People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research

Kasdi Merbah University of Ouargla
Faculty of Letters and Foreign Languages
Department of English

Doctoral Thesis

Thesis submitted in partial fulfillment of the requirements for the degree of PhD in English

Option :

Applied Linguistics

Scaffolding the Writing Skill through blended learning in an EFL Context

---

Presented by

M^rs Anissa Cheriguene

Jury members

President:	*Moahmmed Seghir HALIMI*	Prof, University of Ouargla, Algeria
Advisor:	*Taieb Kabache*	M.C.A, ENS of Laghouat, Algeria
Examiner:	*Samira SAYEH LEMBAREK*	M.C.A, University of Ouargla, Algeria
Examiner:	*Nawal DIB*	M.C.A, University of Ouargla, Algeria
Examiner:	*Mohammed NAOUA*	Prof, University of El Oued, Algeria
Examiner:	*Asma NESBA*	M.C.A, University of El Oued, Algeria

-2022/2023-

To my parents.
To my sisters and brother.
To my little family.

Acknowledgements

I'm indebted to a number of people who helped me out during the procedure of this work in various ways. First and foremost, my heartfelt thanks go to my mentor Dr, Taieb Kabache for his encouragement, constant feedback and invaluable advice.

My immense gratitude goes also to Prof. Mohamed Seghir Halimi for his unwavering and ongoing support.

My thanks are extended to Dr, Chaker Abdelaziz Kerrache who assisted me academically and personally.

My heartfelt gratitude goes also to the members of the jury who accepted to evaluate this work. Their comments and remarks will certainly help in improving the quality of this work.

I would like to take this opportunity to thank also our co-authors for which their contribution in the publication of our research papers is greatly appreciated: Prof. Carlos T. Calafate (Technical University of Valencia UPV), Prof. Juan Carlos Cano (Technical University of Valencia UPV), Dr, Asma Adnane (Loughborough University, UK) and Dr, Ferhane Ahmed (Coventry University, UK).

Abstract

The outbreak of COVID-19 led to an unprecedented global drive towards remote online language learning and instruction. In most of educational settings, teachers and learners underwent a haphazard transition to online instruction with restricted resources and planning. Yet, despite its associated challenges, the outbreak of Covid 19 brought to the front many opportunities for language educators to experiment with online learning technologies and gather useful experience for their eventual inclusion in language education. In the present work, we carry a pre-experimental study in post Covid 19 era that attempts to describe a scaffolding blended learning model to teach the writing module using the platform Edmodo to third year Ens students of Laghouat. This study hinges on the triangular description of the scaffolding model presented by Holton and Clark (2006) that revolves around expert, reciprocal and self-scaffolding. To present the latter in a blended learning setting, two phases have been designed to serve the purposes of the study: The first phase centers around expert scaffolding while the second phase focuses on reciprocal and self scaffolding. The main differences between the two phases lie in timing, research tools and sub-objectives. In the first phase that lasted for six weeks, the research opted for an ADDIE model as a teaching design. The main research instruments were a pre-experiment questionnaire, pre/posts tests, autonomy checklist and a likert scale questionnaire. After the first phase that proved the efficiency of Edmodo as a possible alternative to deliver a blended learning course, there comes the second phase that aimed at investigating the effectiveness of incorporating automated feedback with peer reviewing. In the second phase of our research, we tried to introduce the Pro Writing Aid as an editing tool, provide peer feedback training and carry a semi-instructed interview with the sample. Quantitative data was also utilized in the course of this research to validate our hypotheses. A paired t-test was used in the first phase to calculate the mean differences between the pre test and post test. It was also used in the second phase to highlight the differences between the students' drafts and their drafts before and after using the Pro Writing Aid and peer reviewing. The

attained results have suggested that using Edmodo to execute blended learning increased the writing abilities of high autonomous EFL students more than low autonomous EFL students. Second, it was found that incorporating automated feedback with peer feedback will help in attaining better writing outcomes mainly for low skilled learners. At the end of this work, we suggest a new technological development known as the blockchain technology hoping to provide solutions to solve specific education problems.

Keywords: : Scaffolding, blended learning, writing, Edmodo, Pro Writing Aid, Feedback, Blockchain.

Contents

List of Figures

List of Tables

List of Abbreviations

CMC . . . . . Computer-Mediated Communication

CALL . . . . . Computer Assisted Language Learning

ICT . . . . . Information And Communications Technology.

MALL . . . . . Mobile-Assisted Language Learning.

CAI . . . . . Computer Assisted Instruction.

OPF . . . . . Online Peer Feedback.

AWF . . . . . Automated Writing Feedback.

ZPD . . . . . Zone of Proximal Development.

ENSL . . . . . Ecole Normale Supérieure of Laghouat.

PEM . . . . . Professeur de l'Enseignement Moyen.

PES . . . . . Professeur de l'Enseignement Secondaire.

BL . . . . . Blended Learning.

ADDIE . . . . Analyze, Design, Develop, Implement, and Evaluate.

OAF . . . . . Online Automated Feeback.

EFL . . . . . English as a Foreign Language.

Chapter 1

General Introduction

Contents

1.1 Background of the Study

The merge of traditional face-to-face interaction with technology-mediated learning known as blended learning has received a considerable attention during the last years. To define it, Blended learning is an approach that leverages the strengths of both digital tools and face-to-face instruction to create a more individualized learning experience for each student. Ideally, each (face-to-face and digital learning) will cater for the weaknesses of the other. In a typical blended context, students are given control over the time, location, and/or pace of their learning. As Kim, 2007 explains by fusing the strengths and weaknesses of traditional and online training into blended learning, of its both benefits and drawbacks can be regulated. Hariharasudan and Kot, 2018 supported the positive association between integrating technology into teaching and learning to address societal requirements

in the age of innovation. The dynamics of blended learning should adapt to the always-evolving views on what and how a modern classroom should function as a learning environment.

The integration of technology into the myriad facets of education, including the study of English as a foreign language, gave the sense that it may act as a catalyst for an educational system that is effective in preparing the digital immigrants for the demands of the future. Razali, 2016 stated that evolving technologies had a major influence on educational development. It should be mentioned that the concept of blended learning is not relatively new, yet its use as well as its limitations have been very much in focus mainly in post Covid 19 world. Prior to the 2021–2022 academic year, Algeria started to immunize and return to the "new normal," thus schools and institutions had to reevaluate the technology they used and how it is used.

The term 'blended learning' became the new normal in most of higher education institutions and emphasis in research was ebbed toward the latter. Seminars, conferences, articles summarized the elite's efforts to make the public adapt to this new educational model. This brought forth a lot of exciting opportunities in education, but also a lot of uncertainties. As a matter of fact, blended learning in Algeria is considered to be in its infancy yet the growing demand for hybrid learning poses problems and challenges that are worth investigating. In an attempts to evaluate the Hybrid learning experience by Algerian institutions during the Covid 19 era, Guemide and Maouche, 2021 and BOUTLIDJA, n.d. brought into light the challenges that were met by students who experienced blended and distance learning during Covid disruption. Research findings summarized the challenges in inadequate facilities and infrastructure, limited digital accessibility, lack of students' motivation, and insufficient technological knowledge and skills on the behalf of educators and learners.

In addition, while the merits of blended learning are well stated in literature, merging technology into face to face traditional instruction is likely to create an unprecedented level of "uneasiness" to students, teachers and educational institutions. In particular, students must regulate, manage and accomplish their learning

tasks without the instructor's directions . Therefore, a student's ability to take initiative and actively participate in their education is crucial for success in an online environment. In particular, students must regulate, manage, and complete their learning tasks without the direction of their teacher.

Many methods have been echoed in research with the aim of helping in reassuring students' autonomy and self regulation skills. One such method that owe its theoretical premises to the Vygotskian socio cultural theory referred to as "scaffolding". According to L. v. Lier, 2007, transferring control to the learner is an essential component of scaffolding. Perhaps this is where the analogy of scaffolding evolved from. Scaffolding is used to lift construction workers to the level they need to be at in order to finish the construction procedure, but it is uninstalled once it is finished. A brace, on the other hand, functions as a support to hold a building's components together. A brace is a structural component that is always present in a building, even after the builders have left and the structure has been occupied. If a task is implemented as means for providing scaffolding but its support is firmly entrenched , it could hardly be called scaffolding. The transient feature of scaffolding is what sets it apart from a brace.

In order to mitigate writing difficulties faced by L2 learners, this current research adopts Holton and Clarke, 2006 scaffolding strategies in a mixed learning (face-to-face and online) class to relieve the writing challenges faced by L2 learners, and to see if students' writing performance might be improved. Our choice of the writing skill is justified by the fact that it is the skill that calls for autonomy the most. Indeed, academic writing is a language production type that is not easy to assist as its users do not receive immediate feedback from receivers.

Demetriadis et al., 2008 state the benefits of online tools for scaffolding writing. They assert that investigations have indicated a positive impact of online scaffolding on students' academic performance. The development of conceptual comprehension has a lot of potential with online scaffolding as well, Englert et al., 2005 provide additional justification for the advantages of online scaffolding. They emphasize that online scaffolding result in better writing. Rasheed et al., 2021

also affirm the advantages of online learning for enhancing language proficiency. In his study, Rasheed et al., 2021 pointed out that the lack online peer learning self-regulation strategy are on the top list of challenges found blended learning instruction. He therefore proposed in his study an approach for scaffolding students peer-learning self-regulation strategy in the online component of blended learning. In a similar context, Ballouk et al., 2022 investigated how medical students adapt their learning behaviours in a Blended Learning environment to become more independent and self-regulated.

A great deal of other studies have shown that people approach formal education with a range of schemata, or prior knowledge, attitudes, abilities, and conceptions. These concepts, preconceptions, and beliefs have a significant impact on one's worldview, memory, reasoning, problem solving, and ability to learn new information (Bransford et al., 2000; Dib, 2021). The idea behind the teaching approach scaffolding is that students enter the classroom with a rich amount of past knowledge. Although some of this information may not be accurate, the practice of expanding on what a learner already knows makes scaffolding an efficient instructional strategy.

1.2 Statement of the problem

With the dissatisfaction that EFL students and teachers often feel because of the difficulties of the process of writing that stem from "a lack of language skills, culture-specific behaviors, and difficulty in interpreting hedged and indirect language" (Liu, 2013, p.301), it becomes inevitable to design an instructional model that combines two modes of delivery, face-to-face and online, because of the merits stated earlier. Despite the fact that usefulness of electronic devices in the classroom can be debated, the effect of technology on the writing of students in the real world cannot. If we consider the needs of tech-savvy learners that are going to be prepared for an increasingly competitive global workforce, technology must come be at the front and core of the teaching curriculum.

Enfolded within the socio cultural theory that calls for the interactivity of the learning process, our work uses the platform Edmodo to imply the blended learning premises for a period of ten week (10) that is divided into two phases. Our work is innovative in the sense that it tries to make a combination of human feedback (teacher and peers) with computer generated feedback (automated feedback). To the best of our knowledge, there has been almost no research in the Arab world that attempted to apply human- and computer-generated feedback simultaneously. By contrast, automated feedback is gaining wide recognition in Asian countries as most of recent research is conducted in an attempt to find a correlation between automated feedback and students' enhanced writing.

1.3 Objectives of the Study

In this doctorate thesis, we aim at achieving the following:

1. As the Blended learning is at its initial stage in Algeria, the current study suggests a hyprid model to teach writing.

2. The use of the platform Edmodo is suggested as a possible alternative to the already existent learning platforms or social networks.

3. Confirming that the challenges faced by writing teachers in their classrooms can be overcome by using blended learning to increase students' composition skills.

4. Contribute to the already existent research on blended learning's potential to help students improve their writing.

5. Maximize sources of feedback namely online peer feedback and automated feedback.

6. Establish solutions as we migrate from web2 to Web 3 infrastructure. In the future direction section, we aim at introducing Blockchain technologies for emergency cases like Covid 19 .

1.4 Research questions

Departing from what precedes, we aim at answering the following research questions:

1. Would a combination of traditional teaching and online learning help in scaffolding students' writing skills?
2. Is there a noticeable difference in writing skills between the high and low autonomous EFL students utilizing Edmodo in a blended learning context?
3. Can time restraints, issues with the writing process, and feedback be resolved by a blended learning writing course?
4. Does the combination of the pro writing aid and peer editing help third year students at the ENS of Laghouat in reducing language errors?
5. What is the omnipresent, secure, and safe backup solution to support the overall learning process during emergency cases like Covid 19?

1.5 Significance of the study

The findings of the present study can be of some use to teachers, students, and other stakeholders such as test-developers and curriculum designers. The results of this study can help researchers better understand how EFL students react to mixed feedback and how much such input ultimately helps them become better essay writers. Likewise, this study offers possible responses to the researchers' need for combining both computer generated feedback and instructor/peer feedback about educating and evaluating EFL learners' writing abilities and also examines into their impressions of the blended feedback in order to fill up the aforementioned gaps in the literature. The current study therefore aimed to investigate a novel approach to developing Algerian EFL learners' writing ability through combining both teacher-generated and computer-based feedback provided by automated feedback generator, in order to contribute to the existing literature and to pave the way for further research in this area.

1.6 Research Methodology

The target population of the study are Third Year students at the Ens of Laghouat who were chosen because, in their third Year students are supposed to have gained a basic understanding of essay prerequisites. The total number of third Year students at Department English at ENS is 50. The sample population are divided into two groups: PES (bac+5) and PEM (bac+4). In the current study the two groups were treated as one experimental sample as our aim was not to compare between the competencies of one group over the other. Like many Algerian institutions, the Ensl has introduced Blended learning to its courses using the schools' Moodle and it was not possible for the researcher, at this stage at least, to provide traditional teaching for a control group. The use of one experimental group in literature is found to be called pre experimental research (Nunan 1992) . Applied when necessary, pre-experiment research design involve either one group or multiple groups to be observed subsequent to some agent or treatment presumed to cause change.

As our research is multitudinal in nature as it tries to cover numerous aspects namely the use of the platform Edmodo, students' autonomy in a blended learning context and online feedback, a plethora of research instruments have been utilized. In a ten-week term, the full study load is sanctioned into two phases, each phase focuses on a particular aspect and tries to answer particular research questions. The first phase duration is 6 weeks. In it, tasks handed to learners are modelled on Nunan's (2004) seven principles for task-based teaching: scaffolding, task dependency, recycling, active learning, integration, reproduction to creation, and reflection. Using the platform Edmodo, these courses the students were engaged in different activities, ranging from skill-building assignments to minor writing activities to full length essays. Within this phase, two means of data collection are used: the questionnaire and a pre-test / post-test involving the two groups of students: Pes and Pem. Two questionnaires, (pre experiment questionnaire) and (post experiment questionnaire), are utilized. The first questionnaire aims at investigating the students' attitudes and opinions towards the learning/teaching of writing. Aspects like the online learning experience during Covid 19, learning styles,

motivation, expectations and their likes/ dislikes of implementing Information and Communication Technologies in the learning/teaching of writing are dealt with. The second questionnaire aims at gathering students views about their blended learning experience in writing using the platform Edmodo. This questionnaire served as cursor that helps the researcher to evaluate the previous phase and prepare for the next phase. Of course, numerical data are provided as well through the quantitative analysis of the pre/post test.

While the first phase helped us to answer the first three research questions, the second phase was designed to answer the forth research question which is related to online peer feedback and computer generated feedback. At this stage, the research continued using the platform Edmodo for delivering courses and creating an interactive atmosphere amongst the learners. As far as automated feedback is concerned, the researcher-teacher introduced the auto corrector "Pro writing aid" to the learners. Students were given essay assignments and asked to send in private the two versions of their essays that is before and after the use of pro writing aid. After, the researcher posted the second version of the students' essay on the platform Edmodo to get peer feedback. At the end of the second phase (which lasted for four weeks), the researcher conducted a semi-instructed interview with some students who participated in the experiment.

1.7 Structure of the Dissertation

This doctorate thesis is a compilation of seven (07) chapters. "Chapter One" entitled as "Teaching in a Digital Age: A Bird's Eye View" draws multiple facets of Ict use in education. It tries to draw the scope of Ict technologies, draw its historical line with a special reference to the emerging blended learning. The chapter also introduces important aspects in relation to information and communication technologies as well as Computer Assisted Language Learning.

"Chapter Two" entitled "The Writing Skill within the Sociocultural theory" traces the main milestones that describe the various trends adopted in the teaching of writing throughout the last four decades. We also highlight in this chapter the

theoretical premises of the term “scaffolding” with relation to the writing skill as the term appears in the title of our work.

”Chapter Three” entitled ”Rethinking Composition in a Digital Age”, provides an overview of major and recent findings in literature regarding the use of technology in teaching the writing skill.

”Chapter Four” is devoted to the description of the research methodological procedure. Information about the research design and research instruments used in this study will be tackled.

”Chapter Five” is devoted the first experimental part of our work. In it, we elaborate on the description of the research procedure using the ADDIE model. In the second section of this chapter, the author provides quantitative and qualitative interpretations of the first three research questions.

