ Replies

 **Khadidja Badouche**  March 1, 2019 at 9:48 AM
thanks mate ,I will try to add more details
Delete

Reply

 **Sad .Nassima** March 10, 2019 at 6:37 PM
Good job Khadidja. But you forget to write your name in the end of the letter.
Reply Delete

▼ Replies

 **Khadidja Badouche**  March 28, 2019 at 4:39 PM
is it necessary ?
Delete

Reply

 **Mrs.Hamouma** March 24, 2019 at 3:44 PM
Write in the title of your letter the job /position that you are applying for.
write your name in the writer's address.
write the date.
write the recipient's address.

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- Narrative and Descriptive Essays
- Critique Writing
- Writing Academic Reports
- Literary Analysis

11 comments:

 **Anonymous** February 27, 2019 at 1:46 AM
Great job yessamine, Felt like you are applying for a real job offer. your Work is perfect as you have kept the right forma and the right language, as well as the right content; you made your position clear from the beginning and you gave your personal reasons for choosing this specific job without forgetting to mention your skills and capacities who makes you the most suitable candidate.
Reply Delete

▼ Replies

 **Yassamine Dja**  February 28, 2019 at 12:56 AM
Thaaank you
Delete

Reply

 **Brahim azzoug** February 27, 2019 at 8:11 PM
excellent work yessamina , carry on !
Reply Delete

▼ Replies

 **Yassamine Dja**  February 28, 2019 at 12:56 AM
Thank you
Delete

Reply

 **Ahlam tahri** February 28, 2019 at 5:41 PM
Very good
Reply Delete

 **Ahlam tahri** February 28, 2019 at 5:41 PM
Very good

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Written Expression ▾ **New post**  Using Blogger as Mrs.Hamouma All labels ▾ 🔍

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<input type="checkbox"/>	Job Application letter: Teacher Application	brahimi yassamina	2	2	2/26/19
<input type="checkbox"/>	Job Application Letter(Djouadi Nour El Houda)	Djouadi Nour el Houda	1	1	2/26/19
<input type="checkbox"/>	Job Application letter: New teacher Application (AGGOUNE Hanane).	AGGOUNE Hanane	6	1	2/25/19
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<input type="checkbox"/>	Application Letter For a job (Dounia_Alliou)	All.Doun	1	1	2/25/19
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<input type="checkbox"/>	Ami.Djh - (Application letter for a company job)	Ami.Djh	1	1	2/25/19

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L	Literary analysis of Hamlet by Shakespeare	Boughelam Youss...	1	1	in
L	literary analysis" success is counted sweetest" (bouchra khalfallah)	Bouchra khal	2	1	in
D	djafer toufik. literally analysis of the necklace.	Dejafer Toufik	1	0	in
L	Literary analysis of "The black cat" (Tahri Ahlem)	Ahiam tahri	2	0	in
L	Literary analysis (David Copperfield)	Aya Dh	1	1	in

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Sami Bou commented on "Academic Report: Sami Bou" May 30, 2019

Noted with thanks.
In Response to a comment by Mrs.Hamouma

Sami Bou commented on "Academic Report: Sami Bou" May 30, 2019

Thank you, I'll keep that in mind!

Mrs.Hamouma commented on "Academic Report" May 28, 2019

The deadline for this assignment is over

Mrs.Hamouma commented on "Academic Report (Baija Hafsa)" May 28, 2019

You are asked to present your own personal work.

Mrs.Hamouma commented on "Academic report : The effects of wikis on EFL third year students writing perfo..." May 28, 2019

It is an interesting topic, written in a good way. In the part of discussion you need to provide your own interpretation of the results, not to present again the literature review.

Mrs.Hamouma commented on "Academic Report(Bouchra khalfallah)" May 28, 2019

Include resources in your report, and add the part of discussion.

Mrs.Hamouma commented on "Academic report (The effects of anxiety on students' performance)." May 28, 2019

Good topic, you just need to pay attention to your language.
Re-write the methodology part, and the details about the questionnaire should be mentioned in the methodology part not ...

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Written Expression ▼

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Pay attention to your world choice and grammar, eg: I've come across* I have English degree* / I graduated from* on Job application letter khadoudj Yassamine Dja on 5/11/19

I've watched the movie many times but never considered its negative aspects, very well put indeed. You followed the right structure and your language is sound, though you might want to correct the punctuation mistakes. on A Critique of a movie,"Home Alone" by "John Hughes" Yassamine Dja on 5/11/19

nice movie choice, but you kind of retold the story instead of giving any strong criticism. on A critique of a movie "Oliver Twist "by David lean... (Ibtihal sellami G:02) Yassamine Dja on 5/11/19

I enjoyed watching this movie, and your critic is right on point. You followed the right structure and used simple language although not academic. You might want to add a clearer conclusion. on The critique of Room movie (Sai Nad) 1 replies Yassamine Dja on 5/11/19

a very interesting topic, and nicely written. Just one remark, don't use future tense in sating your methodology, use the part. on Academic Report. Sami Bou 1 replies Yassamine Dja on 5/11/19

Very clear and simple, nice work. I'd just point out that you missed the discussion of the findings and you did not answer your second research question. on THE IMPACT OF TRIJANCY ON STUDENTS ACADEMIC PERFORMANCE : A CASE STUDY OF SOME SELECTED SECONDARY SCHOOLS IN BARHOUM AREA. Yassamine Dja on 5/11/19

This is nicely written but I fail to see your thesis statement or you are exactly getting at. What you wrote is more of information about the Yassamine Dja on 5/11/19

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<input type="checkbox"/>	Nice go, but I think you focused more on the story and not the theme you are analyzing. try avoiding repetition of ideas. Greek myth" on Literary analysis (Pygmalion)	Yassamine Dja	on 5/11/19
<input type="checkbox"/>	the introduction is good, and I understand that your thesis is about the theme of the morality and immorality of human society, but your body is mixed, the whole essay should based on the thesis. You should not give the summary of the work, but you have to explain ,interpret,and support your thesis. And in the conclusion, you have to restate your thesis and major points. on Literary criticism"Tom Sawyer" Djouadin 1 replies.	AGGOUNE Hanane	on 5/10/19
<input type="checkbox"/>	Nice work , but avoid grammar mistakes. on Critique of movie "Titanic" by James Cameron.Khadoudj BEZAF	lin seghieur	on 5/10/19
<input type="checkbox"/>	Perfect ,but pay attention to the capitalization. on Job application letter khadoudj	lin seghieur	on 5/10/19
<input type="checkbox"/>	you literary analysis should focus just on one literary element ,for example on the theme of poverty , then you state your thesis on it. on Literary analysis (Oliver Twist)	AGGOUNE Hanane	on 5/10/19
<input type="checkbox"/>	actually ,you doesn't follow the steps of writing a literary analysis. First, you shouldn't use the title of the work, but you have to create one. Second, your analysis should look at one literary element such as conflict, plot, character,etc. Third, your introduction should include a clear thesis statement ,and in the body you have to support your thesis and present your evidence, and in the conclusion restate your thesis and major points. You should not give the summary of the work. on Literary analysis "The story of The Legacy" by Virginia Woolf (Dounia_Alioui) 1 replies.	AGGOUNE Hanane	on 5/10/19
<input type="checkbox"/>	Is well organized report , because you follow all the steps , but you have to mention the resources to avoid plagiarism. on Academic report , Khadoudj BEZAF	lin seghieur	on 5/10/19