”Chapter Six” is devoted the second experimental part of our work. It attempts to describe the effects of blending online peer feedback and computer generated feedback. Within this chapter, an analysis of a semi structured interview is made in order to elaborate upon the features and the problems at stake.

Considered as the final chapter in our thesis, ”Chapter Seven” recounts for the study’s main findings, suggests recommendations that emanated from the study’s basic conclusions as well as directives for further research.

Chapter 2

Teaching in a Digital Age: A Bird's Eye View

Contents

2.1 Introduction

The integration of the technological facilities in socio-economic and political institutions is progressively making human interactions depending on it. Technology and its affordances have impacted all spheres of science and people's life style as it had a significant role in the way people perceive the world and process its components.

Besides to facilitating the day to day human personal and professional activities, Information and Communication Technologies have an unlimited potential use in the current process of teaching and learning. Thus, the drive towards building sustainable knowledge-based nation has made education stakeholders focus on harnessing technology strengths instead of dwelling on its weaknesses. This is considered as a significant step in creating 21st century learning environment for preparing learners into becoming effective citizens of knowledge-based societies that are information and communication driven. This chapter aims at giving clarifications and precisions on how the word "technology" is used in different contexts and for multiple purposes rather confining it in a technical definition. Terminology such as Information and Communication, Educational Technology, Computer Assisted Language Learning will be employed when necessary.

2.2 Technology as an Agent of Change

In broad terms, the term 'technology' refers to the mechanism by which humans reshape nature to respond to their needs and desires. In a prehistoric context, the notion of technology appeared to refer to humans' continuous use of tools to cope with and control their surroundings. Human's familiarity with technology is thought to have begun over 2 million years ago with the transformation of primitive assets into useful tools. This operation took place for reasons of survival and control of the environment like the production of the spear, as well for decorative purposes such as the practices of cave painting. Therefore, technology is one of the characteristics that make humans different from most other animals (Selwyn, 2011). As Volti (1992, p. 4 cited in Selwyn, 2011. P 10) puts it, "technologies are developed and applied so that we can do things not otherwise possible, or so that we can do them cheaper, faster and easier". In this respect, "technology" has traditionally referred to the methods and procedures for carrying out actions, comprehending concepts, and accumulating knowledge. As Albert Teich (1997, p. 1 cited in Selwyn, 2016) clarifies : 'technology is more than just machines'.

Since the world is rapidly moving into digitalized media and information, the role of technology is widely acknowledged and its existence has basically altered many practices of the individuals' daily lives and all forms of venture within education, business, governance and social life. Yet, a study that was carried out by Oliver, 2002 found that the educational field is the one less influenced by the development and use of technology than other sectors. The manner in which these fields function today is drastically different from how they operated in the past. However, if one looks at education, it appears that there has been an uncanny lack of effect and significantly less change compared to other sectors.

Still, technology made a revolution in the way data is created, saved, transferred and modified. The transformation that technology has brought about in the world has prompted research into how technology may be included as an instructional tool. Computer Assisted Instruction (CAI) as a complimentary component of modern education has established itself as a research niche in which people are trained to reach a wider knowledge, understanding and acquisition of information as it enhances the process by motivating learners and improving their learning as well as promoting access to academic data.

Former UN Secretary General Kofi Annan argues that to attain the objective of primary education by 2015, we must ensure that ICT opens the doors of education. This unveils the growing demand and even more important status than ICT could have in education. Ramey, 2013 added that "information technology tools help in providing the right people with the right information at the right time". It can be said that educational technology is a kind of technology that seeks to improve students' overall performance through the conception and the use of a variety of technological tools and procedures.

2.3 Defining ICTs

ICTs are frequently connected with high-tech devices like computers and software, but they can also be associated with more conventional processes like radio, television, and telephone technology. The concept ICTs refers to kinds of technologies

that are used to send, save, create, display, share or exchange information. This definition of ICTs covers not only technologies as radios, televisions, DVDs, telephone (both fixed and mobile), satellite systems, computer and network hardware and software; but also the equipment and services associated with these technologies, such as videoconferencing and electronic mail (Tinio et al., 2003).

In general terms, ICT is sometimes seen as a synonym for information technology (IT) or as a concept extension of IT. ICT comprises communication technology, computer technology, and assistive technology with relation to both IT and computer technology. Traditionally, communication technology can only send and receive technologies for message transmition, while IT focuses on encoding, decoding and displaying information. As technology continues to develop, these two technologies became slowly inextricably intertwined and are gradually incorporating into one class, namely, the concept of ICT (T. Yang, 2019). Clare Johnson, Principal Manager ICT, Qualifications and Curriculum Authority, clarifies the implications of the change:

> "The new curriculum for ICT proposes that information is at the heart of students' study, of IT skills, knowledge and understanding. This new focus suggests that students might start with using IT to find things out, then develop their ideas and make things happen. There is a new emphasis on students sharing and exchanging their work and ideas that encourage collaboration and publication. Their work is constantly reviewed, evaluated and modified.The result should place more emphasis on IT as a tool for learning, rather than merely using applications." (IT and ICT in the National Curriculum, 1999, p. 3)

Henceforth, ICT frequently refers to the entities integrated via telecom networks, computer networks, and audio-visual networks. People have been avidly seeking technology solutions to actualize the goal of an ICT network due to the fact that the incorporation of these networks can drastically lower network construction expenses. In a general term, ICT encompasses all information-recording medium (such as hard disks, CDs, etc.), information-broadcasting technologies (such as wireless technologies), and audio/video communication technologies (such as video

cameras, mobile phones, etc.). The development of information and communications technology has given rise to a wide variety of industries, ranging from modest home electronic data sheets to large enterprise software packages, online software services, and the hardware and software required to transport data over the Internet (T. Yang, 2019).

2.4 ICTs as a Pedagogical Tool

One of the most prominent imperatives for the use of technology in education is thought to be the basic priority of 'keeping up' with the pace of contemporary life. The unstoppable and dizzying pace at which digital technology has advanced over the past half-century is a striking illustration of a principle that computer scientists refer to as "Moore's Law" [1] (Selwyn, 2011). Reviewers such as Prensky, 2001 have pointed out since the start of the twenty-first century that , 'our students have changed radically. Today's students are no longer the people our educational system was designed to teach.' Such claims indicate that educational practices must be revised to "keep up" with young learners' needs and aspirations. In the same line of thought, Mahiri, 2011 argues, 'new media permeates the lives of young people . . . we must define its place for learning in schools or watch it take the place of schools'.

In fact, personal beliefs and experiences of parents and instructors influence a significant portion of the demand for incorporating technology in educational settings. In fact, it could be argued that many adults have an almost intuitive connection between digital technology and the quality of modern education. Particularly, these tensions and demands have prompted considerable political efforts around the world to expand the use of digital technology in education. As a result, the past 20 years or so have witnessed digital technology become a significant trait of education policymaking around the globe. Nearly every industrialized nation (and many developing ones) now has a formalized "educational ICT strategy" with the goal of directing educational institutions to employ digital technology in their

[1] Moore's Law made a prediction that the cost of computers is going to be reduced while the number of transistors on a microchip doubles roughly every two years. Gordon E. Moore, an Intel co-founder, made this remark in 1965, and it later came to be known as Moore's Law.

teaching and learning. These strategies typically involve spending a substantial amount of money to ensure that every classroom has Internet connectivity and that students and teachers can simply connect their laptops Selwyn, 2011. In addition to the adjustment of curricula to include technology-related components, a substantial amount of work is devoted to the training of newly qualified and also experienced instructors, as well as the incorporation of technology-related components into the curriculum. Consequently, digital technology has become an integral aspect of the upgrading and modernization of the majority of education systems over the past 15 years, regardless of a country's socioeconomic status.

Perhaps one of the most widely discussed benefits of digital technology use is its role in optimizing and enhancing learners' cognitive processes and thinking skills. The implementation of digital technology in education proved to assist a wide range of cognitive aspects in a positive way. It has been argued that digital technologies support some of the major prerequisites to higher-order thinking; that is, memory and automation of 'lower level' skills such as spelling.

Moreover digital technologies are frequently associated with 'constructivist' approaches to learning, which permit participation in collaborative and social environments. Importantly, digital technologies such as the internet clearly align with the constructivist view that the learning process occurs most effectively in social contexts. In this manner, digital technology can connect learners to other individuals and resources that may impact and lead to an effective learning (Scardamalia and Bereiter, 1994). According to these arguments, a major advantage of technology-based education is that it places the learner at the center of the learning process. Particularly, it is claimed that digital technologies provide students the opportunity to choose the material and the people that are most suitable for their specific needs and conditions. Digital technologies ,such as the internet, can undoubtfully provide learners with almost instantaneous access to a wealthy bank of information and communication that can be accessible anytime and anywhere as it helps opening up education 'beyond the four walls of the classroom' (Gee, 2005). Therefore, technology has the necessary potentials to contribute to the

development of language teaching /learning and clearly, it has refined the quality of language education by brining valuable applications to the field. There are several free of charge websites that provide ample opportunities to learners to master different aspects of language like grammar, vocabulary, pronunciation, etc. Furthermore, innovative techniques and methods are continuously developed in contemporary classrooms where technology is used to meet the demands and needs of 21st century learners. Several empirical studies were performed to explore the efficacy of technology it breeds to language teaching and learning. As a result, they have provided ample evidence to support the argument that using technology in language teaching/learning increases learners' proficiency, motivation, and their engagement in the classroom (Zhao, 2003). Echoing this view, Eaton, 2010 also found that computer-based communication is a vital feature for language teaching/learning, and that computer-based discussions are more likely to elicit greater participation than face-to-face discussions. As a result, it typically leads to more collaborative and encouraging environments in which all students have an equal opportunity to learn their language.

Indeed, many scholars have been enthused by the potentials of educative computer-mediated communication. Learning and the exchange of information are thought to take the lion's share of the digitally supported 'virtual communities' and the collation of shared knowledge through the creation of 'online brain trusts', 'computer-assisted group minds' and 'crowd sourcing'. Along with these tools, individuals can learn with and learn from whomever they wish. This ever growing flexibility and individualized control leads the way to digital technology of becoming an appropriate means of supporting the forms of 'informal' education and learning. Computer-mediated communication technology is also regarded as a promising source of professional growth and development as it helps in the creation of a space for online dialogue and sharing resources between teachers around the world. In brief, digital technologies are seen to be an integral part of the modern-day teacher's repertoire – giving them access to explore and expand their own practice and enhance the overall 'learning experience'.

The advantages gained from integrating technology in education are seen as permitting greater numbers of individuals to participate in a larger range of learning than was ever possible before. In particular, the choice and control for learners related with technology-based education is thought to prompt the integration of groups who traditionally do not engage in education. The delivery of educational opportunities through technology, it is suggested, can help overcome the obstacles that prevent people from engaging in learning. As Sewing (2011) asserts:

> "Digital technologies may do this by making learning provision more flexible, bringing costs down, making learning more accessible, offering reliable and accessible information, and allowing people to learn on an 'any place, any place' basis" (Sewing, 2011).

This is thought to personify the ideal of 'lifelong learning' and "education for all" mantra that many policy-makers and educators are seeking to accomplish. As Bonk, 2009 argues:

> It does not matter if you are a scientist on a ship in Antarctic waters or a young girl in a Philippine village – you can learn when and where you want and from whomever you are interested in learning.

All in all, three main rationales trigger the interest of integrating ICT across educational system namely: social, vocational, and pedagogical (Castells et al., 1999; Hawkridge, 1989). This study is motivated by a pedagogical objective that emphasizes the role of ICT in improving and enhancing teaching and learning. On the one hand, this relates to the types and degrees of abilities that are deemed essential for modern students to acquire during their schooling (Hawkridge, 1989; Subhi, 1999). On the other hand, it derives from the work of scholars such as Vygotsky and Dewey, whose findings have prompted a large number of educational theorists to change educational settings from places where "knowledge" is "transmitted" to places where students are interactive and active participants in their learning (Cuban, 1993). Indeed, a wide variety of skills are needed to be developed to become a true literate and effective learner to be part of the digital age. Now, additional skills, such as team work, collaboration, communication, and

ICT proficiency are coming enter the scene. Fullan (1993) contends that the "moral purpose" of education is to improve students' lives and to generate people who can "live and work productively in increasingly dynamically complicated communities." (Fullan, 1993).

2.5 Limitations of ICTs for Education

Despite the numerous advantages attributed to the inclusion of ICT in education, some limitations were highlighted in the existent literature. del Campo Adrian, 2012 claimed that ICTs may hinder the teacher-student interaction by monopolizing the teacher's attention that has to be more oriented to the learners particularly for motivating them. Furthermore, ICTs help the teacher to deliver information in less time but this demands the learners to process a huge amount of data, which does not always have end with positive results. Consequently, students are often tempted to plagiarize others' work that is available online when given homework that involves collecting and compiling information. Joseph, 2012 clarifies that *"financial constraints due to the ever-changing needs of technology; leadership challenges, infrastructural demands and support continue to hamper the effectiveness of technology, particularly in Third World countries"*.

Lack of training is another major hindrance to CALL adoption in EFL classrooms, as teachers' lack of basic ICT literacy makes them uncomfortable using a computer in front of their students, as any error or inability to manage technology on the part of the instructor could be interpreted as a sign of incompetence. Another factor to consider is cost, as CALL may be beyond the financial means of some countries and institutions, particularly in rural areas, where maintaining and equipping educational institutions with sufficient hardware, software, and networks, as well as providing required teacher training, is simply unaffordable (Khamkhien, 2012). While learning a language is primarily for communication, working on computers alone can lead to anti-social behavior on the part of learners whose only companion is a machine (Egbert, 2004). Consequently "Learners may get 'wrapped-up' in the program and focus on learning the language in isolation" (ibid., p. 84).

Furthermore, no matter how successful a CALL program is, if it is not used properly or even underutilized, it will fall short of its goals. CALL systems have a variety of features designed for various reasons, and in order to get most out of them, students and teachers must be made aware of all of the features and their tasks, as well as when and how to use each one. The fact that not all CALL tools provide users with the requisite guidance and help takes us back to the need for training. As a result, in order to avoid "Underutilization of Resources," a CALL user must first determine if the software is intended for a single user or a community, and whether it is a tutor or a tool (Egbert, 2004).

Another important aspect to address is technical problems. Computer malfunctions, internet connectivity issues, software incompatibility, viruses, or simply a power outage may cause the entire lesson to fail. Furthermore, students could perceive the teacher's ineffective attempts to deal with such issues as a lack of preparedness. Another downside of CALL is overreliance on technology. Thus, some teachers rely heavily on already made materials to use them as worksheets and lesson plans and never bother to prepare their own. It is a well known fact that the teaching process requires a lot of preparation, and research represents a great deal of this learning activity.

When using technology in the classroom, there are two main cautions that should be taken into account. First , technology should be seen as a mean rather than an end in itself. It should be used to address educational issues and should be chosen for known reasons (Joseph, 2012; Bouarab-Dahmani and Tahi, 2015). Second, it should foster a meaningful learning and teaching environment.

Finally, El-Mowafy et al., 2013 proposed that *"To gauge learning and teaching efficiency, a continuous evaluation of content and use of new technologies in teaching should be regularly performed"* in order to successfully integrate technology in instruction.

2.6 The Skills Needed in the 21st Century: "The 4 C's"

Education is about getting adapted with a changing world. Various sets of skills have been put as the base of educational reforms in many developed countries in the last few decades in order to prepare the individual for postsecondary experiences to react to social and economic fields in public and private sectors, it is said that "...21st century skills are those that must be brought to bear in today's worlds of education and employment in order for individuals to function effectively as students, workers and citizens." (Griffin and Care, 2014). The implementation of those skills requires pushing learning behind the school walls with the intention to provide learners with opportunities to connect the knowledge acquired at school with the real world application. Thus, less effort would be spent on delivering content and more time would be spent on application in order to reach a wide number of learners.

Today, more than ever, addressing one's society's challenges necessitates educational qualification and the school systems need to better adapt with assisting its learners by making connections between their classroom learning with their real lives as well as provide them with the necessary skills to prepare them for a successful future life. Education, as outlined in the OECD Learning Framework 2030, is crucial to the cultivation of the knowledge, skills, attitudes, and values that will allow individuals to both contribute to and benefit from a more equitable and sustainable future. It will be critical to set clear objectives, collaborate with people who might have diverse viewpoints, seize opportunities and think of multiple solutions to "big problems" in their coming years. As such, educators' duty is to equip students with the skills they need to become active, responsible and engaged citizens OECD., 2018.

The National Education Association (2015) announced that what was regarded a good education before is no longer deemed enough for success in many sectors for people who are considered as "digital natives". In other words, learners are traversing international borders and overcoming language hurdles in order to collaborate

with others from across the globe using interactive technologies. In the past, it was enough to master the "Three Rs" (reading, writing, and arithmetic). Yet, in the modern world, "Three Rs" are no longer sufficient to manifest an educational degree. If today's students want to compete in nowadays' global society, they must demonstrate proficient communication skills, creative abilities, critical thinking, and collaborative spirit (4Cs). It is condensed that educators must complement all of those subjects with the 4Cs to prepare young people for citizenship and the global workforce.

In Europe 2020 strategic plan, the European Union Commission (2010) cites some flagships, one of which is linked with skills in order to attain the prior goals for a smart development and sustainability. It is; "An agenda for new skills and jobs" to harness labor markets and empower people by allowing them to work on their skills throughout their lifecycle. Therefore, teachers need to prepare students for occupations and jobs that have not yet been established so that they may effectively adapt to new technologies, enter the workforce, and coexist with the digital world because "In the future there will be technologies that have not yet been invented; there will be ways of living and thinking and learning that have not yet emerged" (Griffin and Care, 2014).

Indeed, 21st century skills and competencies are becoming a part and parcel of the teaching learning activity. They are skills and abilities that learners need to prepare them to their future studies, careers and a world citizenship. Embracing21st century thinking, English language classroom is viewed to be the ideal environment to establish those skills:

> "In essence, the English language classroom exists to prepare students to communicate across cultures, across borders, across perspectives. As the world evolves toward greater inter connectedness, it is our students to whom we entrust the responsibility of building a better global society". (Oxford university press ELT 2013).

ATC21C (Assessment and Teaching in the 21st Century) classified21st century skills into four categories grouped under the acronym of KSAVE: knowledge, Skills, Attitudes, Values and Ethics:

- **Ways of thinking:** Creativity, critical thinking, problem-solving, decision-making, and learning.
- **Ways of working:** Communication and collaboration.
- **Tools for working:** Information and Communications Technology (ICT) and information literacy.
- **Skills for living in the world:** Citizenship, life and career, and personal and social responsibility.

As the new millennium necessitates resilient and autonomous learners with adaptable abilities and competences, the integrating the 21st century skills in the classroom helps learners to be become more creative and critical thinkers. That is, it helps them to communicate and co-work successfully. Some of these skills are recent, while others existed before and need adaptation before their implementation. According to Oxford University Press the 21st century skills are called 4C's: *Critical Thinking, Communication, Creativity and Collaboration.*

2.6.1 Critical Thinking

It is a contemporary skill that entails asking questions, doing analysis, and offering assessment and judgment based on the presented information. Critical thinking is the act of acquiring and assessing information to obtain a well-supported conclusion or solution.

It is considered as the most important skill of the 21st century as it empowers students to find the truth in assertions, especially when it comes to separating fact from opinion. With critical thinking, students are encouraged to acquire process, interpret, analyze, and critically rationalize large blocks of often conflicting information to the point of making an informed decision. It takes learners beyond memorizing and mere understanding of information "A critical thinker uses logic and evidence to prioritize and classify information, find relationships, make judgments, and solve problems." (Oxford University Press ELT 2013). It promotes learner's autonomy, and helps in the promotion of lifelong learning.

2.6.2 Communication

Through role-playing, group work, and available teaching technologies, learners are encouraged to practice their communication skills in the classroom, and when class is over, the teacher must demonstrate how to handle and use all outside sources, such as the internet and social media, to continue communicating. Digital instruments and resources are believed to make a new realm of communications interaction in which the ability to surf successfully is integral for success in the 21st century.

2.6.3 Creativity

Creativity is defined as the pursuit of novel ideas or products that meet the needs of the new world. It is not a selected talent held only by a minority learners, yet it is a method of thinking that everyone has and can develop. Creativity in the classroom surrounds students with situations in which there is no typical known answer, where there are many solutions, where the tension of ambiguity is hailed as fertile ground, and where imagination is valued over rote knowledge. It powerfully helps them grow both emotionally and intellectually.

2.6.4 Collaboration

Collaboration in the twenty-first century necessitates the ability to work in groups, learn from and contribute to the learning of others, use social networking skills, and show empathy when interacting with a diverse group of people. Collaboration often necessitates the development of mutual knowledge and the co-construction of meaning. New abilities and expertise are essential to enable group members to collaborate online (digitally) and contribute to the shared knowledge base, whether working remotely or in a shared physical space.

Hence, it is of a paramount importance to equip individuals with a set of skills that allow our existing and future workforce to adjust to new situations and possible career transfers, hence reducing unemployment and increasing labor productivity. The National Education Association (2015) asserts that “80 percent of executives

believe fusing the 4Cs would ensure that students are better prepared to enter the workforce. According to these managers, proficiency in reading, writing, and arithmetic is not sufficient if employees are unable to think critically, solve problems, collaborate, or communicate effectively." According to the results of the American Management Association's 2010 Critical Skills Survey, 75.7% of executives who participated in the AMA survey believe that the "4Cs" will become more important to their organizations in the next three to five years, especially when the economy improves and organizations continue to grow in a global market. (2019). The demand being placed on teachers is to find ways to inject these remarkable skills in their lessons so that students will have an adequate amount of time to work on and master these skills in the course of their daily practices.

2.7 Digital Natives and Digital Immigrants

The term "Digital Natives" was first introduced by Prensky in 2001 which refers to individuals were born after the 1980s and "grew up with the internet and have a strong familiarity with communications, media, and digital technologies" (Spiliotopoulos, 2011). . The term is used interchangeably with "net generation", "Net-Geners," "Gen-Xers", "Millennials", "Generation C" (McLoughlin and Lee, 2008), "Z Generation" and so many other appellations. Then, digital natives are brought up in a digital world where the computer, Internet access, smart phones, digital camera, digital games and social media are part of their daily lives (Babo et al., 2012).

Digital natives are described as good multi-taskers, media savvy, and tend to integrate digital technology in all spheres of their lives. Latchem and Jung, 2009 asserted that "Navigating websites, [digital natives] seek hyperlinks to reach cyber destinations rather than reading logically from the top of the screen. They download music from the Internet rather than buying CDs. They watch videos on smartphones or PCs rather than TVs and they use tools such as Facebook to access cyber meeting places". In fact, the term net generation has come to encompass all facets of modern life . With the appearance of the concept of digital

natives, Prensky (2001) coined another concept, the “digital immigrants”, referring to people were born before the advent of digital media and became acquainted with technology in an advanced stage of their lives. Teachers, who are digital immigrants, and the educational system they evolved was not made for digital natives Prensky, 2001.

With this dichotomy between digital natives and digital immigrants, a ”digital gap” has been identified between instructors and students, calling into question the status quo (Dakhmouche and Abderrahim, 2019). Contemporary learners feel their “need to interact with technology in order to maintain an interest in their environment” (Doolan et al., 2012), and mostly expect that technology will be found amongst the myriad ways of getting knowledge. As (Latchem and Jung, 2009) put it in a question, “Should this younger generation be made to learn in the old ways or do we need to reconsider our methods, uses of technology and content?”. There is no clear-cut answer to this question, but following the logic of Regueria and Rodriguez, 2015, “In this context it makes no sense to use old teaching materials and resources” (p.195). Moreover, as today’s students seem to demonstrate a different learning style from their antecedents, their teachers, and learn best by using graphics over texts, instant gratification, frequent rewards and working online” (Regueria and Rodriguez, 2015). As such, it is fundamental that instructors are aware of their digital natives’ learning style, needs and expectations for better learning outcomes.

Contrary to what Prensky, 2001 claims, just because digital natives are more adept at using technology than digital immigrants does not indicate that they are experts in the field. Concerns have also been voiced concerning the trend toward treating all twenty-first-century students as though they should use the same lingo as digital natives. DeVoss et al., 2010, for example, argued that treating today’s students as a homogenous group is a fallacy. They cited the example of Siva Vaidhyanathan, a media studies scholar who disputed the term “digital natives” arguing that in his tertiary teaching experience with youngsters, he remarked significant differences in how the so-called digital natives got acquainted

with technology. Vaidhyanathan cautioned scholars against using umbrella terms that do not account for students who either have not access to digital technology or do not have enough expertise to use them (DeVoss et al., 2010). Another misconception that teachers have to be aware of is that "simple access to technology tools will not ensure that students learn to be effective, thoughtful, and ethical digital writers" (DeVoss et al. 2010, p.28). Furthermore, today's learners may not recognize the educational worth of ICTs or may not be used to utilize technology for learning (Cerioli et al., 2012). McNaught, Lam and Ho (as cited in Cerioli et al., 2012: p.273) investigated today's learners how use a variety of digital technologies concluding that "students are indeed "digitally ready" but "there is no strong empirical evidence that students are committed to eLearning".

As the world is in a constant change and technology becomes increasingly ingrained in the lives of today's learners, "academic institutions will need to gear themselves to offering flexible learning programs through various technologies" considering that "the net generation's thinking and expectations are shaped by their experiences as net citizens and participants then they will bring those expectations into the educational context where Web 2.0 which is geared around interaction" (Motteram, 2010 p.124). As such, educational institutions should take the initial step to "integrate appropriate technologies" into the current educational paradigm, focusing not only on the technological skills and knowledge required to incorporate technology-based teaching but also on "the skills and knowledge needed to support a blended learning environment that makes appropriate and targeted use of technologies that support the overall learning goals" (Herrington et al., 2009 p.48).

2.8 Classification of Ict Tools in Education

There is no single classification of Ict tools in instruction as there exist several types of classifications. Some researchers classify them in terms of learning technologies such as e-learning, blended learning, in addition to mobile learning; while others classify them as media such as video conferencing, webcast and CD-ROM (Joseph, 2012). Other types of ICTs include learning management systems (LMSs) or virtual

platforms, videos, blogs, wikis, and forums (El-Mowafy et al., 2013). Perhaps the most common classification is the one proposed by Lim and Tay, 2003 as they made a distinction between the following:

- Educational resources: they are applications that provide access to extensive quantities of data in many forms (e.g., pdf documents, sound, SCORMAT, and video). One way to think about educational resources is as a latent database (Chen & Hsu, Lim and Tay, 2003). The present Internet-based multimedia encyclopedia is one such example along with the tools and databanks it contains. When it comes to information and communication technology (ICT) technologies for use in e-learning settings, the Internet is often regarded as the most prominent and significant.

- Resignation devices/situating tools are technologies that immerse students in a realistic simulation of a real-world situation. Simulation, virtual reality, and multi-user environments are all examples of systems that fit this description. Software resources, like as CD-ROMs, offer hypermedia applications that may improve teaching and learning in the classroom.

- Constructive tools are versatile tools that may be used to modify information and assist students in disseminating their knowledge or visualizing their comprehension. Microsoft Word or PowerPoint, for instance, have a significant influence on the educational environment and are extensively utilized in the majority of educational institutions to create memos, reports, letters, etc.

- Communicative tools are also systems that facilitate communication between professors and students, as well as between students beyond the physical confines of the classroom. These technologies may include email, electronic bulletin boards, WhatsApp chat, teleconferencing, and an electronic whiteboard. Importantly, E-mail is the Internet's most popular means of communication (Anurugwo, 2020).

Collaboration technologies include the Internet, which may be used for a range of collaborative tasks including meetings, conversations, document creation, and information sharing. Other solutions include interactive electronic whiteboards, e-mail messaging, Wireless Application Protocol (WAP), and mobile phones equipped with General Packet Radio Services (GPRS). According to Mona (quoted in Lim and Tay, 2003), these tools encourage spontaneous information exchange, knowledge creation, and personal development.

Considering the afro mentioned classifications, a vast array of tools have been utilized to serve educational purposes. In the remainder of this section, an emphasis will be made on Learning management systems (LMSs), Web 0.2, word processing and blockchain technologies as tools that have found their way in the realm of education.

2.8.1 Learning Management System (LMSs)

Learning management systems (LMSs) are online platforms that assist teachers in managing their educational coursework. They provide educators with a space for creating course content, such as lesson content, tasks, evaluations, assignments. LMSs are used to help educational institutions streamline the delivery of online learning, allowing for a more connected and providing a unique educational experience. Instructors may use an LMS to create digital courses with a variety of content, including syllabi, lectures, multimedia files, and readings, as well as allocate tasks to students. Online assessment features, such as quizzes and tests, are also a unique feature in LMSs. LMSs have gained popularity in higher education and became used "to assist in the delivery and management of learning-related material such as course notes, lecture recordings, e-assessments, and discussion forums, etc." (El-Mowafy et al., 2013, p.4). Moreover, LMSs are thought to be convenient because of "their continuous availability from any location given access to the internet. LMS can be used for both the delivery of fully online courses as well as the enhancement of traditional face-to-face classroom teaching" (El-Mowafy et al., 2013, p.5).

Learning management systems have their origins in distance education. Countries with a geographically dispersed population, such as Australia, adopted measures early in their history to allow students who could not attend formal educational institutions access to education. The School of the Air (a correspondence school) was one of Australia's most visible examples of distance education.

Turnbull et al., 2021 Suggests that the seeds of LMSs were found in Sidney Pressey's invention in the early 1920s of a "learning machine," a device that could expose questions through a window asking the user to select an answer out of the given choices or may be, they add " it was the work of a Canadian company, SoftArc in 1990 who built the first stand-alone learning system deployed on Macintosh personal computers, that encouraged software developers to dream of an online learning space" (Turnbull et al., 2021, p.2).

Regardless of its starting point, the Internet's arrival altered the way people interacted and engaged with one another, and education providers knew they would have to embrace to this brave new online world. Electronic learning management systems (LMSs) began as little more than a platform for the online distribution of learning materials. These systems could broadly be labeled as belonging to one of two binaries: proprietary and open source.

WebCT, designed at the University of British Columbia in 1995, was one of the first proprietary systems. WebCT was a web-based training program that was created in response to studies that suggested that providing web-based resources could improve academic performance. WebCT was the most widely used LMS in the world at the time, with over 10 million users in 80 countries. Open-source systems, on the other hand, were created collaboratively by software experts with the goal of making the source code freely available to businesses and individuals. Initially, they were popular with universities and colleges because they could easily download the source code, adapt it to their specific needs, and create their own custom LMS solutions. Perhaps the most recognized example of open-source system in global operation today is Moodle. Moodle was created by Martin Dougiamas who released its first in August 2002. The acronym Moodle stands for "Modular

Object Oriented Dynamic Learning Environment." The idea of the system stems from a constructivist philosophy which emphasizes the role of learners as creators of content and not just spectators. Moodle is thought to be the most widely known open-source LMS in use today with almost 100,000 recorded sites in 229 countries.

In a blending learning context, Kızıl and Kilimci, 2014 conducted a study that involves Moodle in an English course for Turkish engineering students, and the findings revealed that it helped the learners to gain control of their learning, enhanced their language learning experience, developed their grammar and vocabulary, and made it easy for the teacher to provide timely feedback on students' learning via Moodle. Şahin-Kızıl also clarfied that, using forums that exist in Moodle, writing was the skill that was developed the most thanks to collaborative writing activities . In the same line of thought, Radia, 2019b conducted an experiment that was carried at the Teacher Training School of Constantine in Algeria with thirty second year university students who enrolled in Blended learning reading instruction course. The main aim behind such experiment, according to the author, was to make practitioners gain a thorough understanding of the main characteristics of this innovative approach to course design. By the end of the study that was based on a questionnaire to sketch its data, participants demonstrated a positive attitude towards bended learning because they experienced an improvement in their reading skills and an increase in their learning motivation. All in all, Moodle proved to have satisfactory potential for language courses particularly in EFL as It provides the instructors with the appropriate tools to build an effective learning environment. During the COVID-19 pandemic and due to the lockdown, all education institutions have shifted to online learning and relied heavily on their online platforms (moodle) for teaching and tutoring students.

2.8.2 Web 2.0

Web 2.0 is a concept that refers to a series of web pages and applications that allow anyone to create and distribute online content or information. The ability to develop, distribute, interact, and connect is a key feature of technology. Web

2.0 is distinct from other types of websites in that it does not necessitate any web design or publishing expertise, making it simple to communicate their work to the world. The nature of this technology makes it an easy and popular way to communicate information to either a given group of people or to a much larger audience "where the user has more interaction" and has "a flexible web design, creative reuse, updates, collaborative content creation and modification" (Kujur and Chhetri, 2015, p.135). Institutes of higher education can make use of these tools to communicate with students to interact with students, faculty, and other members of the academic community. It can also be a useful tool for communicating with students and research collaborators. Wikis, blogs, social networking, folksonomies, podcasting, and video hosting services are some examples of web 2.0 applications.

Web 2.0 are considered to be the second generation of the World Wide Web and can be defined as "a read-write web" (Dougherty as cited in Kujur & Chhetri, 2015, p.134). Indeed, the main difference between Web 1.0 and Web 2.0 is that Web 1.0 is similar to going to a library where users search for information in bookshelves while in web2.0 one can participate in making that knowledge by creating and sharing content and not just receive. That is, in Web 1.0, information is only available if users go online, while in Web 2.0 users can "read/write" and be active participants and content creators. Web 2.0 technologies are characterized by "openness, user participation, knowledge sharing, social networking and collaboration, user-created content, and folksonomy" (An and Williams, 2010, p.1). Unlike Web 1.0, which offered "one-way communication—from the website owner to an audience" (Darwish and Lakhtaria, 2011, p.205), Web 2.0 tools offered a more interactive and collaborative environment which made it rapidly popular among web users and became as one of the most common educational tools. As it transformed the current educational environment, allowing knowledge sharing and promoting online learners, the integration of web 2.0 tools into education have became a trend. In figure 2.1, an attempt is made to highlight the main differences between web 0.1, web 0.2 and the recent web 0.3

	Web 1.0	Web 2.0
Era	1990-2000	2000-2010
Definition (according to Berners-Lee)	Read Only	Read/Write
Basic concept	Information sharing	Interaction
Technologies	HTML/Portals	XML / RSS
Type of web	Simple web	Social web
Number of users	Millions	Billions
Information flow direcion	One way	Two way
Example	Yahoo	Facebook

Figure 2.1: Comparison between Web 1.0 and web 2.0.