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<input type="checkbox"/>	in response to actually ,you doesn't follow the steps of writing a literary analysis. First, you shouldn't use the title of the work, but you have to create one. Second, your analysis should look at one literary element such as conflict, plot, character,etc. Third, your introduction should include a clear thesis statement ,and in the body you have to support your thesis and present your evidence, and in the conclusion restate your thesis and major points. You should not give the summary of the work. , by AGGOUNE Hanane .	Mrs.Hamouma	on 5/25/19
<input type="checkbox"/>	A very impressive analysis, you focused on Okonkwo's personal characteristics that led to his fate, you analysed in details his way of thinking, behaviors and traits. Plus, you supported your arguments with textual evidence from the work, and this made your analysis convincing. Overall, it is a good work, you just need to check some slight mistakes in your writing. on Literary analysis: Analyzing the Character of Okonkwo in Things Fall Apart.(AGGOUNE Hanane)	Mrs.Hamouma	on 5/25/19
<input type="checkbox"/>	Try your best to correct the grammatical, spelling and punctuation mistakes in your draft. Actually, your writing is full of mistakes. Paragraph three should be changed to become paragraph four, and paragraph four should become paragraph three, because you should be giving a summary of the work first before you move to evaluate it. on Literary analysis, Oliver Twist (Khadoudj BEZAF)	Mrs.Hamouma	on 5/25/19
<input type="checkbox"/>	Well, this seems more as a summary than an assessment. Paragraph one and two should be linked together because the two are considered introduction, paragraph three and four should be also linked together because the two provide a summary to the work. What is left is paragraph five and six which as well should be linked together as you intended here to provide some comments about the work. So, we see there is no evaluation at all, and actually from the beginning you did not state your thesis. You just introduced the work and moved on to summarize it. Try to modify it as soon as possible, and pay attention that there are serious mistakes in it to be corrected. on Literary analysis (Memory of the body) zong kh	Mrs.Hamouma	on 5/25/19
<input type="checkbox"/>	You need to work on the spelling and grammatical mistakes. You can't start the first body paragraph by "moreover" because you are actually starting a new idea. Limit your content on one focus either evaluating the style or the theme. on Literary analysis of shakespeare's sonnet 29	Mrs.Hamouma	on 5/25/19

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	khadoudj BEZAF	khadoudjbezaf@gmail.com	Author ▾	×
	Boughelam Youssouf	boubou.youcef@gmail.com	Author ▾	×
	Khadija Badouche	badouchekhadija@gmail.com	Author ▾	×
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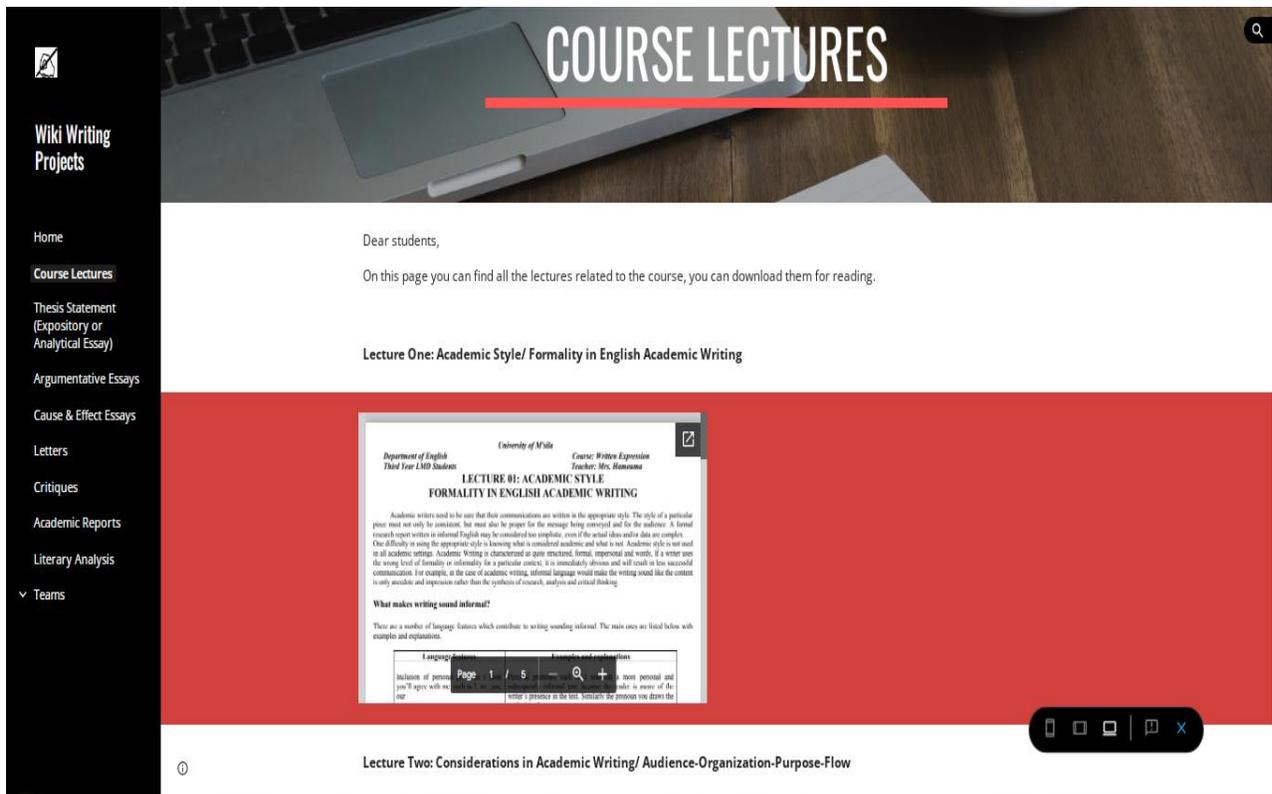
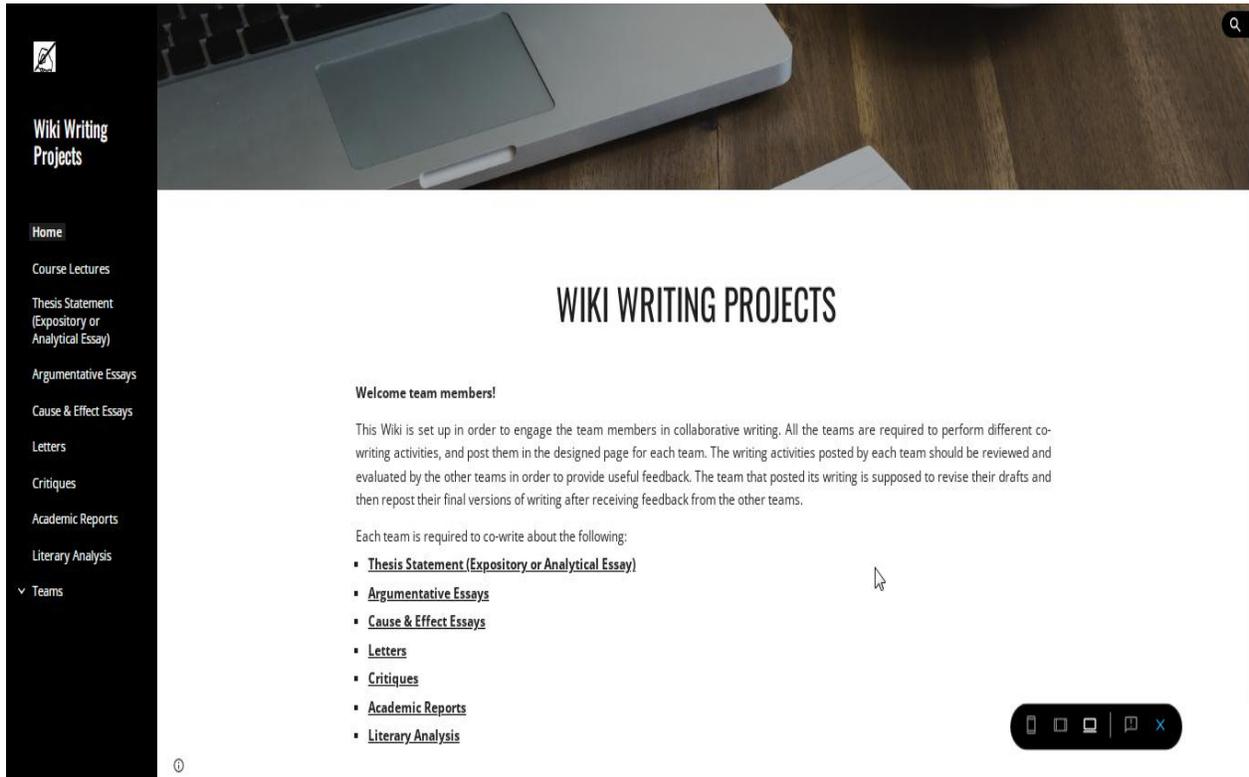
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Appendix (13): Sample Screenshots of Web-based Writing Activities on Wiki





Wiki Writing Projects

- Home
- Course Lectures
- Thesis Statement (Expository or Analytical Essay)
- Argumentative Essays**
- Cause & Effect Essays
- Letters
- Critiques
- Academic Reports
- Literary Analysis
- Teams

Start

ARGUMENTATIVE ESSAYS

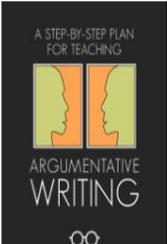
The purpose of an argumentative essay is to firmly declare a specific position on a particular issue or cause and to provide multiple reasons, backed up by supporting evidences and facts, for why the reader should change their way of thinking or adopt the author's point of view.