Wikis are an example of web2.0 tools that continue to be used in EFL instruction and can defined 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 form capable Web browser client" (Darwish and Lakhtaria, 2011 p.206). One of widely utilized wikis amongst students is Wikipedia which "demonstrates aspects of social software: it is collaborative …, displays multiple authorship, and is 'owned' by anyone" (DDudeney, Hockly, et al., 2007, 2007, p.94). Wikis are used for language teaching mainly for collaborative writing (Dudeney, Hockly, et al., 2007) since they are user-friendly and flexible, and can "enable learners to become part of an active learning community" (Aydın and Yıldız, 2014, p.208).

Wikis benefit language learners in a variety of ways, including promoting collaborative language learning, motivating learners, improving cultural awareness, facilitating autonomous learning, developing the sense of problem solving and critical thinking (Aydın and Yıldız, 2014). Another type of Web 2.0 tools which is also widely used amongst language learners is the blog (the shortening of Web log), which is defined as:

> An online journal usually displayed on a Web site that contains entries listed in reverse chronological order. Blogs combine text, images, hyperlinks, and in some cases, audio to provide information on a specific topic (Hricko, 2008, p.88).

Blogs simply "enable users, without requirement of any technical skill, to create, publish and organize their own web pages that contain dated content, entries, comments, discussion etc. in chronological order" (Darwish and Lakhtaria, 2011, p.206). Blogs are commonly used in language teaching and can be classified into three types: class blog, teacher blog, and student blog (Dudeney, Hockly, et al., 2007, 2007). Several studies have shown that blogs have a positive effect on language learning and teaching, such as assisting students with language complexity, grammatical correctness, and fluency (Dudeney, Hockly, et al., 2007; Ahluwalia et al., 2011, p.30).

Manca and Ranieri, 2016 suggested a critical examination of multiple research along the same line, investigating how Facebook is utilized as an instrument in a technology-based learning environment, in order to find out how much their pedagogical potential is actually transformed into reality. Similarly, Shariffuddin et al., 2017 intended to explore the advantages and disadvantages of emerging social networking tools in English as a Second Language (ESL) classrooms, particularly in writing lessons, and ended up with suggesting ways of designing activities by using social networking services (SNSs) for educational purposes.

2.8.3 Blockchain Technology

The concept of blockchain was first introduced by Nakamoto, 2008. Blockchain is a decentralized, trusted, and secured data sharing environment, and it enables distributed ledger technology that allows users to securely store, process, and share data in a peer-to-peer model. The technology has been widely applied in all the major areas of research including education, banking, supply-chain, health care, defense, governance, etc. (Yaqoob et al., 2019; Hasselgren et al., 2020). Despite the fact that some educational institutions are now using blockchain technology for e-transcripts, digital degrees, and certification, progress is still too slow to make a

meaningful impact in the education field. Still, blockchain technology's potential services can be extended to make a significant contribution to the education sector.

Several scientists and blockchain developers agree that the horizontal breakthrough required to change different industries is the blockchain technology. Three basic principles are involved in blockchain technology: 1) transaction, 2) block, and 3) chain. The transaction is a ledger process, such as the data entry, which often leads to a change in the ledger's status; the block tracks the outcomes of all transaction data over a period; the chain is a chronological string of clocks that represent all the ledger's changes. To ensure full data integrity and availability, blockchain architecture guarantees the following key concepts.

- *Data immutability:* Once data are stored it cannot be deleted or modified.
- *Shared ledger:* A network where all member has an immutable copy of all transactions.
- *Consensus:* Mechanism used to achieve agreement on a piece of data between all members of the network.
- *Permissions:* Blockchain can either be permissioned or permissionless, meaning that mem bers of a blockchain either have restricted access on a blockchain.

Several higher educational institutions have adopted the blockchain technology to design different learning solutions (Lam and Dongol, 2020). Few research works have been proposed to develop a framework for a blockchain based storage and verification of education records and academic achievements (Jirgensons and Kapenieks, 2018). MIT, for example, developed a digital learning certificate system using blockchain technology (Durant and Trachy, 2017). On the other hand, Sony Global education uses blockchain to redefine the future education; the platform stores and manages transcripts and high-security data in education. By using blockchain, the authenticity of the transcripts will be secured, and the examiner will be able to manage his data and share it with others safely. Finally, Mozilla's Open Badges project provides a solution to get recognition for skills and achievements that happen outside of school and encourages lifelong learning.

2.9 The Use of Technology in Language Instruction: Computer Assisted Language Learning

The field that focuses on the use of computers in language pedagogy is referred to in research literature as CALL which is an acronym for Computer Assisted Language. In fact, a wide variety of media technologies proved to have the potential to cover the needs 21st teachers and learners as it calls for more humanistic, student centered and communicative approaches (Training Agency.1990). CALL is described as a process of language acquisition during which computers have a substantial impact on enhancing their language ability (R. W. Beatty et al., 2003). In this definition, computer is an umbrella term that refers to all kinds of technologies that are included into the process of teaching and learning, not necessarily desktop computers. It can be defined as "a research field which explores the use of computational methods and techniques as well as new media for language learning and teaching" (Gamper and Knapp, 2002). In this regard, (Brinton, 2001, p.461) clarifies that: "media material may lend authenticity to the classroom situation, reinforcing for the students the direct relation between the language classroom and the outside world".

A further definition of CALL is given by Egbert in which he explains that CALL is "a field that covers the search for and study of applications of the computer in language teaching and learning", and "optimal, technology-enhanced language teaching and learning environments; that is, language and content settings in which technology was used as effectively as possible to support learning" (Egbert, 2005, p.3). In the same line of thought, (C. Chapelle, 2010, p.66) referred to it as:

> A variety of technology uses for language learning including CD-ROMs containing interactive multimedia and other language exercises, electronic reference materials such as online dictionaries and grammar checkers, and electronic communication in the target language through email, blogs, and wikis.

Other terms are found in literature that are thought to be synonymous CALL such as: Computer Assisted Instruction (CAI), which is the classic label of CALL,

Computer-Based Instruction (CBI), Computer-Assisted Language Teaching (CALT), Computer-Assisted Language Testing (CALT), Computer-Enhance Language Learning (CELL), Technology-Enhanced Language Learning (TELL), Computer-Based Language Testing (CBLT) (Egbert, 2005; Y. Yang, 2010), and many more. However, Tafazoli et al., 2019 explains that unlike CAI and CALT, the focus of Computer-Assisted Language Learning (CALL) is on learning rather than teaching, therefore, it is based on a student-centered approach rather than a teacher-centered one.

According to Hubbard (2009: p.2 as cited inRahimi and Pourshahbaz, 2018b, p,3) there are a number of benefits for adopting CALL in the process of teaching and learning languages. From this, we summarize the following:

- **Learning Effectiveness:** Faster and easier or less-effortful acquisition of language knowledge
- **Access:** Learners can obtain resources or get engaged in activities that would otherwise be challenging or impossible to get or do;
- **Convenience:** Students can study and practice effectively at a larger variety of times and locations;
- **Motivation:** Learners find the language-learning process more enjoyable and therefore, are more engaged;
- **Institutional Efficiency:** Learners need less teacher time or fewer or less expensive resources.

According to Warschauer and Healey, 1998, the intergration of CALL in the learning environment will provide solutions that will:

1. Provide authentic, native-speaker contexts of the language in a variety of media;
2. Provide a language learning curriculum;
3. Perform a needs assessment;

4. Decide the subsequent step for the learner and offer practice with that skill area;

5. Make a record for what the student has performed, along with an evaluation, and;

6. Availability at any hour with no requirement of additional pay or benefits.

2.10 History of CALL

2.10.1 Early CALL and Mainframes: 1950s and 1960s

In the early days of CALL, the United States was the leading nation. The importance of teaching language for military purposes in a professional and scientific manner in the 1950s led to the use of large and costly mainframe computers as the first application of computers in language learning accessible at universities. The first CALL programs were produced at SRI in competition with the USSR during the Cold War (1945-1991).

Developed by the University of Illinois in 1959 Programmed Logic/Learning for Automated Teaching Operations (PLATO) system, appeared as one of the first and most recognized CALL systems in teaching Russian by using the grammar translation approach. PLATO's initial emphasis was on translating Russian texts; later, in the early 1970s, Curtin and his colleagues enhanced it by adding "grammar explanations, vocabulary drills and other drills and translation tests over a course of 16 lessons requiring 70 hours to complete" (K. Beatty, 2013 pp. 20- 21 cited in Tafazoli et al., 2019). Davies, Otto, and Rüschoff (2013 p. 21) Davies et al., 2013 listed numerous features for the most recent PLATO system, PLATO IV, such as "the plasma graphics terminals, multimedia capability using a computer-controlled audio device, the touch-screen input option, centralized storage and delivery of large amounts of instructional material and an online community space". As the PLATO offered extra up-to-dated features like reviewing, spelling and grammar-checkers, it could be called 'intelligent CALL' (ICALL).

2.10.2 Microcomputers: 1970s and 1980s

High-end mainframe computers were also available for CALL analysis in the 1970s and 1980s. The University of Texas and Brigham Young University (BYU), in conjunction with Mitre Corporation, began producing English and Mathematics instructional materials in 1972. To achieve the latter, they launched 'Time-shared Interactive Computer Controlled Information Television' (TICCIT), which is a hybrid of computer and television technologies (Davies et al., 2013). The fact that TICCIT did not prescribe the learner's path was a unique feature of this project. (e.g. learners could move freely through the courseware). Furthermore, Boyle, Smith and Eckert (1976) created a computer based diagnostic test for French language on a mainframe computer (C. Chapelle, 2010). In the meantime, the US was still the dominant country for CALL operations. According to Olsen, 1980 study on CAI in foreign languages, computers were used in language education by over 60 language departments from 52 institutions in 24 states. However, Rex Last reported minimal activity in CALL at the University of Hull in the UK during the late 1970s.

During that decade, videodisc technology, which allowed computers to move beyond text-based tasks, was a key focus of CALL research. The CALL research stream was transferred to Compact Disk Read-Only Memory (CD-ROM), a smaller and more portable format, and then to DVD, a larger volume media. (Beatty, 2010 cited in Tafazoli et al., 2019). Bush and Crotty, 1991 (p. 86-87) cited benefits of videodisc in comparison to conventional teaching a) more meaningful, b) an intelligible context with numerous extralinguistic clues, and c) inspire students' problem-solving abilities.

The 1980s was the golden age of CALL in which many great contributions were made (Tafazoli, 2019). Moreover, the advent of microcomputers affected CALL's position, and two professional organizations were created: CALICO in the USA (1982), and EUROCALL in Europe (1986).

The Athena Language-Learning Project (ALLP), sponsored by the Massachusetts Institute of Technology (MIT), was a five-year endeavor run in conjunction with

Digital Equipment Corporation (DEC) and International Business Machines (IBM). ALLP took advantage from UNiversal Interactive eXecutive (UNIX) (or UNiversal Inter-eXchange or UNIversity eXchange) workstations, that were "connected to each other and to textual and visual databases through a Local Area Network (LAN)" (Beatty, 2010, p. 29 cited in Tafazoli 2019). Murray et al., 1989 counted three benefits of the ALLP system: 1) the encyclopedic knowledge usually associated with print that can be recalled with the speed of the computer; 2) the use of models of the language provided by multiple speakers usually associated with television or film materials; and 3) the use of interactivity usually associated with more rudimentary drill-and-practice routines (Murray et al., 1989, p. 101). Two videodisc-based simulation ventures, No Recuerdos and la rencontre de Phillippe, were also popular CALL programs during that decade.

In 1984, Apple Computer released HyperCard, a materials authoring program. This program was one of the first of its kind in the Macintosh world. HyperCard was one of the first programs to incorporate hypertext and hypermedia capabilities, allowing users to add text, images, audio, animations, and video to a set of virtual index cards (K. Beatty, 2013).

ICALL first appeared in the CLEF (1985) and TUCO II programs in the mid-1980s. Learners were given "extensive tutorial sequences, discrete error analysis, and feedback" through these programs (Davies et al., 2013). Artificial intelligence (AI), semantic and syntactic parsers, in combination with microcomputers and shifting from drill-and practice to communicative competence led to the development of the Spanish game Juegos Comunicativos (Bassein & Underwood, 1985) and the German game Spion (Sanders & Sanders, 1995). Also, the evolution of Information and Communication Technology (ICT) in education sparked the integration of concordances in the language classrooms – Data-Driven Learning (DDL). This discovery oriented approach was of a great benefit to learning and teaching grammar and vocabulary (Rahimi and Pourshahbaz, 2018a).

The main shortcoming of that time, according to Davies, Otto, and Rüschoff (2013), was that "microcomputers did not have the capability of capturing and

playing back sound" (Davies, Otto, and Rüschoff, 2013. P28). In 1988, with the launch of sound cards, a new invention was made by adapting "truly interactive digital sound-enhanced CALL applications" (Davies et al., 2013, p. 29).

2.10.3 Multimedia PCs & the Internet: 1990s

In the 1990s, multimedia PCs ushered a new age of CALL. Drill-and-practice systems have become more communicative because of advances in ICT and computer science. By releasing the first software, Just Grandma and Me, in 1992, which combined text and sound in three languages, 'Talking Books' CD-ROMs gained popularity. Simulations on CD-ROM such as Nuevos Destinos (Tafazoli, 2019), and Who is Oscar Lake? in 1995 became dominant CALL programs. CD-ROMs-based programs like Encounter Series in 1997, Triple Play (later renamed Smart Start), Talk to Me and Tell me More series provided students with variety of learning opportunities by involving them in listening and responding tasks (Davies, Otto, & Rüschoff, 2013).

Davies et al., 2013, (p. 31) asserted that the "appearance of World Wide Web is probably the most significant development in ICT during the last 30 years". Fostering drill-and-practice principle, Hot Potatoes is an example of web-based interactive tool that involves multiple tasks of multiple choice, gap-filling, crosswords, etc. (Arneil and Holmes, 1998).

New terms, resources, and CALL-related terminology such as "e-learning," "online learning," and "virtual learning environments" (VLEs) provided a variety of teaching and learning opportunities for both language teachers and learners, as well as promoting teacher-learner and peer-to-peer communication. The UK Open University used Moodle, an open-source VLE, to offer a wide variety of courses in the late 1990s. Furthermore, new applications for language learning and teaching arose as the Internet increased in popularity and speed. MUDs (Multi-User Domains) and MOOs (Multi-User Domains Object Oriented) were two of the most common ones. To explain it, "MUDs were originally designed as textbased, role-playing adventure games to be engaged in across computer networks but

they also offered opportunities for collaboration and education, including language learning" (Davies et al., 2013). In MOOs, language learners (players) log in and interact synchronously or asynchronously with other learners .Virtual worlds, also known as multi-user virtual environments (MUVEs), are virtual worlds in which language learners interact with each other in three-dimensional environments (Sadler et al., 2013; Svensson, 2003) .

2.10.4 Emerging Technologies: the 21st century

The incorporation of technology into people's everyday lives in the twenty-first century has changed the shape of CALL programs. Various commercial companies, governmental and non-governmental entities, colleges and institutes began to deliver complete language courses via the Internet, in the form of apps, mobile applications, and other means. Because of the disadvantages of e-learning, a new concept called "blended learning" came into existence. Web 2.0 technologies were popular in 2004, providing language learners with a variety of learning opportunities through social networking sites and applications such as MySpace and Facebook, which enable them to interact with native speakers of the target language. Various web-based communities such as discussion lists, blogs (Yim and Warschauer, 2017), Wikis (Y.-C. Wang, 2014), podcasts (Thomas, 2009) Thomas, 2009, vodcasst (Sadeghi and Ghorbani, 2017), social networking sites (SNS), and social media tools (Barnes, 2017); X.-B. Chen, 2013), and others, are the outcome of Web 2.0 technology.

Importantly, the widespread availability of mobile and portable devices such as smartphones and laptops has contributed to the development of a new term called Mobile-Assisted Language Learning. (MALL). Despite the fact that some scholars in literature assume MALL is distinct from CALL Kukulska-Hulme and Shield, 2008, others consider MALL to be a subcategory of CALL. A number of studies have shown the utility and efficacy of portable devices in language learning and teaching: mobile phones (Xu and Peng, 2017), tablet PCs (Y. Chen et al., 2017), and MP3 players (Demouy and Kukulska-Hulme, 2010). Furthermore, other

applications of mobile phones functions and capabilities are also tackled by scholars: video recording (Gromik, 2012), GPS (Sandberg et al., 2011), QR (Quick Response) codes (D. J. Rivers, 2009), short message system (SMS) (Kennedy and Levy, 2008). Despite MALL's affordances (C. White and Reinders, 2010), some challenges and limitations have been reported (Reinders and Hubbard, 2013).

2.10.5 CALL during Covid-19: Education 'From Face to Face to Interface'

At the onset of 2020, the world faced a health crisis known as COVID-19 that has spread globally. As a protection measurement, higher education has decided to held all remaining courses online during Spring 2020 to finish the academic year (Aguilera-Hermida, 2020). To help maintain a secure and stable learning environment, higher education communities contain the virus' spread by defending academics, employees, and students who were at risk. Several countries have adopted infection prevention and control initiatives to minimize COVID-19 transmission by restricting people's communication and shutting down universities (WHO, 2020). Governments proposed or mandated physical isolation and movement restrictions (CDC, 2020). Many colleges and universities have moved to remote learning, where classes were streamed on the internet (Aguilera-Hermida, 2020). Some higher Institutions were giving asynchronous classes in which teachers plan assignments or record lectures and students can work on them at their own pace yet there is some evidence to propose that online learning during the pandemic returned with benefits. Odriozola-González et al., 2020 made an analysis of students' performance during COVID-19 and concluded that students made an advance when compared with a cohort from the precedent year.

In the time of turmoil caused by the so-called Covid-19, many companies raced to develop software and applications for both Computer-Assisted Language Learning (CALL) and Mobile Assisted Language Learning (MALL) (CALL).These applications and software served as a haven for most of institutions and universities during the Covid-19 pandemic. One of these is Google Classroom application that

gained wide acceptance in the academic sphere as it maintained both the students and the teachers to stay connected by creating a virtual space. Researchers like Halverson et al., 2017 emphasized that Google Classroom (GC) is more practical compared to other platforms since it allows face- to face interaction. On the other hand, some studies stressed the efficacy of Zoom as an application in the EFL context. Studies like those of Ayoub, 2019 suggested that Zoom can be beneficial in the EFL classroom because of its utility in designing activities that fit the students' needs for virtual learning environment. In the same vein, other studies highlighted the significance of the application as a part of synchronous learning to enhance the students' thinking skills, and problem-solving. In this light of thought, Chen and Lee (2011) believed that:

> During the zoom session, students may ask questions to help them structure their sentences or do their assignments before posting them; they may be exposed to listening input to increase their schemata that develops their error correction system which is directly linked to conscious learning of a language. At the same time, students receive the essential feedback on their work from their teacher and classmates which can decrease the anxiety levels felt when sharing with others. (Ayoub, 2019, pp. 131-132)

Other studies were conducted to investigate the impact of Zoom sessions on students' linguistic skills. Liang, 2006 found that the use of Zoom can improve the learners' writing skills through text chats. Furthermore, according to Liang (2006), the Zoom session can affect students' motivation toward e-learning and their face-to-face interaction. Despite the existence of numerous studies on the use of Zoom in the EFL context, the topic still remains an interesting area of research. Indeed, most of the studies conducted were exclusive to classroom environment and students' attitudes towards the e-learning experience.

In the Algerian context, Ghounane, 2020 conducted a study looking for what technological tool students preferred during the pandemic. The researcher administered a questionnaire to students of Taher Moulay University of Saida and found out that that most learners welcomed the idea of using the Moodle platform in learning English, but they are still Social networks practitioners since they are

accustomed to sharing their knowledge, feelings, and social lives through these platforms, mainly Facebook. The researcher concluded that most common tool in Saida University during Covid 19 for educational purposes was Facebook due to the students' motivation.

2.11 CALL Research Scope

Since its appearance as a pedagogical tool, CALL integration within EFL classes continues to be an exciting area of interest to researchers. During early CALL research shed light on the language performance of students who were exposed to CALL programs. Different teacher-made programs were put under scrutiny to check how students would perform in computer-based environment compared to traditional learning context. The findings of most of these studies were in favor of CALL as it proved to be an efficient tool to improve students' language proficiency.

Later, with the appearance of cognitive paradigm, the interest shifted to the process of the individual development, strategies, and competencies rather than the final performance of students when they were involved within CALL software and applications. Various ways of measures such as motivational questionnaires, observations, recordings of keystrokes, and think aloud protocols were used to collect data. Interestingly, the results of these studies reported that CALL raises students' motivation and interest while reducing their anxiety and fear of language classes to a great extent. In contrast, scant research indicates that there are no statistically significant performance differences between experimental and control groups attributable to the usage of CALL (Zaghlool, 2020).

Then, the socio-cognitive paradigm emphasized learning through computer networks and the method in which discourse and discourse communities develop when computer networks are connected (Warschauer, Kern, et al., 2000). While research on these subjects is still ongoing, many of its findings are consistent with mobile learning, remote learning, and e-learning, all of which involve language learners using the internet to access online courses or converse with virtual interlocutors.

2.12 Modes of Instructional Call

CALL has progressed in tandem with the advancement of ICTs. According to Y. Yang, 2010, there are three types of CALL models: computer-assisted classroom teaching (also known as on-site learning in literature), hybrid teaching or blended learning, and fully online courses or e-learning. Modern technology has not only incorporated but also influenced learning and teaching models (Yang, 2010). More opportunities have arisen as a result of technological advances.

The Internet and computer-mediated communication (CMC) have changed the role of computers in language learning from a tool for information processing to a tool for communication at the end of the twentieth century (Warschauer and Healey, 1998). It became possible for language learners to interact both synchronously and asynchronously with other language learners or speakers of the target language. Synchronous or "real-time" communication can take place by the use of special software programs for local area networks, such as Daedalus Interchange by Daedalus Inc., or through the Internet using a variety of chat media. Warschauer (1998, p.64) notified that "computer-assisted discussion over local area networks has been especially popular in the United States, in foreign language, ESL, and English composition classes".

2.13 Computer-Assisted Classroom Teaching or Onsite Learning

On-site learning or teaching, according to the American Society for Training and Development, typically refers to conventional classroom training, in which a teacher delivers a course to a group of students using technological means such as desk computers. The terms instructor-led training (ILT) and classroom training are used interchangeably (c-learning).

2.13.1 Distance Learning

Distance education is an educational system in which teaching and learning activities are carried out by teachers and students in various environments using communication technologies and mailing services. It is defined as "that learning which is based upon a mediated didactic dialogue between the teacher and the student, who, in turn is placed in a different space and who learns in an independent and/or collaborative form" (García Aretio, 2004, P. 254). Students can access education through a network of different technologies via distance learning. Without needing to be physically present in the same place, the teacher and student communicate at a distance. Via audio, video, and computer technology, distance learning allows students more flexibility in achieving their educational goals.

Distance education approaches are implemented in two ways: synchronous and asynchronous. Synchronous communication is face-to-face communication that takes place at the same time but does not involve people to be in the same place at the same time. This method of communication is used in distance education to exchange data and knowledge through using technology. Asynchronous applications, on the other hand, present course material to students in a one-way manner, with no space for interaction. In this application, TV broadcast systems or materials such as books, CD ROMs, newspapers and video tapes are used (Jonassen, 2000).

It is generally held that distance learning in higher education is not relatively new. The phenomenon of students learning in an asynchronous manner through formal institutions dates back to the 1800s. The first distance education course is traces back to 1840s and was delivered by Sir Isaac Pitman who taught a system of shorthand by mailing texts transcribed into shorthand on postcards and receiving transcriptions from his students in return for correction. Pitman's framework included a critical component of student reviews. The introduction of standardized postage rates throughout England in 1840 made this scheme possible. Later on, with the establishment of the Open University in 1969, distance multimedia teaching began to integrate audio and video media into written texts during the

1960s. Although interactivity was not yet improved, the telephone was first used to link students to their teachers.

The telematic era began in the 1980s, and it combined telecommunications with other forms of education. Computer-assisted Learning favored actions such as flexible systems, radio and television educational services, and audio and videoconferencing as personal computers became more widely used. Finally, the Web-based learning paradigm, which employs interactive multimedia systems and computer-mediated communication, dates back to the 1990s, and its most distinctive characteristic, that education is driven by means of networks and multimedia workstations which hold systems relaying in the Internet by means of synchronous and asynchronous communications. The most remarkable change of this phase is the rapidity and immediate feed-back and interaction which take part in the teaching and learning process.

Today, many universities around the world provide distance learning through the internet. Students enrolled in distance education programs are able to continue their education without having to leave their homes. Distance education allows students to complete their programs without having to present in their institution. It crosses the boundaries of today's conventional educational institutions and turns education into a virtual reality by excluding it from the international arena. Important to mention, during the Covid 19 outbreak many universities around the world resorted to distance learning as a protective measure.

2.13.2 Blended Learning

The term "blending" is associated with the process of mixing. It is the method of effectively combining various modes of delivery, teaching models, and learning styles in an interactively meaningful learning environment in the field of education (Kaur, 2013). BL that "centers on the integration of different types of resources and activities within a range of learning environments where learners can interact and build ideas" (Littlejohn and Pegler, 2007, p.1) is often used to describe a form of education in which online learning is paired with conventional classroom

instruction to make a new innovative teaching/learning procedure. Tomlinson and Whittaker, 2013 (p.11) assumes that the word "Blended Learning" became common in ELT after Sharma and Barrett's book "Blended Learning" was published in 2007. Despite the fact that BL is a widely used educational strategy, researchers cannot agree on one single term when referring to the same course characteristics. Many words like "blended," "hybrid," and "mixed" are used interchangeably to refer to the same approach.

This method of 'blending' arose in response to the drawbacks of both e-learning and traditional learning. On the one hand, students' motivation was low as a result of the lack of socialization between learners and teachers due to the lack of physical interaction and the lack of "instant" synchronous online activities. Face-to-face (f2f) teaching, on the other hand, has been found to limit learners' ability to think deeply, communicate, and receive feedback due to time and space constraints. As a result of this shortcoming, researchers devised a new approach called "the BL instruction," which incorporates human interaction (Sethy, 2008).

According to BL, the best way to achieve optimal learning is to combine both learning environments. The incorporation of social networks into education allows for "socialization" to occur both through face-to-face interaction and the ability to deliver synchronous online lectures. According to D. R. Garrison and Kanuka, 2004, "learners can be independent of space and time yet together". Likewise, the flexibility of online sessions allows resolving time and spacing constraints.

Many definitions have been suggested of BL being referred to as a "combined framework" that involves both a face-to-face (f2f) and an online component (Sharma and Barrett, 2008). According to Clark and Mayer, 2016, there is no exact description of BL. Many people are perplexed by the word "blend" since any teaching experience is the product of mixing different teaching resources and strategies. Different perspectives have emerged as a result of this situation. Some scholars tend to give a broad definition to the term, while others narrow it down to the point that it has been allocated percentages of its constituents. Two references that could function as examples would be those of Staker and Horn, 2013 (p.3)

and Dudeney, Hockly, et al., 2007 (p.138 –139) . The former defines BL as any "program in which a student learns at least in part through online delivery of content and instruction … and at least in part at a supervised brick-and-mortar location…", whereas the second puts BL courses as those having 75 percent of online content and 25 percent delivered f2f.

Other researchers perceived the term as a continuum that spanned between fully online and fully physical events. For example, Bath and Bourke, 2010 and Twigg (2003, 29-35) mention three BL models: the supplemental, the replacement, and the emporium model. In the supplementary model, technology is used to facilitate learning but the conventional teaching approach remains unchanged. In the replacement model, technology is used to improve the quality of learning by integrating an online dimension into the curriculum. In the emporium model, courses are delivered completely online with no physical interaction needed. Some researchers prefer to confine BL to the confines of "the substitution model," as other models do not represent the BL rational when no real shift in instructional strategy is involved.

Caraivan, 2011 clarifies that BL is "an on-going process that develops with every teacher or trainer who applies it". That is, the nature of BL instruction is largely "situational," as it is influenced by the learning situation and its variables. However, calling BL a "situational approach" does not imply that it is a "haphazard" method-mixing strategy; rather, it is a "principled" approach that seeks to "optimize the learning outcome." (Singh, Reed, et al., 2001,p.1). To achieve such aim, some principles must regarded such as "learner-centeredness", "socialization", "active learning", "self-regulation" (Bonk and Graham, 2012;Smart and Cappel, 2006).

BL has a number of benefits, including encouraging engagement, prompting feedback, reducing student anxiety, and enhancing critical thinking skills. It is also claimed that BL lowers the teachers' hectic workloads by enabling them to spend more time on tasks such as choosing adequate materials that meet learners' needs (Buran and Evseeva, 2015). Moreover, students will take full responsibility

for their own learning as the teacher's position transitions to that of an educational facilitator.

Research (Krasnova and Ananjev, 2015; Bouguebs, 2019; Dakhmouche and Abderrahim, 2019) indicated that student satisfaction levels increased in BL course settings, and that when given the option to enroll in face-to-face or blended sessions, most frequently they chose the latter. Their desire to embrace this new learning environment grows as they gain more flexibility in manipulating their own learning according to their own speed of learning, where time and place are under their control. Below is a list of the main factors that influence learners to select a BL educational environment, as stated by Norberg et al., 2011 and his companions:

- Through the Internet, students had access to a seemingly endless supply of informational resources;
- They were able to communicate with the teacher, one another, and people all around the world in a flexible manner.
- The borders of conventional classrooms are vaporized by BL.

Countless studies have supported the use of the BL method in EFL teaching and learning environments. Krasnova and Vanushin, 2016 proved in a study conducted at Russia's Polytechnic University that BL course design has enormous potential in teaching foreign languages because it allows for the integration of creative and technical advancements in online learning with traditional classroom instruction. In a different EFL setting, Y.-F. Yang, 2012 discovered that blended learning not only improved students' reading proficiency, but also facilitated social interaction, as students had more opportunities to discuss their reading difficulties during group discussions and request individual feedback from their classmates. Blends of online and face-to-face training have, on average, led to more effective learning outcomes than face-to-face instruction, according to a meta-analysis of 23 experimental or quasi-experimental research carried by the United States Department of Education (Means, 2010).

It is therefore with no surprise that the four main reasons namely: the ability to satisfy students' educational needs, prompting student-to-student interaction, reducing the average overall per-student cost, and improving student learning outcomes as well as reducing attrition rates, increasingly tempt more and more educational institutes to embrace the blended learning approach. Yet, it is important to note that the efficacy of blended learning does not happen haphazardly, just because an online component is added to a face-to-face environment (Cheung and Hew, 2011). As the New York Times (2013 : p.22) clarifies, "hybrid [blended] courses are rare, and teaching professors how to manage them is costly and time consuming". That is, it is not sufficient to just post course contents on a web site for students to download for a blended-learning course to be effective. Nor is the mere addition of more resources such as video or online quizzes appears have an impact on the amount of student learning (Means et al. 2010). Central to the effectiveness of blended learning approach is the conviction that it is the adopted approach or instructional strategy used which decides whether learning takes place, rather than the mere physical characteristics of the medium.

2.14 Conclusion

With the never ending rise of technology, an abundance of nontraditional ways and resources for learning have become available at teachers and students disposal, and it is up to both of them to use it to their advantage. The use of educational technology in the classroom along with the 21st century skills will facilitate and improve the student learning experience to a substantial extent, and both teachers and students can greatly benefit from combining these variants and incorporating them into the curriculum.

Chapter 3

The Writing Skill Within the Socio-cultural Theory

Contents

3.1 Introduction

Compared with other skills, writing is viewed as the most essential and sophisticated skill which requires simultaneously a cognitive ability and a good control of its components. The disputation over definitions of writing stems from the purpose(s) scholars set for their theory. Still teachers are expected to constantly seek for effective strategies that would facilitate the writing process, and assist learners to go beyond their language difficulties. Many scholars have called for the importance of including teachers scaffolding techniques in which teachers have to provide their learners with scaffolding to accomplish tasks, which they cannot do independently. This chapter is a review of literature that aims to draw the boundaries of our current

research by discussing relevant terms namely the writing skill, the process approach and scaffolding. Deriving from the state of the art, we seek to review critically works on the subjects, clarify terms and highlight significant issues that have directed research in second language writing. We also aim in this chapter at unveiling the different teaching approaches to writing that the educational setting witnessed.

3.2 The Writing Skill

Deeply embedded in the realm of foreign language teaching, learning skills have been classified into two major categories: listening and reading as the receptive ones, and speaking and writing as the productive ones. Writing, in its simplest terms, has been thought to be the use of graphic symbols for the sake of communication. These symbols, that developed to what became known today as letters, are combined into words that weave together to form sentences until a text level is achieved.

In this line, Crystal, n.d. (p.214) states that "Writing is a way of communicating which uses a system of visual marks made on some kind of surface; it is one kind of graphic expression". For Bloomfield "Writing is not language: but merely a way of recording language by means of visible marks" (cited in Crystal 1999: P.178). Hyland, 2003 regards it as "marks on a page or a screen, a coherent arrangement of words, clauses, and sentences, structured according to a system of rules". He also sees that writing as "composing skills and knowledge about texts, contexts and readers"(ibid). For Emig (cited in Tarantino 1988: p.47), it is nothing but "a learned behavior which in turn can become a source of learning".