Taking into consideration what has been discussed in class about argumentative writing, write an essay for the following topic.

Do you believe that human beings are born equal? Write an essay either in support or against the claim?

Your argumentative writing should be effective. The arguments you use must meet certain criteria so that they can influence the reader. Therefore, a thorough assessment, strong supporting evidences and convincing language are necessary in you writing.

If you go to [THIS LINK](#) you can listen to a PODCAST related to teaching how to write argumentative paper. Listen to it and then start you writing







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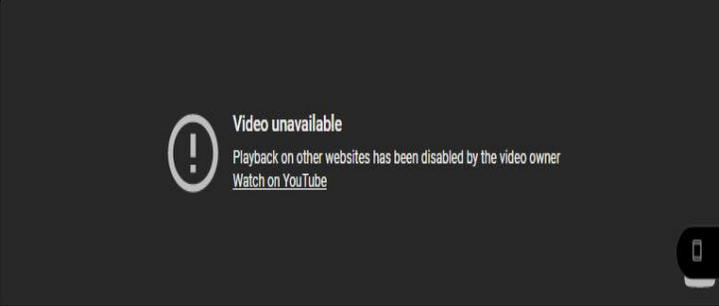
CAUSE & EFFECT ESSAYS

The purpose of a **cause and effect** essay is to determine the cause and effect of various actions, phenomena or situations. This type of essay requires the writers to deploy their analytical writing skill, as well as cognitive reasoning ability with the overall intent of taking a more in depth look at specific event, occurrence, situation or element and determining what effects that might have on something. For example, what effects does social media have on the way people communicate.

Taking into account what has been discussed in class about cause and effect essay, write an essay for the following topic:

What are the main causes of poverty and what effects does it have on societies?

You may watch this video to get more insights about this writing genre.





LITERARY ANALYSIS

For this assignment, you are required to choose a **"short literary analysis article"** made about one of the literary works, and write about your own evaluation of the article. Try to follow these steps in writing your essay:

- I. Background information of the chosen literary analysis article and the literary work that it evaluates
 - A. Information about the article
 - 1. Title
 - 2. Author
 - 3. Publication information
 - 4. Statement of the author's purpose
 - B. Thesis statement indicating your main reaction to your chosen article
- II. Summary or description of the article
- III. Interpretation and/or evaluation
 - A. Discussion of the article's strength areas
 - B. Discussion of the article's weakness areas
 - C. Effectiveness of the article
- III. Conclusion
 - A. Restatement of your thesis.
 - B. Summary of the major analyzed points
 - C. Summary of the main given comments
 - E. Suggestions and recommendations

TEAM ONE

Welcome to Team One Writing Space !

The team members:

- Yasmine Djadja
- Hiba Magri
- Heriz Chaima
- Djouadi Nour Elhouda
- Bensalem Malika
- Bouabdallah Meryem
- Brahimi Hiba

Expository Essay: Abortion

We are living in a time that does not shy from addressing sensitive issues or shedding lights on personal social norm, which would have been a taboo in old times. One of these issues that took utmost importance from people all around the world, and has been storming in social media and news, is abortion.

Abortion is defined by World Health Organization (WHO) as "pregnancy termination prior to 20 weeks' gestation or a fetus born weighing less than 500 g." Meaning that abortion happens when a fertilized egg or embryo is removed from the uterus (womb) in the first weeks of pregnancy. Sometimes an egg or embryo is lost naturally, this is known as spontaneous abortion or miscarriage. In contrast, Induced Abortion is the deliberate end of pregnancy, which is commonly known simply as abortion. Abortion is not a new practice, it has been a part of human society for ages, but its methods have developed significantly in late years.

Historically, abortions have been attempted using herbal medicines, sharp tools, forceful massage, or through other traditional methods. Nowadays, abortion methods are classified under two categories, surgical and non-surgical. The surgical methods are mainly three. One is vacuum aspiration abortion where a tube is gently inserted into the womb through the cervix. The contents of the womb are sucked out through this tube. Another is dilatation and evacuation, dilatation and curettage; in this the woman's cervical canal is enlarged with tools called dilators. When the canal is sufficiently enlarged the womb is emptied by suction, or by having its contents scraped out with a tool called a curette. And finally, partial birth abortion also called "intact dilation and


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 - Team Two
 - Team Three
 - Team Four
 - Start Team Five

Motivation Letter: Study Scholarship

Yassamine Djaidja

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 +21306592345
 djaiyass@gmail.com

St. John's University

8000 Utopia Pkwy, Jamaica,
 NY 11439, USA

27th February, 2019

Dear Sir or Madam,

With this letter, I would like to express my interest in studying at the University of St. John to pursue masters in English Literature.

I am currently studying License's Degree program in English Literature and Civilization at the University of Muhammad Boudiaf in Algeria. I was delighted to find out from your website that your International Students Support program covers my area of interest. I have decided to apply for this program because I am sure it would strongly enrich my future studies and help me in my prospective career. Moreover, I consider this program as a great opportunity to get in touch with American culture and educational system.

I have chosen to apply for University of St. John, because I really like the various modules it offers. Many of the modules offered are unique for me, because there is no equivalent at my home university. Additionally, I am impressed by the number of the possible side activities the students can apply to. I especially like Poetry Club, since I write poetry it would be a valuable ground to grow under constructive criticism. The third main reason why I have chosen St. John University is its renowned research team and teaching body, the opportunity to be taught by some of the best and most contributing professors in the field is something I would most cherish.

I would very much like to get my masters degree from the University of St. John. This would give me a better chance to deepen my literary knowledge in the inspiring, creative, and cosmopolitan environment of one of the long lasting American universities.


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Argumentative Essay: Are Humans Born Equal?

One of the ideas which stimulated the great modern social movements and revolutions, and was taken up in modern constitutions and declarations of human rights is the idea of human equality. Locke (1690) argued that all human beings have the same natural right to both (self-)ownership and freedom. Rousseau (1755) declared social inequality to be a virtually primeval decline of the human race from natural equality in a harmonious state of nature. But is it necessarily true to say that all human beings are born equal just for the virtue of being human? Of course not, there are more things that characterize human beings other than them belonging to the same species. In the end no two humans are truly born equal.

Various factors, that are as random as the alignment of DNA in our genes, attribute to the creation of different sects of people and different individuals from birth. In this sense, our lives and circumstances from the onset are unequal. To begin with, and from a biological side, humans are born with different DNA fingerprints that would determine their physical build, strength, gender, and all body traits that in real life would either be advantageous or disadvantageous. This gives every newborn an endowed ability to face the world in different degrees, putting them on unequal grounds. Take for example the mental capacities. It is clear just by looking at the varying results in academic achievements between students that their mental capacities are not the same, this might not be due to their work only but also to how much their minds are capable of processing and understanding. [Genome Wide Association Studies](#) or GWAS, an approach that has been used to determine genes responsible for IQ, works on the basis that we all have different genes and that not even twins can have the same intelligence capacities. This proves that we are not born equal in intelligence.

Looking at the issue from a more external side, we find the different environments that a human is born into are in themselves unequal. Many things are determined at the moment of birth of a human that are outside his control; his name, his gender, his country, his race, and even his religious belongings. And as we are all born in different environments we are born to be unequal outside and inside them. Let's take one case related to culture that shows the inequality of human life based on birth alone, and this case is bastard children. The birth of a person outside of marriage is a reality in most societies. Some societies are learning to accept this phenomenon; however, most societies still consider it stigmatized, naming the child bastard or love child. When such distinction is made from other children inequality appears, those unfair names given to them before they realize so, unequal view and treatment. Though these types of inequality are far from being fair or morally right theoretically speaking but they are a reality in the world we are living in; one which cannot be ignored.

On another social angle, not all newborn are well tended to financial differences in different families. Food and Agriculture Organization of the United Nations estimated that very year nearly 11 million children living in poverty die before their fifth birthday. These children did nothing wrong but be to born in a pit of poverty, while on the other hand children born in better situations are less likely to die of starvation; ironically enough death caused by obesity could be the end of many of them.

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Still, we're not all equal. But in this society, we love to claim everyone is equal. We are confusing equality with rights. We should all have the same rights, but we should not claim we are all born equal.

Cause and Effect Essay: Poverty

Poverty is a general scarcity or the state of one who lacks a certain amount of material possession or money. It is a multifaceted concept, which includes social, economic, and political elements. Poverty is a devastating problem of global proportions, so we need to know the causes of poverty and its effects.

A very large number of peoples around the world are living in poverty because of many different reasons. Firstly, the overpopulation: so when you have so much of population, you will have the more of mouths you need to feed. Here the government cannot achieve the alimetary balance between the rapidly rising of population and the national income.

Secondly, many people who lack of education or skills find difficulties to find the well-paid jobs, so it is so difficult to afford their living conditions. Moreover, sometimes things happen in people's life unexpectedly such as: natural disaster, wars, or economic fall; here suddenly the poverty enter the door. Also when people became disable because of sickness or accident may cause lifelong injuries, job loss, and poverty.

Thirdly, economic forces and change in labor requirements also cause poverty. The inflation contributes to poverty by reducing the amount of goods that given amount of money can buy. People whose income fall to keep pace with prices can afford less and less. Also forcing business to lay off worker and advances in technology may cause unemployment and poverty among workers whose job are taken over by machines. In addition, women who have been widowed, divorced mostly become poor. It is because they lack of education, job, experience, or skill they need to support themselves and their children.

Finally, one of the biggest causes of poverty in most of countries is the wars and conflicts, which lead to material and human destruction. Also the corruptions of governments and social inequalities. Most directly, corruption inhibits development when leaders help themselves with money that otherwise would be used for development projects to those they serve.

Poverty negatively affects individuals and families, and mostly affects children. Many people are suffering from hunger, from the lack of basic human needs such as adequate and nutritious food, clothing, housing, clean water, and health services. Children are unable to have an access to schools, they even not know how to write or how to read. They are unable to see a doctor when they are sick. Individuals in poverty are likely to suffer from poor, mental, and physical health because of employment. Some people abuse alcohol, incuueea. we recommende the author to respect all the sections or writing snort reports, as no section is more important than the other one as they compromise each other. And that is if he seeks to have reliable and convenient work.

Literary Analysis Assignment

The selected analysis: https://www.bachelorandmaster.com/britishandamericanpoetry/the-tyger.html#_XNs4yXko80M

The analysis Review:

"The Tygre" is a poem by William Black published in 1794 as part of "The Song of Experiences". This poem has been analysed by the literary writer Kamla Nath Sharma. Sharma is an Indian engineer, an international expert in physics, and an author of research papers on scientific subjects. Thought he is interested in scientific topics, he has written different satires and stories in hindi language, and one of his works is the Black's the tygre critical analysis in which he focuses on the symbols in this literary work. So what is his point of view? and how does he present it?

Sharma started his analysis with a brief introduction of the poem; he thinks that this work is based on personal philosophy of spiritual and intellectual revolution by individuals. Though the speaker in the poem is puzzled at the sight of a tiger in the night and asks the questions about its appearance and his creator, the context was interpreted according Black's philosophy of symbolism about human life and spiritual revolution.

On the other hand, the writer analysis the materials by which the tiger is created by god: fire, furnace, hammer, and clain. This is what presents the power of god, his supreme imagination, spirituality and ideals.

The forest is another symbol that presents the corrupted social conventions which tries to suppress the good human potentials, and this symbol is taken from "The Song of Experience" which means the adults world of corruption, immortality and suffering. Additionally, Sharma advices the readers to be inspired by the creation of the tiger as creative agents which free the common men's minds, hearts and souls from this corrupted society.

In conclusion, Kamla Narth Sharma presents a good an interesting analysis to one of the most mysterious poems, by analyzing the main symbols of the poem one by one and by using simple language. However, there are some ambiguous critics within his analysis as he could have used quotations from the poem to better clarify his ideas. The analyzer did not focus on the title of the poem "The Tygre" but rather on the origins of the poem which is "the songs of experience", which he should have since he analysed the symbols. The title itself is a symbol.

Report analysis

This essay is an analysis of a short report written by Mohammad Islam. It is titled "Report on the Possibility of Opening a Short Course in English" and was sent to Uttara University in Bangladesh. The purpose of the report is to propose the opening of a short course in English under the direction of Uttara University English Teachers. Whereas the purpose of the essay is to criticize this report. The essay will discuss the main weaknesses and strengths of the work, covering both the analysis of form and content.

But first, let's look at the report as a whole. The report discusses the possibility of opening a short course in English under the direction of English teachers. It discusses the need of students for such a course to enable students to improve their English language. Because about 80% of them are well below average, lacking precision in their writing and speaking skills. It is mentioned that these students value the idea of the course immensely. Also, these short courses will help students, non-students and even professionals which highly recommends the university to finance the programme as early as possible.

Through the analysis of the report's format, we conclude that the work didn't respect all the sections of writing a report. Although it contained an introduction, a discussion, a conclusion, and a recommendation section, yet it contained neither a summary nor an appendix. A short report is usually written to inform the authority concerned or specific readers about a specific matter. Thus, without a summary, which concludes all the subject for the concerned authority, the report will remain of mediocre quality. And without an appendix, witch supporters your results, your report will be unreliable.

The purpose behind this kind of report is to inform with factual material. By evaluating the means by which the author has accomplished his purpose, we will determine whether he has respected all the steps in conducting this kind of reports. We will comment on each section of this report, discussing at once its weaknesses and strengths.

First, the introduction section contained the main aspects, from the background of the subject to the answering of the following questions: What are you going to do? Why are you interested in this subject? Why is this subject worth studying? The introduction also provided an overview of research questions and assumptions; however, it does not include key terms and definitions, it does not answer the question why do you do this research and what methods did you use?

Second, the discussion section. As we already said, the purpose of this report is to inform. By analyzing the component of the report's discussion section, we conclude that the author has had his material presented clearly, accurately, and with order and coherence. He informed the concerned authority of his problem providing at once facts and supporting data for his findings. He also provided references (the students) to highlight that the problem is basically, a student's need problem to be solved.

Third, the conclusion; The findings are conclusive to a far-researching extent and they uncovered new questions (Are these courses enough to fill the lacks of students?)to be extended or explored in future research. The most important things are the practical

Appendix (14): Interview Transcripts

Interview Transcript of Teacher (A)

1. To what extent do you think it is important to incorporate digital technologies in EFL tertiary context?

No one can deny that digital technologies in EFL learning or in learning in general whether at secondary, primary or tertiary context is so important. It is in fact quite important to use all possible technological means, because these ICTs are amongst the possibilities that might faster or foster the learning of EFL writing skills among students.

2. Are you comfortable in using these technologies?

Well, let I say sometimes it is not a matter of comfort, well new technologies in class or in language classroom depend on the context. Perhaps in certain subjects or contexts we did not have enough space, enough media, or digital technologies to use them. Technologies or new technologies are dependent on the subject and the availability of these technologies within the learning institution.

3. What is your students' reaction when it comes to using new technologies in classrooms?

Let me say there is a saying in English and in other languages that variety is the spice of life. The use of new technologies in class is something related to variety. The more there is variety in the modes of teaching and in the instruments, the better we and the learners feel, the learners are attracted by these tools that arise their curiosity.

4. What are the advantages and disadvantages that digital technologies may have on students' learning in general?

Sometimes there are certain advantages of technology that are short term, there are others that are long term. We start with advantages on learning writing or EFL learning in general in terms of space and time. In terms of space, learners can learn through these digital technologies whether in class or outside the class. In terms of time, it is time saving. In terms of content, the flow of knowledge content surely will be more available and at hand for learners, better than the traditional environment of learning.

5. How do you evaluate your digital literacy competence?

Well, let's say perhaps sometimes one might be subjective when asked about his literacy or digital literacy competence. If we relate to experience what we are using, what we are doing...let's say I have an average competence in digital literacy because we have learnt in life to be realistic. We do not go beyond realistic things so that we do not go beyond our expectation. We have used so far certain digital technologies that are at our disposal in class or in laboratories, let's say we have excelled only in the use of simple tools.