However, defining what writing is may vary considerably in relation to the constant changes that writing has gone through. Indeed, writing can be positioned across a continuum of two contradicted views, one takes the process of the writing activity as its main focus while the other focusing on the outcome of that process, the product. According to the Product Approach advocates, writing is "seen as a product constructed from the writer's command of grammatical and lexical knowledge, and writing development is considered to be the result of imitating and manipulating models provided by the teacher"(Hyland 2003: p.3). On the other

hand, writing in the process approach is regarded as "as a-linear, exploratory, and generative process whereby writers discover and reformulate their ideas as they attempt to approximate meaning" (Zamel cited in Hyland 2003: p.11). In English for Academic Purposes, it implies "the production of prose that will be acceptable at an American academic institution and learning to write is part of becoming socialised to the academic community" (De Silva, 2015, p.17).

Although these definitions might not lead to a single description of writing, perhaps a good one may be summarised in the following statement: "writing is an act that takes place within a context, that accomplishes a particular purpose, and that is appropriately shaped for its intended audience" (Hamp-Lyons and Kroll 1997: p.8 quoted in Weigle, 2002). Therefore, it is the process of encoding internal representation (of ideas) into a written text.

Additionally, R. White and Arndt, 1991 view that writing is an acquired activity that needs to be learnt and practiced. As such, "it is a skill that must be learnt by doing it" (Turk and Kirman, 1989:28) Kirkman and Turk, 2002 as it needs conscious and mental effort as it is a cognitive process where one should take into account various aspects such as: word choice, punctuation, sentence structure. W. M. Rivers and Temperley, 1978 point out: "To write as that one is really communicating a message isolated in place and time is an art that requires consciously directed effort and deliberate choice in language". That is, Rivers and Termperly see that writing is a complex process that needs to be assisted by practice.

3.3 Why is Writing a Difficult Skill to Achieve?

The ability to be a fluent speaker, persuasively, is an everlasting object which is hoped to be reached by most people in first, second or foreign language. Yet, the ability to write effectively and eloquently is something that sidesteps many people in their native language as well as in other languages in spite of the huge amount of time devoted to the teaching and learning of this skill. So, why is writing a difficult skill to learn?

Writing has been defined as the process of transferring ideas into a written piece. This makes it a challenging skill to master because it calls for both mental and physical effort on the writer's part. In fact, according to Byrne, 1979, there are three different types of issues that can make writing difficult:

- Psychological, caused by a lack of communication and criticism between the writer and the reader.

- Cognitive, because controlling the organizational structure of our thoughts is necessary for written communication.

- Linguistic, because body language and facial expressions, which are part of spoken language, are not present in writing, we must explain ourselves in writing in a clearer and more effective way than in speech.

As a result, the writer must manage a variety of aspects at once, including the writing process, organization, grammar, syntax, word choice, and content. The combination of these factors makes writing a difficult and complex skill. Many linguists and educationalists claim that writing in one's first language is challenging and necessitates formal training as well as, more importantly, a deliberate mental effort. As noted by Schoonen et al., 2003, L2/FL learners appear to have it considerably harder:

> Writing in a mother tongue in a demanding task that calls up upon several language abilities, as well as upon more general (meta) cognitive abilities. These constituent abilities are in a constant interplay. Writing in a second language is even more demanding, because several of these constituent abilities may be less well developed than in one's first language. For example, linguistic knowledge of the L2 may be limited, and the accessibility of this knowledge may be less rapid or automatic.

Similarly, Kroll, 1990 (p.140) clarifies the nature of difficulties encountered by ESL writers:

> For English as a second language (ESL) students, it seems fair to say that writing is particularly difficult. ESL students must learn to create written products that demonstrate mastery over contextually appropriate formats for the rhetorical presentation of ideas as well as mastery in all areas of language, a Herculean task given the possibilities for error. It is partially the multiplicity of skills involved which contributes to the overall difficulty of writing.

In essence, writing is a challenging skill because it requires a variety of competencies at once. For L2 students, this complexity is doubled because they must also deal with the challenges posed by the target language.

3.4 A Survey of the Teaching Approaches to Writing

In order to teach writing effectively in a second or foreign language, professionals need awareness and a global understanding of the existing approaches and principles of teaching composition. Therefore, the necessity of surveying the history of teaching approaches of writing in L2 classes becomes evident.

For a long time, teaching writing in any setting was mostly abandoned and tested more often than it was actually taught. Because of this, the emphasis was placed on student output rather than instruction, and language was perceived as "primarily what is spoken and only secondarily what is written" (Brooks, 1964, p.49).

Writing for academic purposes only started to acquire popularity and become essential to successful language learning after the 1960s, particularly in the United States. Structuralism, which placed a strong emphasis on the value of teaching writing, was the dominant learning theory during this time. As a result, according to Raimes, 1983, these are the primary strategies for teaching writing.

3.4.1 The Controlled-Free Approach

The audio-lingual method predominated in second language acquisition during the 1950s and the early 1960s. The knowledge of grammar and syntactic forms was

crucial because writing was only seen as a way to support speech, which received a lot of attention. As stated by Raimes (1994:10) "speech was primary and writing served to reinforce speech in that it stressed mastery of grammatical and syntactic forms Here, students are asked to modify words, combine phrases, or clauses to control the majority of the writing process. Leki adds :"the writing is carefully controlled so that the students see only correct language and practice grammar structures that they have learned" (1992: p.8). According to Raimes, 1983, it is the method that emphasizes three features: grammar, syntax and mechanics. When students are able to master these, typically at an advanced level, then they can be encouraged to engage in autonomous writing.

3.4.2 Free-Writing approach

In this method, substance and fluency are prioritized over accuracy and formality. Teachers that employ this strategy are supposed to provide students free writing assignments on predetermined topics with little to no editing or other assistance. The quantity of writing, not the quality, is what matters. Once the thoughts are written down, grammar and order will progressively follow. (Raimes 1983: p.7).

As a result, in a typical free-writing session, a teacher can instruct his learners to write freely and without concern about errors about a subject that interests them. In contrast to the Controlled-Free Approach, the teacher just needs to provide necessary remarks on the students' free writing rather than correcting it. Supporters of this strategy believe that grammar proficiency can be acquired over time.

3.4.3 Paragraph-Pattern Approach

This method emphasizes the value of linguistic organization over grammar correctness or subject fluency. Students are taught to develop an awareness of the English features of writing by copying model paragraphs, rearranging scrambled sentences, identifying or writing topic sentences, and inserting or deleting sentences. The paragraphs, the sentences, the supporting ideas, cohesion, and unity are the most important points that are dealt with (Raimes, 1994: p.12).

3.4.4 The Grammar – Syntax – Organization Approach

As the name suggests, this method uses writing assignments to assist students focus on organization while also working on grammar and syntax, which are essential for completing the writing assignments. That is, teachers need to stress the importance of working on more than one feature. As Raimes (ibid: 13) stated, "writing cannot be seen as composed of separate skills which are learned one by one".

3.4.5 Communicative Approach

Accordingly, this strategy emphasizes the writing's intent and target audience. Two questions are recommended for aspiring writers: As to why I'm writing this: Who will read it, and for what purpose? In a broad sense, one may say that writing is an attempt to communicate with the reader (Grabe and Kaplan, 1996, p.209). As a result, the text's aim, or communicative function, can be classified based on whether it seeks to entertain, inform, instruct, convince, explain, argue a point, etc (Harris, 1993, p.18). In a similar vein, teachers encourage students to write in contexts that reflect real-life situations and allow them to write purposefully.

3.4.6 The Product-Oriented Approach

Along with the emergence of the Product Approach in the 1960's, writing became a matter of "responding in writing to literary texts" (Kroll, 1990, p.245). At a higher level, very little time was devoted to teach writing on its own. Nevertheless, teaching writing under the product approach meant simply "correcting the papers" because the time allotted to writing was after the students are finished. Kroll (ibid : p.246) summarises the steps of this approach as follows :

- Students are taught to write according to "fairly rigidly defined principles of rhetoric and organization which are presented as "rules" for writing".
- The teacher gives "a reading text for classroom discussion, analysis, and interpretation (preferably a work of literature)".

- The teacher requires “a writing assignment (accompanied by an outline) based on the text”.

- The teacher reads, makes comments, and criticizes the papers of the students before beginning the next lecture.

Therefore, it becomes evident that The Product Approach focuses on the production of well-produced, mistake-free composition. “a product oriented approach, as the title indicates focuses on the end result of the learning process, what is that the learner is expected to be able to do as a fluent and component user of the language” (Nunan, 1991, p.86). A known principle of this approach is to expose learners to model texts and ask them to construct sentences, paragraphs and essays following those models, as Hyland, 2003 states:

> Essentially, writing is seen as a product constructed from the writer's command of grammatical and lexical knowledge, and writing development is considered to be the result of imitating and manipulating models provided by the teacher. For many who adopt this view, writing is regarded as an extension of grammar, a means of reinforcing language patterns through habit formation and testing learners' ability to produce well-formed sentences. For others, writing is an intricate structure that can only be learned by developing the ability to manipulate lexis and grammar.

Silva, 1990 (p. 20) indicates that Controlled-Composition was the initial source from which the premises of the Product Approach were created that “focuses on the lexical and syntactic features of a text”, and Current- Traditional Rhetoric which “focuses on discourse –level discourse structure”.

The objective is to steer students toward predetermined objectives; as White (1988: 5) puts it “… learners' needs are carefully specified and the work of the materials designers and the teacher is to provide the means of enabling these needs to be realized”. Tribble, 1996 (op cit: 20-22) also said that “teachers see errors as something that they must correct and eliminate given the importance accurate language has”. Consequently, writing revolves around the writer's mastery of the grammatical and lexical systems of the language.

Comparing it to the previous approaches, Boughey, 1997 (p.130) summarises that the product approach, also known as a "prose model approach", can be used for composition skill instruction to native and non-native learners as well. That is, it is based on read, analyse, and write strategy.

Despite its wide recognition, The Product Approach fell into disfavor by some. It was attacked on the basis that it views the writing process as the same for all writers, neglecting what is being written and who the writer is, as it gives little or no importance to the purpose and social context of the piece of writing. According to Parson, 1985 (p.9), the Product Approach failed due to the following reasons:

- It emphasizes form and mechanics before, and often at the expense of ideas and meaning.
- It focuses on the product rather than the process.
- It seriously neglects the earliest stages of the writing process.
- It offers many artificial contexts for writing.
- It isolates mechanical skills form the context of writing.

As a result, the Product Approach was evaluated for its core principles derived from Audio-lingualism and its emphasis on habit formation and grammar retention.

3.5 The Process –Oriented Approach as a Writing Paradigm

The previous approaches to writing were thought to ignore the development of thought or its expression as neither of them allowed the achievement of this goal; and the product approach was too linear and prescriptive, which discouraged creative thinking and writing. This is why specialists looked into L1 composition research for new ideas, convinced like Zamel, 1983 (p.203) that L2 writers "who are ready to compose and ready to express their ideas use strategies similar to those of native speakers of English". By the beginning of the eighties, L1 research brought

a new writing theory after the revolutionary studies of Perl (1980) and Flower and Hayes, 1980. As marked by Hyland (2003), this new adopted approach led to a better understanding of the nature of writing itself and the way writing is taught. Writing was no more viewed as a linear act but a complex thinking recursive and creative process. As such, the writing process was seen as "non-linear exploratory and generative process whereby writers discover and reformulate their ideas as they attempt to approximate meaning (Zamel,1983: p.165).

By adopting this approach, teachers come to take into consideration how their students approach the writing task as they move throughout different stages of writing such as: planning, writing, revising and editing. This approach makes the writer the centre of attention, while it considers the test as "secondary derivative concern, whose form is a function of its content and purpose" (Silva 1990:16). Moreover, there is no given context for implicit writing in this approach: it is left to the responsibility of the writer according to the situation.

In the same vein, within the Process Approach, the teacher aims at "teach(ing) students how to engage in the drafting of a text as a recursive process in which the linear order of the words constantly folds back upon itself to generate non-linear structure of the ideas" (Huff, 1983). Additionally, it aims to highlight issues with students' own writing, particularly when they create their ideas while writing rather than beforehand. Silva, 1990 (p.15-16) summarises the Process Approach in the following points:

1. Writing is a "non-linear, exploratory, and generative process".

2. Focus on "organizational patterns or syntactic or lexical constraints" is deemed early and premature during the writing process and therefore must be completely abandoned.

3. The structure of the generated text is specified by content, ideas, and the need to communicate".

4. The outcome (the text) is of a "secondary, derivative concern", i.e, "form is a function of its content and purpose".

5. The teacher may intervene as the students work through the writing process to assist them in learning effective techniques for getting started (finding topics, generating ideas and information, focusing, and planning structure and procedure), drafting (encouraging multiple drafts), revising (adding, deleting, modifying, and rearranging ideas); editing (attending to vocabulary, sentence structure, grammar and mechanics).The writer's task is primarily to express and discover meaning while a reader's task is to focus on "content, ideas, and the negotiating of meaning" rather than focusing on form which is of a secondary importance.

Although the process approach found a wide echo in the field of L1 and L2 research, it was criticised when brought to into L2 contexts for many reasons. Horowitz, 1986 suggested that there were as many distinguished writing processes as there were academic tasks and that the process-oriented approach does not prepare learners for academic examination: for example, the multiple-draft practice for this process conflicted with the single-draft writing required for examination. The inductive method of process writing, according to Horowitz, is only appropriate for some authors and for some reasons; some students are more inspired to write by external motivators (like grades) than by internal motivators. Grabe and Kaplan, 2014 cited in Grabe & Kaplan (2014) held the same view claiming that if the process approach is practiced in the teaching of writing in L2 classes, it should be adapted to serve L2 students, because L1 and L2 students share different needs. Correspondingly, when speaking about her personal experience, Montague, 1995 argued that the process approach she used with her young pupils did not set them well for state tests because process was not taken into account, only final product was examined. Myers, 1997 (p.1) also talked about process approach inability to meet the needs of L2 learners stating:

> While invention techniques, drafting and revision do lead to more thoughtful work by both L1 and L2 writers, I find that the university ESL population I teach is not one lacking in habits observation, critical thought, or substance to express. Most of them are placed in ESL compositions in classes because they do not have enough control of

> good English vocabulary or syntax to write fluidly, not because they cannot generate meaning.

To sum, the process approach stresses the importance of creative writing stimulating students to generate meaning without great focus on the product. These principles do not generally answer all the needs of students mainly L2/FL students who need consolidation of their L2/FL knowledge and are required to write mainly in an academic context.

3.5.1 Stages in the Process Approach to Writing

Since the popularization of the process approach,, the emphasis drifted from written materials to the steps that the writer goes through to reach the final product. The chief concern of teachers in this orientation is to make their students aware of what they are exactly working on. According to Curry and Hewings, 2003 (p.1) ‘“Tutors help clarify student's misconceptions about writing by explicitly teaching the stages of the writing process”. Thus, it is believed that teaching students about the many aspects in the writing process will help them gain control over these processes, increase their confidence, and decrease their level of anxiety. Although there is disagreement over the precise number of steps that make up the writing process, it is generally accepted that the pre-writing, drafting, revising, and editing stages are the most important ones.

Pre-writing

The first and the most daunting step in any writing activity is the pre-writing stage where the writer gets himself ready to write. In this respect, the student engages in the process of generating and exploring ideas and information through the activation of his schemata. Richards and Renandya (2002) defined the prewriting stage as:

> Pre-writing is an activity in the classroom that encourages students to write. It stimulates thoughts for getting started. In fact, it moves students away from having to face a blank page towards generating tentative ideas and gathering information for writing. (Richards et al., 2002, p.316)

The most widely used prewriting strategies in the classroom are brainstorming and free writing. Brainstorming is defined as a way to gather information and explore ideas. It is a free-wheeling technique for generating ideas. Its purpose is to let the writer's ideas flow without judging them. First, the writer generates ideas and can come back to them and skip the ones that he regards irrelevant or peripheral. One way to brainstorm is to start with a word or phrase and let ideas flow over a period of time until the writer has a clearer picture of what he is going to write. As Hogue and Oshima, 1999 (p.04) point out: "Brainstorming for ideas can get you started writing more quickly and save you time in the later stages of the writing process."

As such, brainstorming as other strategies employed in the prewriting stage is the key for the biggest hurdle of writing that is thought to be "The blank page. Similar to brainstorming, free writing involves the writer letting his ideas flow unchecked and without considering whether they are appropriate or not. Free writing is what Williams Williams, 2014 (p.109) characterizes as:

> Writing nonstop for 5, 10, or 15 minutes. During this period, students keep generating words, even if they cannot think of anything meaningful to say. The rationale is that, eventually, they will begin producing ideas that they can develop later into an effective paper.

The prewriting stage may also encompass mapping, listing, clustering, outlining, looping, note-taking, problem-solving, decision-making activities, listening to tapes and records and so on.