6. Overall, how do you evaluate the digital literacy proficiency of EFL teachers and students?

Concerning the teachers, we consider our colleagues, we can say that they could be displayed or divided in three groups. There are certain teachers who belong to traditional minds and they do not want to change or they are very reluctant to change because in order to master and to use digital technologies, you have to think of innovative learning, innovative knowledge, content and a lot of efforts to be invested so that we have to change the mode. Some of them are average and they are making profit of all the possibilities

to use these technologies because they came to realize the importance to incorporate these digital technologies at language classroom. Some of them are lucky, they are closer to the digital generation and they are really doing amazing and excellent things in the use of digital technologies.

7. To what extent do you think it is important for EFL teachers to develop their digital literacy?

Well, the world is changing, developing and being globalized. Within little time in the future, the teacher would not have the traditional modes of knowledge and those printed materials, and the only way left is to prepare himself or herself for this digital age. Otherwise, he or she will not be a part of this world that has been being totally automated.

8. What are the main barriers to develop digital literacy?

Sure, there are a plenty of barriers that hamper teachers from using digital technologies. Sometimes, digital technologies are present but there are obstacles, and sometimes they are unavailable at all. For example, if we consider the number of students that teachers have to teach, supervise, meet, mentor, so it would be difficult for them to achieve this.

So the huge workload is a challenging barrier?

Of course, it is.

9. To what extent do you think your department integrates effectively digital technologies in classrooms?

Well, let say with the exception of the use of language laboratories and the technologies that are available there and also the personal efforts of teachers, I can say that the department is not really integrating digital technologies in classrooms. If we speak about the department, or the faculty or the university, the integration of digital technology should be a policy that would last for a long term, and every time there should be some expansion of these technologies in the department. However, what is happening is that if there is no personal efforts done by the teachers themselves, I would say that the department is not using technologies at all because it is not a part of the policy.

Do you mean that the department does not encourage the use of technologies in classrooms?

Let say we have got thirty five teachers who can only use the very traditional digital technologies like the slides and PowerPoint formats, with the exception of this there is nothing else.

10. Do you use digital technologies in EFL writing instruction? If yes, what kind of technologies do you use? If no, why not?

Let's say sometimes I use digital technologies in EFL writing class, and I would say I always use them if I consider the use of data show projector as one of the digital tools. I all the time present lectures through the use of projectors and PowerPoint programmes.

11. Do you get any technical support from your department or colleagues concerning the integration of new technologies?

As far as I am concerned, I had some training but from personal efforts only. Never before have I been taught by the institution or by someone's help. All what I have is from personal experience and personal efforts.

Was the training that you have taken useful?

Any learning, any type of learning, any competence, anything someone develops is surely useful. There is nothing in learning which is useless.

Sometimes teachers think that they don't they have an excellent level of digital literacy; they are poor in some skill areas. What areas concerning digital technologies are EFL teachers poor at?

If we speak about digital technologies, we are speaking about the digital technologies that we have at our disposal, and at the level of the institution that is university they are so limited. However, we cannot say, I feel that there is a certain lack or a weakness at the use of other technologies because simply we do not have these technologies. If we have those technologies and we might train ourselves surely we can develop competence at all levels. But we cannot predict that we would be competent or less competent in the technologies that are not used. As it is said, practice makes perfect. The more practice we use, the better we will appear.

12. How can we integrate technology to improve students' writing?

As far as writing skill is concerned, I think we can integrate technology through the use of wikis where learners are given a topic to debate, to collaborate, to interact with one another, to correct one another instantly while they are developing compositions. We can use these technologies to help learners collaboratively develop a whole composition or essay, when everyone is providing a sentence or a part of the sentence. We can use these technologies in correction or feedback, in developing topics, in making suggestions and in comparing students' progress, so these tools; although not used in our classrooms, can refine the pieces of writing.

13. What kind of web-based activities do you use in teaching writing?

Well, let say I have to be frank never before I have used web-based activities in teaching any of the modules I am supposed to teach because of the lack of time, the overload of module among students, the number of students, or the hardships we face at work. Up to now I have not ventured or tried to use such activities.

14. What is the impact of digital tools such as blogs and wikis on students' EFL writing?

Let's say there is this English proverb that every little helps. Anything which helps learners to learn is for sure advantageous. So we can say that technology would help a lot of learners, but the problem is not in technology itself, it is in the goals and the objectives that we set for our learning, and in the objectives that are set for web-based writing. If we have got clear objectives, and have got clear strategies to use, then we would surely have an effective use of these digital technologies in writing classrooms.

15. Overall, what are the main advantages and disadvantages of digital technologies on EFL writing?

Well, the problem of this technology; mostly used in the digital age, is texting that breaks the grammatical and syntactic rules. This might affect because learners sometimes do bring with them what they exchange as online messages in classes. Though it is language and it is understood, yet it affects their academic writing competence. In order to achieve certain academic writing level that is accepted, we have to consider the use of grammar which is sometimes not respected on digital technologies, and we have to give attention to the choice of words. In fact, these academic issues are not often given attention during the use of technologies.

16. How do you think teaching writing will be different in the far future?

This is a good question, well, if I want to escape for this question, perhaps in the far future I will be retired. And there is nothing to expect in the future. It is just a joke.

Well, in the near or mid-term future if there are resources, learning policy changes, and philosophy of education changes in Algeria, I might say that in the future we will have our EFL writing classrooms and our amphi-theatres equipped with all possible digital technologies, and of course in this way we have to adapt ourselves in terms of modes of teaching and learning with these available technologies. So anyway, if the changes occur, we have to change. If things remain as they are, we have to change because things outside the learning institutions have totally changed.

Interview Transcript of Teacher (B)

1. To what extent do you think it is important to incorporate digital technologies in EFL tertiary context?

I think it is very important to include digital technologies in tertiary EFL context because everything today is digital and everything is related to the internet: Content of lessons, activities, and all what we need as materials or as aids.

2. Are you comfortable in using new technologies?

I use only the digital tools that I know, and for those that I don't know I feel scared about trying them.

3. What is your students' reaction when it comes to using new technologies in classrooms?

I think the new generation likes technologies because they are technologically oriented towards this; in comparison to the old teachers, who may find this thing uninteresting and tiresome.

4. What are the advantages and disadvantages that digital technologies may have on students' learning in general?

Students in general like this, but it depends on teachers who manipulate these technologies. If teachers do not know exactly how to manipulate these technologies, it would be a constraint.

5. How do you evaluate your digital literacy competence?

My digital competence is average, I am not professional in technology use. I feel that I am just an amateur, doing something very simple in the classroom.

6. Overall, how do you evaluate the digital literacy proficiency of EFL teachers and students?

For teachers it may be average, and for students it is acceptable.

Do you think that they somehow have the same level or teachers have a higher level?

Sometimes students overpass teachers in technology because we are not deeply oriented into these technologies.

7. To what extent do you think it is important for EFL teachers to develop their digital literacy?

I think it is time, it is high time for teachers to develop, to improve, to try, to create, to innovate and to forget about their past, because they need to be updated, the recent time demands this and most of the teachers should feel the necessity to change.

8. What are the main barriers to develop digital literacy?

The first barrier is that teachers are not capable of manipulating these machines or this technology so they need to be trained in this domain. The second thing is the non-availability of these materials in classroom so they cannot use them..., may be they read about them theoretically but practically they cannot manipulate them.

9. To what extent do you think your department integrates effectively digital technologies in classrooms?

I think we have a poor integration because we don't have the exact materials that we need, and any attempt of integration is due only to teachers' support, only teachers are doing their best, but there is no support from the administration.

And does our department encourage the use of technologies in classrooms?

To a certain extent it encourages, but it does not provide materials, it remains always theoretical, at the theoretical level only.

Do you think that the poor integration is related to the lack of digital resources?

Yes, of course.

10. Do you use digital technologies in EFL writing instruction? If yes, what kind of technologies do you use? If no, why not?

I always use some technological tools especially with writing projects. All the lessons of written expression course are projected on videos, they are also prepared in the form of PowerPoint slides or sometimes Word document and presented in classroom through the use of data show.