Drafting

In general, the drafting stage is the stage of putting down ideas that were generated in the previous stage into concrete ones. Hedge, 1988 makes reference to this stage as the "crafting" stage. She asserts that it is the stage where the writer "puts together the pieces of the text. In this stage, as White and Arndt (1991) claim, "the writer passes from the "writer based" writing to the reader based writing in which the concerns of the reader should now begin to assume more significance" (White and Ardnt, 1991:99). Importantly, drafting or crafting should be repeated

as many times as necessary until a “good” draft is achieved. Starkey, 2004 (p.94) pointed out that writers should make their planning notes as a reference when they start drafting and more importantly take into consideration the purpose and audience of writing. On the whole, drafting is a set of strategies used to organise and develop a sustained piece of writing:

> However, there does need to be some point at which the writer begins to „translate plans and ideas into provisional text Harris, 1993 (p.55) and moves from thinking about writing to doing it. This is called variously ’ composing’ (Hedge 1988), ’ drafting’ (R. White and Arndt, 1991), or ’creating and developing’ (Harris 1993). During the composing, writers move towards a text that most closely matches what they want to convey to their reader. Tribble, 1996 (p.112)

Thus, it is of central importance to introduce tasks to students about various types of writing. As an example, Hedge (1998) suggests an activity about classifying general and supporting statements, in which the students have to put in order sentences and put them in the frame of a paragraph. The task has other several advantages; as urging the learners to have a view of the general, supporting and concluding sentences, besides to cohesion and coherence aspects, raising learners’ awareness on how ideas in texts are intertwined.

Reviewing/Revising

Revising is the stage that comes before the final stage in the writing process; it ultimately deals with feedback on both form and content. It is at this phase that learner writers constantly check for formal inaccuracies. The ultimate aim in this stage is basically, to ”enrich the repertoire of linguistic resources which are the essential tools for writing” (R. White and Arndt, 1991, p.137). Fundamental to this phase is the word “checking” where students continuously check the ways sentences are connected and how paragraphs are divided to serve the written text. This latter can be achieved via a set of activities relying mostly on checklists in which the learner self-evaluates his performance. Besides, the learners do not only examine and review their writings only, but their ideas as well. MacArthur et al., 1991 (p.61) stressed the importance that revision plays in the composing process,

and asserted that low writing proficiency level is related to learners' lack of revising strategies. They argued that "revision is a complex cognitive process that draws on a writer's knowledge of criteria for good writing, specific writing skills, and meta-cognitive knowledge and self-regulation".

Editing

In the editing phase of the writing process, learners are oriented to review their drafts and look for grammatical inaccuracies. While editing, the author proofreads his work after editing, carefully paying attention to the language's grammatical correctness and form as well as minor details like spelling and punctuation. Mather and Juffe (1899: 507) cited in Azzioui, 2009 put it this way: "In editing, the students proofread and correct errors in spelling, punctuation, capitalization and usage." Similarly, Hedge (1988: 23) expresses his opinion about editing as follows: "Good writers tend to concentrate on getting the content right first and leave the details like correcting spelling, punctuation and grammar until later".

Furthermore, Hedge (ibid) suggests the use of sample activities in the editing process that he describes as follows:

- **Error Corrections:** Here teachers read and signal errors with symbols. These symbols act as markers to certain mechanical errors (for example, VT= verb tense error, WO= wrong order). Teachers, by then, limit the number of errors they correct according to their students' proficiency levels and needs.

- **Checklists:** Grammar structures and common mistakes are listed on checklists given to learners. They are instructed to check their own writing for grammatical errors. Students are better able to fix their mistakes when they can recognize them.

- **Rewriting Exercises:** Students rewrite ungrammatical utterances produced by their classmates, typed by their teacher, and distributed to the class.

3.5.2 Models of the Writing Process

In an attempt to explain what goes on in the writer's mind as he writes, Researchers in the area have come up with some writing models. Each model concerns itself with a specific issue in writing. The main concern of these models is the cognitive activities involved in the writing process and the source of knowledge that the writer uses. Importantly, these models aim to clearly define the different, yet long ignored, processes of writing with reference to the different strategies employed by skilled and unskilled writers. In the following section, we discuss three models which are considered as the most influential ones: Flower and Hayes, 1980, Bereiter and Scardamalia, 2013, and Zimmerman, 2000.

Hayes and Flower (1980)

The Hayes and Flower's' model, also known as the cognitive model, contributed to the already adopted Process Approach with the introduction of the so-called "composing episode". Their model provided some of the basic heuristic operations that occur during the writing process. A major finding of this study is that writing is a "problem solving activity" that manifests itself in sporadic episodes where the writer loops up backward and forward between the stages that make up the writing process. This representation of the meaning of composing is the outcome of Hayes and Flower study where they employed 'think aloud' technique to define the cognitive and psychological processes that the writer followed to come to his end product. Expanding further their research, FLOWEand and Hayes, 1980 conducted a case-study where they employed think-aloud protocols that were captured by a tape recorder for the aim of analysing the location and duration of pauses in the protocols of one skilled writer and three non-skilled ones. Their findings also indicate that the length of time spent during the periods of 'translating' (composing) was pretty longer for the skilled writers than the non-skilled ones. Indeed, a basic concern for this model, as illustrated by Hayes and Flower, is to describe what goes on at each stage of the process within the integration of cognitive behavior within social factors. As Hayes and Flower (1980: 34) further state:

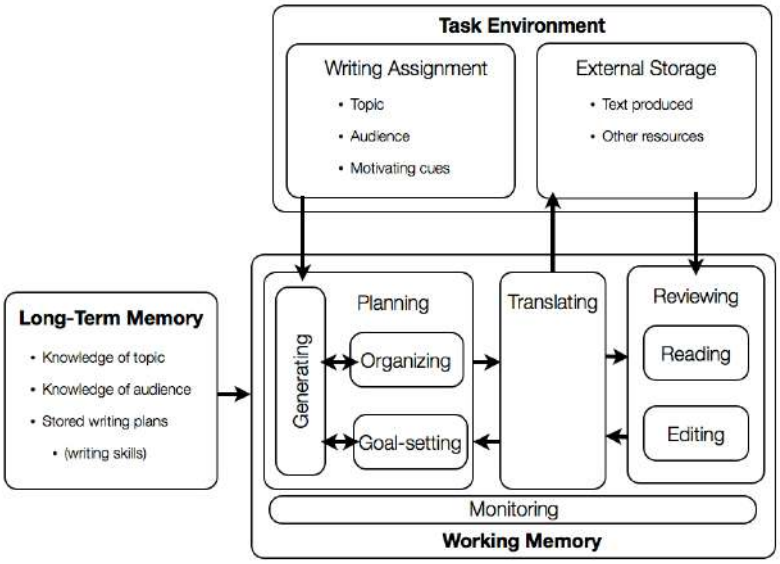

Figure 3.1: The Cognitive Process Model of the Composing Process (Flower and Hayes, 1980: p.11)

> When confronting a new complex issue, writers must often move from rich array of unorganized, perhaps even contradictory perceptions to integrated notions of just what it is they think about the topic.

According to Hayes and Flower, the writing task or text produced, the writer's long-term memory (knowledge of the topic, audience, and other factors), as well as other mental processes like planning, outlining, translating, revising, and editing, would make up the actual cognitive behavior of experienced teachers. The example is shown in figure 3.1:

As it is shown in figure 3.1, the Hayes-Flower writing model demonstrates the complexity of the composing process which involves processes and sub-processes that one goes through while composing.

Bereiter and Scardamalia (1987)

Elaborating on Hayes and Flower's, Bereiter and Scardamalia suggested a theory that explains why more skilled writers are better at writing than less skilled ones. The fundamental distinction in their model of writing was in their knowledge-telling and knowledge-transforming: less skilled writers function at the level of "knowledge telling" as in simple narrative, while more skilled writers are involved in "knowledge

transforming" as in expository writing. The main difference is that the former is akin to impromptu speaking which does not demand much planning and revision as the latter. This is what Bereiter and Scardamalia refer to as natural or spontaneous as it can be performed by any fluent speaker who has mastery of the writing system. Van den Bergh and Rijlaarsdam, 2007 (p.126) state that:

> Bereiter and Scardamalia (1987) distinguish two basic configurations: knowledge telling and knowledge transforming. Knowledge telling involves the retrieval of information on the subject matter, and the relevant discourse schemas, from a long-term memory and translation of these ideas into language. Successive parts of the text (sentence) reflect more or less directly the speed of activation through associative memory. In knowledge transforming, both sub-processes are involved too, but now mediated by more nature problem-solving strategies by which communicative goals are imposed on the generation process.

Bereiter and Scardamalia's (1987) model of knowledge-telling process depends on the process of retrieving content from memory with respect to topical and genre cues. Subsequently, if restored information is adequate to the topic, it is accepted and should eventually be written down. This process is repeated for more ideas which are then written as part of the essay until the writer covered all the aspects of his topic. The structure of the knowledge telling model would be better illustrated through its graphic representation in figure 3.2:

Conversely, Knowledge transforming is a more proficient model of writing since it requires more effort from the writer and a great deal of skill and practice. It sheds lights on the more advanced writers who are up to take up the twists of the writing process and put through appropriate actions to overcome the difficulties. Weigle, 2002 (p.32) mentions that: "In contrast to the natural and efficient process of knowledge telling, knowledge transformation involves much more effort and skill, and is not achieved without a great deal of practice". In accordance with this type of writing, the writer is regularly driven to alter his/her view about what s/he is trying to convey as it is clarified in the following figure:

As the figure 3.3 depICTs, the "the writing task" is expected to lead eventually to goal setting and problem solving activities. The significance of the knowledge-

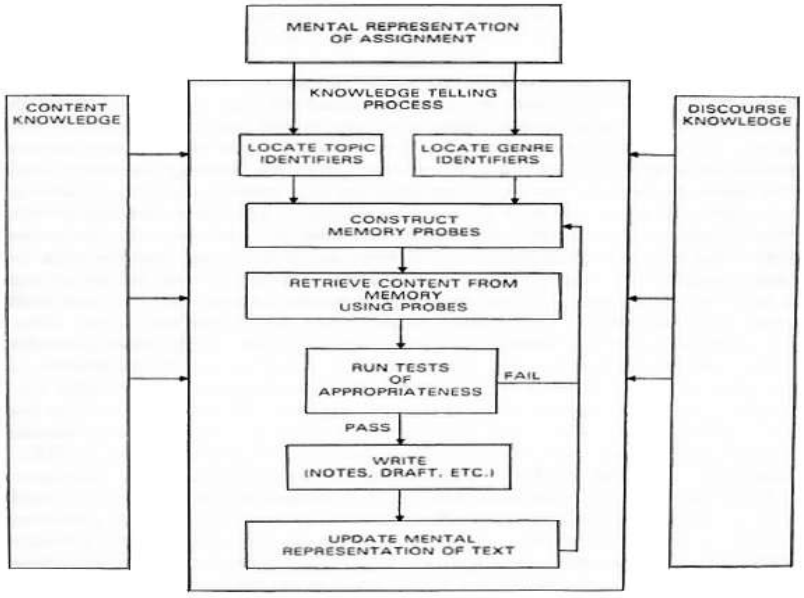

Figure 3.2: Knowledge-Telling Model (Bereiter and Scardamalia, 1987:p.18)

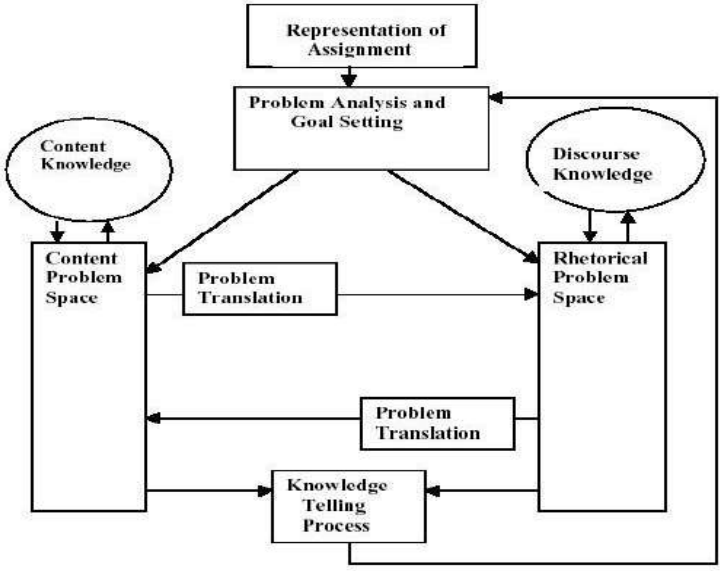

Figure 3.3: Structure of Knowledge-Transforming Model (Bereiter and Scardamalia 1987:p.12)

transforming model stems from the fact that it tackles the idea of multiple processing, which is revealed by generating ideas that diverge in processing difficulty. Bereiter and Scardamalia built their models on the results of their teaching to graduate students, who "generated goals for their compositions and engaged in problem solving involving structure and gist as well as verbatim representations"

(Bereiter and Scardamali, ibid:354). Indeed, Bereiter and Scardamalia (1987) denounce formal classes that tell its learners what to do instead of stimulating them to follow "their spontaneous interests and impulses…and assume responsibility for what becomes of their minds" (Bereiter and Scardamalia,ibid: 361).

The Zimmerman Model (2000)

Zimmerman and Risemberg (1997:73) have noted that "Becoming an adept writer involves more than knowledge of vocabulary and grammar, it depends on high levels of personal regulation because writing activities are usually self-planned, self-initiated, and self-sustained". In this model, Zimmerman (2000) expanded a 'partial model' which involves sub-processes of writing. He did so by analysing the English composition of German students writing short narrative films. His findings indicated that the 'formulating' stage, which is analogous to Hayes and Flower (1980) 'translating component', is more substantial to L2 writers than the planning or revising stages. He acknowledged that it is placed between planning and revising, and put stress on the "tentative formulation" of the text production, that refers to the words used in the text exactly as uttered, and the language of reflection. Moreover, this model focuses greatly on subcategories of tentative formulation such as: "repeated tentative formulation" and "simplified tentative formulation".

Unlike Hayes and Flower's (1980) model that recounts for aspects such as topic, audience, and writer's knowledge, Zimmermann's (2000) model overlooks these aspects and recounts for "the production of individual sentences. Thus his final model follows the sequence: tentative formulation—evaluation—acceptance—writing down with co-articulation—repair". Therefore, this model recounts for several factors in the writing process that that deem to be essential, but disregards other important processes such as planning, editing and revising. The previous models helped to provide the teaching world with significant insights into the way writing occurs. Nevertheless, the sheer form of the process approach has not won widespread acceptance in the academic context, yet many instructors have adapted some of its basics into their teaching curriculum.

3.6 The Socio-Cultural Theory and Scaffolding

The majority of research studies examining second language learning and acquisition are centered on cognitive processes, frequently under experimental circumstances, and do not take the larger social environment into consideration. A sociocultural approach, in contrast, places the social context at the center of the learning and communication process and is based on the groundbreaking work of Vygotsky and Cole, 1978 (1896–1934). According to Vygotsky, sociocultural interactions are essential to learning and that human learning cannot be understood in isolation from the social and cultural factors that shape individuals. Language is the most significant of these tools, in Vygotsky's opinion, and people use it to learn and manage their behavior among other physical, cultural, and psychological tools. In what he named a Zone of Proximal Development (ZPD), conceptual and cultural learning take place through dialogue:

> The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotsky and Cole, 1978, p. 86).

As a result, learning is not merely transmitted but is mutually created by the participants in a structured dialogue in which the more competent individual supports the learning of the less competent by constructing and gradually dismantling, a scaffold within which the individual learner is ensured progress from their current level to a higher level of cognition . According to Bruner (1985: p.90), **empty citation** scaffolding is defined as:

> Adult controlling those elements of the task that are essentially beyond the learner's capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence.

The premise behind scaffolding is that, compared to individual learning, students will find learning easier and faster when collaborating with others who have a richer background and knowledge than the actual student currently does. These

instructors or peers represent the ”scaffolding” who assist the student to transcend his learning boundaries and learn more than she would be able to on her own. To put it another way, a teacher or expert gives the student assistance so that they can accomplish a task on their own, free from the assistance or interference of the instructor or expert. The ultimate goal is autonomy[1]; in Vygotsky's words (1978, p. 87), what the learner can do today only with assistance, he will be able to do it independently tomorrow. He did not coin the phrase ”scaffolding,” which was first used in a 1976 essay by Wood, Bruner, and Ross and has since been frequently used to describe the help required in a ZPD. Then, Vygotsky described scaffolding as a mean for development. Learners should start with small, manageable steps in order to reach the final aim. Collaboration with a knowledgeable instructor or more skilled peers help students link between concepts. Six scaffolding principles have been developed by Leo Van Lier (1996) with particular reference to language learning that are (L. Lier, 1996, p. 196)

- “Contextual support - a safe but challenging environment: errors are expected and accepted as part of the learning process;
- Continuity - repeated occurrences over time of a complex of actions, keeping a balance between routine and variation;
- Intersubjectivity - mutual engagement and support: two minds thinking as one;
- Flow – communication between participants is not forced, but flow in a natural way;
- Contingency – the scaffolded assistance depends on learners' reactions: elements can be added, changed, deleted, repeated, etc;

[1]In the context of blended learning, learner autonomy is thought to play a critical role in the effectiveness of online learning). Holec (1981) defines learning autonomy as the ability to drive one's own learning. Students that have high levels of autonomy are presumed to be highly proficient and to be able to continue learning regardless of the situation.