11. Do you get any technical support from your department or colleagues concerning the integration of new technologies?

The department provides only the use of a data show, and I use my own personal computer and everything that I use in the classroom is personal apart from the data show.

It seems that there is a kind of training but we are not always interested in it because it just seems at the level of theory.

12. How can we integrate technology to improve students' writing?

We can say that I use all the time the internet for finding teaching resources. I use it also with students, I give them some online tasks or activities related to what we study in the classroom as; for example, filling in the gaps, reading some real stories or articles, watching educational videos or writing something creatively online. I oblige them to go to the internet to find resources and to do some activities there. So the aim behind this is to develop students' writing and also familiarize them with the use of technology, though at the beginning it is difficult, but they got somehow accustomed to it.

13. What kind of web-based activities do you use in teaching writing?

I think that technology helps to develop students' grammar and writing, so students need to read some online texts and do grammar exercises. I sometimes ask my students to do some extensive and intensive online reading, because they need to have an idea about how the best writers write, they need to see models of writing on the net, they need to have their hands at writing not only at the level of theory, they need also to practice web-writing. So writing should be practiced, not learnt, I sometimes ask students to do some online grammar exercises because they need to learn some rules, but we must apply these rules when writing online.

14. What is the impact of digital tools such as blogs and wikis on students' EFL writing?

To a certain extent these technologies help novice writers, but still we are afraid of making mistakes because some blogs and online spaces are not purely written by proficient students. We risk to have this deterioration in students' writing because these mistakes might transfer to affect their academic language.

15. Overall, what are the main advantages and disadvantages of digital technologies on EFL writing?

Any new technology is always beneficial for students because students are supposed to start from scratch, they start from zero so any model, any help or any supporting material is positive.

And the negative ones?

We have to be selective while using technology, we advise students to select the material they read, they shouldn't take anything for granted. They have to use their critical thinking and their critical reading, they have to read behind the lines, they have to read what is good and what is bad, and then select what is appropriate on the net.

16. How do you think teaching writing will be different in the far future?

I don't think the teaching methods will be the same, there will be a change, there will be some changes where students themselves will be responsible for their own writing, they don't expect someone to teach them writing, but they learn it by themselves and they will improve and enhance their competence.

Interview Transcript of Teacher (C)

1. To what extent do you think it is important to incorporate digital technologies in EFL tertiary context?

I get it. Well, I think it is important, it might enhance learners in state of knowledge and proficiency. It might help, yeah.

2. Are you comfortable in using new technologies?

To some extent, yeah, because this depends on the availability of sources and labs, you know the situation in M'sila University.

3. What is your students' reaction when it comes to using new technologies in classrooms?

Well, I don't have exact statistics, you see, but I think that this generation is a digital generation. So they will be comfortable about using digital technologies in classrooms because that is the best channel through which they learn a language.

4. What are the advantages and disadvantages that digital technologies may have on students' learning in general?

New technologies might help if they are under the guidance of a teacher, or a specific program or well-planned objectives. But if they are left to the personal use of students, we can confidently say that not all students are aware or know how to use and profit from these devices. They might spend the whole day in chatting without learning, or in breaking their language proficiency through the use of Facebook chat language. So the positive outcomes of technology depend on how it is used, by whom it is used and as well for what purposes it is used.

And what about the main negative points?

Well, the negative point of technology use is that it is time consuming. It takes time to gather these digital devices, to prepare the lessons and materials for the classroom, and to reorganize the classroom. You know that we already have a lot of work to do, and the classical scene of the classroom where you have the teacher in the front is not time consuming like this. That is why I think the use of technology takes a lot of time.

5. How do you evaluate your digital literacy competence?

I'm a moderate person. I have an average level, I think.

6. Overall, how do you evaluate the digital literacy proficiency of EFL teachers and students?

As far as I have contact with them, I think they are just average.

And for the students?

Students might have a good level because they have time to get in contact with these technological materials more than teachers do.

7. To what extent do you think it is important for EFL teachers to develop their digital literacy?

It is digital time, digital era, so we have to cope with these digital technologies and uses. It is a must, I think.

8. What are the main barriers to develop digital literacy?

Time pressure is a huge barrier, you know how time affects. To learn you have to spend time, you have to get a good training on technologies, you have to use them. But if you learn without using them then for what you learn! So, mainly time can affect the development of digital skills.

Only time pressure?

Not just time, even opportunities to use and reflect on what you learn is also important.

9. To what extent do you think your department integrates effectively digital technologies in classrooms?

Digital technologies are poorly used, I think. The only thing that we use is the data show projector, and in oral expression module which is in the lab we use records, but it still depends on the teacher to bring these records. Sometimes we use online lectures, but only few teachers use them, I think it happens only once or twice, not more. Ultimately, this lack of resources affects technology integration in writing classes.

10. Do you use digital technologies in EFL writing instruction? If yes, what kind of technologies do you use? If no, why not?

I think that I use digital tools to some extent, I don't know whether you consider them as tools or not. Sometimes I ask students to write and email me what they write, or to record videos, I give them projects which they record and bring in CDs, they share them with me also on Facebook. Sometimes, I bring my laptop because I don't have a data show and I expose them to some videos, authentic materials and audiovisual aids for enhancing their writing skills.

11. Do you get any technical support from your department or colleagues concerning the integration of new technologies?

All what they provide is training on using progress website and on using technological tools that serve only administrative objectives.

Once upon a time when I was a student, I got some training about computing, but just simple things, you know.

Personal training?

Personal training, of course.

Do you think that training was useful?

To some extent, but I was not consistent, I did not complete the training so I had stopped at a given time.

Some teachers have poor digital skills and some others have excellent digital skills. What do you think are the main skill areas that teachers are poor at?

Well, I think that teachers are weak at using complicated tools such as designing web pages and online conferences. As far as I am concerned, I think that I have no idea about them maybe because I have not tried them. But, what is amazing about technology is that it is feasible to be learnt, once you try it and try it again, then everything will be ok, you will learn it. For example, it is easy to learn about the use of email, blogs, Facebook and word processing though practice.

Normally teachers are good at using social sites, Microsoft word but they are poor at other areas such as perhaps Microsoft excel?

I think we download all marks and these things in the progress so it is easy to know how to work with excel, but SPSS and these new things I'm illiterate in these technological things honestly.

12. How can we integrate technology to improve students' writing?

Well, technology may be integrated in an appropriate way by creating students' online writing groups to ameliorate the proficient or the formal use of English, because you know some of these digital devices are destroying language proficiency. If we want to implement technology effectively in writing class, we can for example make students reflect on online conferences or re-write what they hear from a video they are exposed to. In writing class, blogs and wikis help a lot in facilitating writing practice, but I haven't been able to use them for the reasons I have mentioned before.

13. What kind of web-based activities do you use in teaching writing?

Examples of some web-based activities which I use are these audio stories that students hear from the net. I give them the link, they just hear it, and then I suggest some activities. I design the activities, but the materials are there from some websites, especially the classical American literature which is a good website. They go there and listen to the story. And then I ask the students about the character, the plot and I ask them to re-write the story, so I do some re-writing and reading activities.

14. What is the impact of digital tools such as blogs and wikis on students' EFL writing?

As I have told you before, the effectiveness of technology depends on how students use them. Sometime we find students who got really inspired by creative ideas, style and expressions from some tools such as blogs and wikis, others might just take the vernacular language or the informal language and its negative effects on writing.

15. Overall, what are the main advantages and disadvantages of digital technologies on EFL writing?

Technology provides or widens the scope of using authentic learning materials: books, stories and all of the writing resources we find them available. It opens the gate for students to read, write and share their writing. Concerning the negative effect, it might be on the accuracy of the language and the formal style. Also it creates somehow lazy students, if students get used to the use of technology, once you turn back to the classical traditional method, they will not cooperate with you or engage in classrooms.

16. How do you think teaching writing will be different in the far future?

If we live for the far future, I think that we will not have a classroom at all. I mean we will just email to teachers or we share lectures through distance learning technique, maybe we will put everything online, even tests may be online.

Interview Transcript of Teacher (D)

1. To what extent do you think it is important to incorporate digital technologies in EFL tertiary context?

In fact, I think that the integration of technology depends on the nature of the learning subject because even if we have got many digital technologies, sometimes not all the digital technologies might fit for developing the different skills or learning skills.

2. Are you comfortable in using new technologies?

As I have said before, integrating technologies depends on the nature of the subject matter to be taught, the type of technology used, the purpose behind employing them, the time devised, the one who uses them either teachers students, and many other factors.

3. What is your students' reaction when it comes to using new technologies in classrooms?

If they expect that what we are using in terms of innovation in technologies, surely they would react positively. However, if there is no change and this use of technologies does not meet the expectations of learners to interact, to move, to collaborate, to achieve...., by the end they will not see them beyond the traditional modes of teaching.

4. What are the advantages and disadvantages that digital technologies may have on students' learning in general?

These digital technologies provide a huge amount of knowledge, but sometimes the way learners might choose what is important, what is less important would be a bit difficult, and sometimes also learners are taken by the way of these digital technologies while surfing and perhaps they might go straight looking for other things rather than learning. If learners don't know how to choose the appropriate web-content and use web-information critically, they may find themselves go beyond the objectives of academic learning.

5. How do you evaluate your digital literacy competence?

I think we all have an average level of digital literacy. If you do not mind, I might tell you something related to my experience with digital technologies. The first time I came to use really what is meant by digital technologies was when I followed the course of the American Institute of English at Oregon University, which was sponsored by the American Information Agency. From this experience I came to know what is meant by digital literacy and digital technology through the use of wikis, instant answers, instant feedback, instant collaboration, cooperation and interaction with learners all over the world. I think it is not enough to have skills only in the use of PowerPoint, tactile boards, computers, phones and so on in this age, because these tools are becoming traditional modes of technologies.

6. Overall, how do you evaluate the digital literacy proficiency of EFL teachers and students?

Sometimes students have excellent competence in the use of digital technologies, but the problem in itself is not related to the use of digital technologies, because by the end the use of digital technologies is not an objective in learning, it is not a goal in learning. Digital technologies are just a medium to facilitate the process of learning and the process of teaching.

7. To what extent do you think it is important for EFL teachers to develop their digital literacy?

Teachers should be trained on the use of technology simply because it becomes a must nowadays in education.

8. What are the main barriers to develop digital literacy?

The first thing is that the institution itself does not have the financial means to provide digital technologies for all teachers and all learners in classes, so that all the subjects would be run through digital technologies. So in this way, if digital technologies are present, there is no other solution except to prepare and develop one's digital literacy. Another issue is related to learners, a teacher might use digital technologies, but some learners do live in very remote areas and they don't have the financial capacities to provide themselves with tools and instruments so that they will be within the wave of learning. Another issue is the overload of work for teachers; for example, lecture preparation, exams, supervision; in addition to this, there is no sufficient time.

9. To what extent do you think your department integrates effectively digital technologies in classrooms?

Technology integration is limited at least for our department, I am not aware of what is going on in other departments, but in our department we have just one data show, you can imagine the rest.

So you think that the only problem is that we don't have digital resources?

The provision of digital materials help a lot, you can't keep encouraging me by words and you don't provide me with materials. I should have materials, equipment and these digital tools in classrooms, of course we can't use technologies in writing classroom if we don't have them.

10. Do you use digital technologies in EFL writing instruction? If yes, what kind of technologies do you use? If no, why not?

I don't use technology in my teaching process because of the lack of those resources. Besides, every module is unique, digital tools can be destructive in some contexts. So, both teachers and students should apply them adequately if their use is necessary.

11. Do you get any technical support from your department or colleagues concerning the integration of new technologies?

Let's say for the last years there has been certain programs to teach and to prepare especially the newly recruited teachers to use technologies in their instruction. But the problem is not limited to training teachers. When you train a teacher for one year to use technologies and the he goes to learning classrooms, where there is no technology, so for what!

12. How can we integrate technology to improve students' writing?

There are some shortcomings in students' language ability, so I think they have to find some effective digital tools. They can watch educational videos; for example, and take rules from these videos and then practice them. Other useful tools is to check online the spelling mistakes, they need a checker, they can use also online dictionaries, and use personal writing like online essays and paragraphs. Students need to review their grammar, they need to enrich their vocabulary and we have a plenty of digital resources

to use. So when we talk about writing we talk about everything, it is reading, it is vocabulary, it is spelling, it is punctuation, it is everything, so students should find good tools to develop all these skills.

13. What kind of web-based activities do you use in teaching writing?

Most of the online practices that I do are outside classroom settings. Technologies help me to prepare my courses and tasks, I use sometimes social media as Facebook and email to foster my communication with students, they help me for example in supervising students' researches and providing feedback on their writing.

14. What is the impact of digital tools such as blogs and wikis on students' EFL writing?

In my opinion, I can say that these digital technologies are really very positive if there is a good use or excellent intake of knowledge. However, the use of digital technologies is not a requirement in life, the objective is to learn a foreign language. So if you can use technology in the best way to learn, then there will be some good results. If it is not the case, so we can say that these technologies bring nothing.

15. Overall, what are the main advantages and disadvantages of digital technologies on EFL writing?

Using digital technologies in EFL writing instruction is a two-edged sword. On one hand, teachers should know what, why, when, and how to use them. They are advantageous as they may bring variety to their writing class. They are faster if they are employed well. On the other hand, they can encourage laziness or bring boredom for students.

16. How do you think teaching writing will be different in the far future?

I think if we want to write something good and develop our writing, we have to be personal, we do not imitate blindly but we need to create effectively. The future of writing will be positive as in comparison to the old ways of teaching, writing will be different. Today we have everything given to us or available on the technology, so we have to profit from this.

Interview Transcript of Teacher (E)

- 1. To what extent do you think it is important to incorporate digital technologies in EFL tertiary context?**

I believe that digital technologies should not be used for the sake of digital technologies. Digital technologies are effective and they are good when you have got a clear objective in learning.

- 2. Are you comfortable in using new technologies?**

Frankly speaking, I do not feel comfortable in using all new technologies, I tend to use only the materials I am familiar with, and I feel anxious about trying new tools.

- 3. What is your students' reaction when it comes to using new technologies in classrooms?**

I think that students like the use of technologies because these technologies create a favorable atmosphere in the classroom. For example, when I give them a paragraph to write and I see them using the web dictionaries, it is motivating as they enjoy this atmosphere of using technologies in classrooms. In addition, these digital tools save time, and help students also in ameliorating their pronunciation and improving other language skills.

- 4. What are the advantages and disadvantages that digital technologies may have on students' learning in general?**

Well, technology is beneficial in terms of saving time, providing learning content and creating motivation in classroom. However, students sometimes use it inappropriately; for example, some of them use it for chatting, wasting time, and plagiarizing. If they use it in a good way, I think it will have an effective outcome on their learning.

- 5. How do you evaluate your digital literacy competence?**

If we relate our digital literacy competence to our Algerian environment as it is, we might say we are competent, but compared to other societies and environments which have already gone beyond the industrial age and are really knowledgeable societies in digital technologies, we can say that we are really beyond the requirements of this age.

- 6. Overall, how do you evaluate the digital literacy proficiency of EFL teachers and students?**

Because of experience, age and time, students seem to be more competent in the use of these digital technologies, sure because they are the digital generation. But we are doing our best to be a competent generation of migrants towards this, and we are trying to bridge the gap between what is existing in their competencies and what is missing in our skills.

- 7. To what extent do you think it is important for EFL teachers to develop their digital literacy?**

We have to do our best to improve our digital skills because nowadays learners sometimes do overtake their masters. You know learners belong to a digital generation, they are all the time using and developing competencies, some of them have got fantastic skills in the use of digital technologies, and this urges us to seize the opportunity for developing our digital skills. I think that the improvement of digital competence becomes now a must for all teachers.

8. What are the main barriers to develop digital literacy?

We have many barriers that hinder the improvement of digital skills such as those related to time, space, financial problems, human resources, etc. In order to be taught there should be very equipped and competent people in the use of digital technologies to help teachers, but the problem is that if you find some one expert in digital technologies, this person lacks the foreign language by which he would provide a lot of help for both teachers and learners.

9. To what extent do you think your department integrates effectively digital technologies in classrooms?

There are no attempts of technology incorporation from the department, but from colleagues there are some attempts. Sometimes we try to use some digital tools in writing classes, we try to exchange; for example, good websites for learning languages or information about these digital tools, we do collaborate in such things limitedly, but it is ok in general.

10. Do you use digital technologies in EFL writing instruction? If yes, what kind of technologies do you use? If no, why not?

I sometimes use data show in writing class which is a very traditional mode, but for the use of other advanced digital technologies, I would certainly say that we are really behind the curve.

11. Do you get any technical support from your department or colleagues concerning the integration of new technologies?

You might have support from the one who is interested in the use of these technologies. You might have support from the one who possesses the equipment for the use of technologies. However, from the rest who do not have any equipment or are not interested in the equipment, you will have no support. Also not all people are interested, if you have got a number of people who are interested in the use of technologies, you will have perhaps more people who are not interested or are still resenting and refuting the use of technologies.

12. How can we integrate technology to improve students' writing?

Sure, there are plenty of technologies and other possible media to improve students' writing as the use of blogs and wikis, where learners are present there and everyone is trying to give assistance to the collaborative work, and others would correct or provide any kind of feedback. There are many technologies that are available to develop writing skills, but we don't use them, the problem is related to space and time, there is always the time pressure of the module itself in terms of content and in terms of time allotment.

13. What kind of web-based activities do you use in teaching writing?

Frankly speaking, I do not use any kind of web-based activities. I work in a traditional way, I deliver lectures in the normal teaching method and students do their activities in classroom or at home. I think we don't have sufficient time to design such online activities, we cannot receive, check and give feedback to this great number of students that we have in classrooms, it is indeed time consuming.

14. What is the impact of digital tools such as blogs and wikis on students' EFL writing?

Blogs and wikis are useful in developing students' writing, so we can encourage students to write posts in English via these tools. They can create their own sites to write, post and share with their friends so that they collaborate in enhancing their writing.

15. Overall, what are the main advantages and disadvantages of digital technologies on EFL writing?

Technology; if used appropriately, can develop EFL writing skills to a great extent, because students can have everything they need on the web-content, but if students do not manipulate their uses, or do not know how to make their adequate selections, it might affect their writing skills negatively, so it all depends on the way it is used.

16. How do you think teaching writing will be different in the far future?

I expect that the teaching policy will change in the far future and all types of learning will be online, so we have to look for the ways of improving technology uses in writing classes, and we have also to develop our digital competence so that we can meet the requirements of this digital age.

Abstract

This study investigates the impact of digital technology integration and digital literacy competency on enhancing EFL students' writing performance. It also examines EFL teachers and students' levels of digital literacy proficiency, their attitudes towards technology incorporation in EFL writing instruction, and the current status of technology integration in EFL writing class. Data was collected from 150 EFL third-year students and 40 EFL instructors at M'sila University's English department using a quasi-experimental design and a mixed-methods approach. The control group was taught the writing course using the traditional teaching method, while the experimental group received technology-enhanced instruction. Data collection methods included questionnaires, writing tests, and interviews. The study findings revealed that EFL teachers were highly digitally literate, but were more skilled with basic technologies than with advanced ones. EFL students had an insufficient level of digital literacy; they were proficient in social networking but deficient in advanced technology. Despite EFL teachers' positive attitudes toward new technologies, the use of technology in EFL writing classes was limited. In addition, data demonstrated that the correlation between EFL writing skills and digital literacy competency is statistically significant, and that the integration of digital technology improves EFL students' writing performance. On the basis of these findings, suggestions were made for the successful use of digital literacies and digital technologies in tertiary EFL writing contexts.

Keywords: Digital literacy; digital technology; EFL students; EFL teachers; writing skills.

ملخص

يهدف هذا البحث إلى دراسة تأثير التكنولوجيا الرقمية و كفاءة استعمالها على تحسين مهارة الكتابة لطلاب اللغة الإنجليزية كلغة أجنبية، كما يهدف إلى قياس مدى تمكن الأساتذة والطلبة من الأدوات الرقمية، و التعرف على وجهات نظرهم حول إدراج هذه الوسائل التكنولوجية في تدريس تقنية الكتابة باللغة الإنجليزية - لغة أجنبية- ، وكذا تحديد الوضع الحالي لإستعمال التكنولوجيا في حصة الكتابة باللغة الإنجليزية. تم جمع البيانات من 150 طالبا في السنة الثالثة ليسانس و 40 أستاذا في قسم اللغة الإنجليزية بجامعة المسيلة باستخدام تصميم شبه تجريبي ومنهج متعدد الأساليب. تم تعليم المجموعة الضابطة مقرر الكتابة باستخدام طريقة التدريس التقليدية ، بينما تلقت المجموعة التجريبية دروس الكتابة معززة بالتكنولوجيا الرقمية. تضمنت طرق جمع البيانات الاستبيانات واختبارات الكتابة والمقابلات. كشفت نتائج الدراسة تمكن الأساتذة من الوسائل الرقمية، لكنهم كانوا أكثر حنكة في استخدام التكنولوجيا الأساسية مقارنة بالتكنولوجيا الرقمية الأحدث و الأكثر تطورا. أما طلاب اللغة الإنجليزية ف لديهم مستوى غير كافٍ من المعرفة الرقمية ؛ فقد كانوا أقل مستوى في التكنولوجيا الرقمية مقارنة بتمكنهم من وسائل التواصل الاجتماعي. أبدى الأساتذة محل الدراسة مواقف إيجابية تجاه التكنولوجيا الرقمية، غير أن اعتمادها في تدريس الكتابة بقي محدودا، بالإضافة إلى ذلك، أظهرت البيانات أن العلاقة بين مهارات كتابة اللغة الإنجليزية كلغة أجنبية وكفاءة المعرفة ذات دلالة إحصائية، وأن إدراج التكنولوجيا الرقمية يساعد في تحسين أداء الكتابة لطلاب اللغة الإنجليزية. على أساس هذه النتائج ، تم عرض اقتراحات من أجل توظيف التكنولوجيا والمعرفة الرقمية بصفة ناجحة و فعالة في تدريس وتعليم كتابة اللغة الإنجليزية كلغة أجنبية.

الكلمات المفتاحية: المعرفة الرقمية، التكنولوجيا الرقمية، طلبة الإنجليزية-لغة أجنبية-، أساتذة الإنجليزية-لغة أجنبية-، مهارات الكتابة.

Résumé

Cette étude examine l'impact de l'intégration de la technologie numérique et la compétence de littératie numérique pour l'amélioration de la performance en rédaction des étudiants en classes d'anglais comme langue étrangère. Elle (étude) également examine les niveaux de compétence en littératie numérique des enseignants et des étudiants, leurs attitudes vis à vis de l'incorporation de la technologie numérique dans l'enseignement de l'écriture, et l'état actuel de l'intégration de la technologie dans l'enseignement de la rédaction en anglais, langue étrangère. Les données étaient recueillies auprès de 150 étudiants de troisième année et 40 enseignants au niveau du département de la langue anglaise à l'Université de M'sila en adoptant un plan quasi-expérimental et une approche de méthodes mixtes. Le groupe contrôle a reçu le cours de rédaction selon la méthode traditionnelle, tandis que le groupe expérimental a reçu un enseignement renforcé par la technologie numérique. Les méthodes de collecte des données comprenaient des questionnaires, des tests de rédaction, et des entrevues. Les résultats de cette étude ont révélé que les enseignants de l'anglais étaient bien instruits numériquement, mais ils étaient plus compétents avec les technologies de base qu'avec les technologies avancées. Les étudiants avaient des connaissances insuffisantes en littératie numérique, et ne pouvaient maîtriser les technologies avancées, cependant, ils étaient habiles avec les réseaux sociaux. Malgré les attitudes positives des enseignants vis à vis des nouvelles technologies, leur utilisation dans les cours de rédaction en classe d'anglais était limitée. En outre, les données ont prouvé que la corrélation entre les compétences de rédaction et la compétence en littératie numérique est statistiquement significative, et que l'intégration de la technologie numérique améliore les performances des étudiants en rédaction. Sur la base de ces résultats, des suggestions étaient proposées pour une utilisation effective des littératies numériques et des technologies numériques dans les contextes d'écriture en anglais comme langue étrangère.

Mots-clés: Littératie numérique; technologie numérique; étudiants ALE (anglais langue étrangère), enseignants ALE; compétences en rédaction.