- Handover – the ZPD closes when learner is ready to undertake similar tasks without help."

Models, clues, prompts, hints, partial answers, think-aloud modeling, and direct instruction are examples of scaffolds that can be used in educational settings Hartman, 2002. After the students have used the scaffolds that the instructor has supplied, the teacher could then ask them to participate in cooperative learning. . In this context, students assist other students in small groups while still receiving some teachers' assistance. This could be a step in the process of reducing the scaffolding supplied by the teacher and needed by the student.

Relevant research continues to indicate that scaffolding is an effective strategy in education. There has been numerous researches investigating the impact of scaffolding with various participant groups, purposes, learning outcomes, and learning contexts. Most of these studies came to the conclusion that scaffolding is applicable to multiple educational settings and can serve as an efficient strategy in education. Doo et al., 2020 performed a meta-analysis of the effects of scaffolding on learning outcomes in an online learning environment in higher education. From 2010 to 2019, studies with 64 effect sizes from 18 English-language journal articles published in eight nations were included in this meta-analysis. The meta-analysis demonstrated that scaffolding had a substantial and statistically significant impact on learning outcomes in an online learning environment.

Similarly, Rashtchi, 2019 used the reader-response method to provide the guidance EFL learners need for writing argumentative essays. The classroom tasks included group discussions, writing assignments, and short story replies that allowed the students to reflect on the stories. The study' findings revealed that effective writing necessitates manipulation of meta-cognitive strategies and thought-provoking activities. In a similar vein, Hasan and Rezaul Karim, 2019 study sought to investigate the effects of scaffolding on the growth of higher-order thinking abilities as seen in undergraduates' tertiary academic writing in the university education system. The results of the study demonstrated how instructors, as well

as the learners, had the same patterns of understanding the scaffolding technique in the acquisition of writing skills.

3.6.1 Characteristics of Scaffolding

The process of scaffolding is one in which both the teacher and the student play a significant part. Despite the fact that diverse scaffolding applications are illustrated, all definitions have some traits. The following list identifies scaffolding:

1. Interaction: According to Serle (1984) cited in Boblett, 2012, interaction should be mutual between students or between students and their teachers.

2. Working with the learner's ZPD: The teacher creates assignments that are just above the learner's understanding level after adjusting their level using diagnostic techniques, provided that these activities did not exceed the learner's ZPD (Rogoff, 1990 cited in Boblett, 2012).

3. Fading: This technique involves gradual removal of scaffolding (Birjandi and Jazebi, 2014). When students gain independence, the teacher's assistance disappears. As a result, fading encourages the learner to complete the task on their own. Additionally, it provides an opportunity for students to develop achieve self-direction.

3.6.2 Types of scaffolding

Holton and Clarke, 2006 distinguish between domain and agency scaffolding. Heuristic scaffolding and conceptual scaffolding are the two categories that make up the latter. The first type, known as conceptual, is supplied by the teacher and aims for conceptual comprehension (the successful student is able to comprehend the concepts and apply them in new contexts and circumstances). In contrast, the second form, known as heuristic scaffolding, is offered to help learners overcome challenges they encounter. Additionally, Holton and Clarke (2006) advocate classifying agency scaffolding into three categories; expert, reciprocal and self-scaffolding.

In the expert scaffolding, Holton and Clarke (ibid) believe that expert scaffolds are passive and that the scaffolder should assist the scaffoldee in achieving his aim. The teacher's responsibility in this stage is to merely facilitate learning while the students are responsible for gathering knowledge and expanding their understanding.

In reciprocal scaffolding, learners collaborate in groups as group dynamics promote information retention. As a result, when a student learns something new, his or her peers will also have access to it (Walqui, 2006). Consequently, the reciprocal scaffolding occurs at this stage. Holton and Clarke (ibid) also refer to the self-scaffolding type, which focuses on offering students the opportunity to scaffold themselves. This type also encourages students to advance their knowledge development by using the resources that are available. Additionally, while students can construct scaffolding for themselves, they can also provide scaffolds for their partners as a form of transcendental scaffolding[2].

3.6.3 Strategies of Scaffolding

Several scaffolding strategies can be implemented in foreign language classrooms by teachers to scaffold their learners. Walqui, 2006 suggests six strategies of scaffolding that can be used with EFL learners and help them to improve their proficiency.

Modeling

"Show, don't tell," is one of many common mantras that teachers who put scaffolding into practice adopt .Modeling is the process of displaying the expected outcomes before students complete a task. That is, help students to reckon how does the expected results look like and whether that is a line of questioning they should follow or an example of a finished product. By modeling, students are thought to have something to reference when it is time for them to independently

[2]According to Agus (2008), transcendental scaffolding is the process that goes beyond scaffolding, i.e. After completing all previous types of scaffolding, the learner becomes independent in his learning.

demonstrate proficiency. Practicing modeling is recommended whenever students are exposed to an unprecedented knowledge.

Contextualization

As the name implies, contextualized instruction refers to teaching students the material in a context, i.e., incorporating the concepts into worthwhile activities and a scenario that makes sense to the students, in order to improve their comprehension and make the material more accessible.

Schema Building

It is the activity of storing and recalling input and experience, arranging students' knowledge and understanding while orienting their attention to crucial points, topics, and input by using heads and subheads, pictures and their captions or titles of charts. A learner can build knowledge in this way by getting a broad picture. Using this scaffolding method, according to Harraqi, 2017, students can discern between central and marginal facts and create a conceptual map for processing information top-down (it is about organizing data from the general to the specific; from a larger idea toward a narrowed down one).

Text Representation

In text representation, learners are asked to transform one genre into another genre e; for example, learners might be asked to transfer a video into a speech or short stories into dramas or personal narratives. It is applied to enhance learners' language skills and create a richer sense of meaning in the learning process. This strategy attempts to give students opportunity to evaluate their command of the language as It can be used in a variety of ways, including word analysis, paraphrase, and online word search strategies . Additionally, if used in inquiry-based teaching, this method has the potential to help students improve their metacognitive skills.

Developing Metacognition

This scaffolding strategy is equal to "learning to learn". It focuses on the ways that teachers help students control their thought processes while completing tasks or learning something. . Additionally, it can help students assess their current level of comprehension and determine whether it is valid or not. The way teachers scaffold students' metacognition will impact how competent they are in many areas:

> "(a)deliberately applying learned strategies; (b) knowledge of strategic options and the ability to choose the most effective strategic option in diverse situations; (c) monitoring, evaluating, and adjusting performance during activity; and (d) planning for future performance based on an evaluation of past performance (Tajeddin & al, 2020; P.4)."

According to Tajeddin et al., 2020, this scaffolding strategy was featured in 72% of scaffolding frameworks. Effective instruction promotes meta-awareness and, within it, student autonomy via explicit instruction of modeling, performing tasks, and leading discussion.

Bridging

Making connection to previous knowledge is thought to help evaluate students' prior knowledge and use pertinent real-world samples. To create a more conducive environment, the instructor can use bridging at the beginning of the learning process using story pedagogy or oral questioning. This type of scaffolding aims to build a personal bond between the students and the material they are learning. By doing so, the materials given will be connected to the learners' life as an individual. In figure 3.4, we give illustration of how a writing lesson is planned within the scaffolding model:

3.7 Research on EFL Writing in Algeria

Algeria, like many Arab countries, require employing the mean of writing for passing examinations. For many learners, the only motive to master writing is to get good grades in different courses. The emphasis on learning to write to

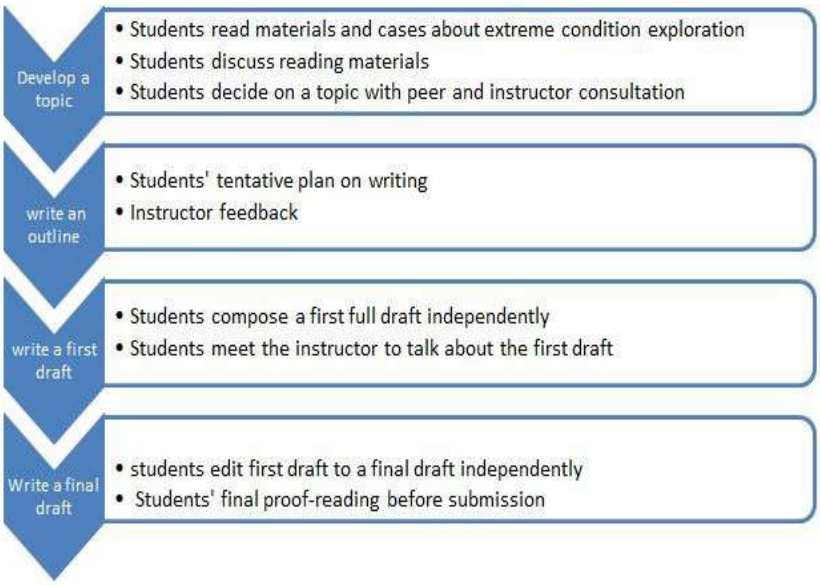

Figure 3.4: An example of scaffolding in planning a writing task

get high scores minimizes writing from the learners' viewpoints to developing a product oriented end which is the grade received from the teacher. By this mean, writing becomes ephemeral and decontextualized, depriving students of any genuine sense of purpose or understanding of a target audience. In this regard, some studies that were conducted in the Algerian context attempted to offer remedial programmes to overcome writing problems and develop students' writing skills. For example, Ourghi, 2002 distinguished two proficiency levels while assessing Algerian students' EFL writing: low intermediate, almost 80% of the new students; high intermediate, about 20% of the new students (Ourghi, 2002). According his findings, low-intermediate students lack proficiency with fundamental grammatical structures, understanding of writing mechanics, vocabulary, and relevant composing strategies. In the same line, results of a similar study demonstrated that students' incompetency or failed use of EFL writing strategies impacted the quality of their writing resulting in a poor writing performance (Hamzaoui, 2006). The author has also reported other writing problems by first-year students including students' inability of produing error free sentences, unfamiliarity with writing basics, grammar and vocabulary (e.g. frequently using anglicized borrowings from French). Additionally, students' writing is essentially a list of ideas that lacks

clarity and cohesion. (Hamzaoui-Elachachi, 2010). Furthermore, the emphasis in Algerian EFL writing instruction has been more on the final product than the writing process (Chelli, 2013). Because of this, students' written work is evaluated based on their test results in EFL writing tests rather than emphasizing their growth in EFL writing.

Chelli, 2013 employed self-assessment through portfolios to help students improve their EFL writing accuracy, grammatical complexity, and organization. The results showed a considerable improvement in the students' writing ability, attitudes toward writing, and metacognitive abilities.

A different strand of research attempted to identify some of the main reasons behind students' EFL writing deficiencies. Such deficiencies involve students' negative attitude towards writing as skill, with reference to students' high writing apprehension and low writing self-efficacy, and the absence of regular assessment (Moussaoui, 2012). Within this line of thought, Bouhadiba, 2000 (p. 104) has proposed the creation of adequate responsive educational or pedagogical programmes.

Due to large class sizes and the use of conventional teaching and evaluation techniques for EFL writing, the lack of regular assessment, which causes students to lack writing autonomy and critical thinking abilities, becomes evident (ibid). In an investigation of the impact of peer evaluation on developing students' writing autonomy and positive effect, findings displayed that peer evaluation of students' writing augmented their positive attitudes towards peer feedback, diminished their writing apprehension, escalated their writing self-efficacy and led to the growth of more autonomous student writers (Moussaoui, 2012).

3.8 Conclusion

In the course of this chapter, a survey on the most influential terms in research on second language writing approaches has been skated on. The process approach is the dean of this chapter in which writing has become recursive and non-linear process in which students can constantly revise and modify their productions. The influence of the writing process models presented cannot be overlooked in that

they served the writing instruction with a theoretical basis for using the Process Approach. Succeeding the different pre-writing activities like discussing of the topic and brain-storming in addition to the stages of drafting, revising and editing as well as peer group editing, students reinforce classroom interaction and engage easily in performing better. This chapter has also made reference to instructional scaffolding which is an influential element that aims at developing learners' competence and skills to reach self-directed learning. By highlighting scaffolding strategies, the researcher could draw the framework of the present study that is explained in Chapter 4. In the next chapter , the focus is shifted to the use of ICTs in teaching the skill of writing. By this, we draw a historical line of technology use and its variations in instruction.

Chapter 4

Rethinking Composition in the Digital Age

Contents

4.1 Introduction

In the field of L2 writing instruction, computer mediated communication technologies took the lion's share. By definition, CMC tools refer to any form of human interaction involving two or more technological devices. To better understand and identify its use and its instructional strategies in EFL classrooms, a compilation of research in this field is needed. This chapter is an attempt to collect and review research that tackled the use of CMC tools in L2 composition. A summary of

current state-of-the indicate that there has been a noticeable shift of interest along the years from blogs and wikis toward alternative CMC tools such as Google Docs, Moocs, mobile devices such as facebook, skype and instant messaging. Further, current research on the use computer mediated communication in the process of L2 writing puts emphasis mainly on refinement of L2 writing production, CAF measures (complexity/ accuracy/fluency), collaboration in L2 writing, and students' editing/revision strategies.

4.2 Shortcomings of the Traditional Method of Writing Instruction

Traditional writing instruction has been condemned for its "one size fits all" approach, which disregards students' specific learning needs, linguistic abilities, learning styles, and the utilization of effective strategies to motivate and assist them throughout the learning process. A typical conventional language classroom consists of an instructor who presents a lesson and engages in conversation with students, who are expected to ask questions related to the topic being covered by the instructor. So, the content given is intended for a group of learners rather than individuals and because the supplied content is meant for a group of students, this technique obstructs the individual student's learning and development (Joseph, 2012 Dakhmouche and Abderrahim, 2019). As a matter of fact, traditional teaching has drawn criticism for a number of reasons due to of its pedagogical policy. The fact that the instructor is the only source of knowledge or the "information giver" and functions as the sole controller of the learning environment is the primary point of criticism regarding this aspect of the system. The majority of the time spent in traditional classrooms is devoted to the presentation and explanation of material, thus students may expect to get a significant number of assignments from their teachers. As a result, in a classroom with a high number of students, outside-of-class assignments are frequently either not properly graded or not addressed at all, and hence have no positive impact on the students' improvement (Dakhmouche and Abderrahim, 2019).

Due its “one size fits all” policy, traditional classrooms have been criticized also of their inability to cover students’ “individual’s needs, talents, interests and differences” (Mahini et al., 2012, p.1615) and thus, leading to the production of students who are “passive, dependent and less self-initiated to learn” (Geta and Olango, 2016, p.50). As far as the skill of writing is concerned, many limitations have been attributed to the traditional classroom. According to Rybushkina and Krasnova, 2015, the traditional learning environment brings together students with a variety of abilities, learning styles, and requirements and heterogeneity creates challenges to the teacher, and often:

> ”Rigid learning outcomes and strictly defined content of courses forces instructors to focus only on students of appropriate language levels, which further worsens the situation in the group.” (Rybushkina and Krasnova, 2015, p.6888)

The absence of specific aspects in the instructional paradigm, such as appropriate and effective motivational strategies to assist learners cope with the obstacles of certain topics used for writing practice, is thought to lead to poor outcomes in traditional EFL writing education (Liu, 2013). In addition to the aforementioned reasons, traditional writing instruction (and FL instruction in general) does not ensure coordination between social & individual needs and what learners are taught; it cannot even prepare them for life in development society” (Mahini et al., 2012, p.1615).

Overall, traditional approaches to teaching writing do not provide teachers with the tools necessary to assist English language learners (ELN) students in sharpening their writing abilities, especially at the university level. Even with the adoption of an eclectic approach to teaching writing that incorporates product, process, and genre concepts, the results are far from being satisfactory. In her article, Strauss, 2016 reported the experience of Lily Howard Scott ,an American educator, and said that “the most meaningful learning occurs when teachers design or adapt curricula to meet the needs, strengths, and interests of their students”. She claimed that the current tendency of standardized education harms both instructors and students. Lily Howard Scott expressed her disappointment and resentment of the “one size

fits all" approach describing it as a "disaster" denying students access to "tailored instruction" based on their social, emotional, and academic needs, as well as denying teachers the opportunity to chance to display their abilities (Strauss, 2016).

4.3 Computers, Writing, and Language Learning

Writing has witnessed drastic changes in recent decades as a result of the advent of computer-mediated communication (CMC) technology. Web 2.0 technologies have twisted the way we create, communicate, and access knowledge (Çiftçi and Aslan, 2019), redefining what does it mean to be literate in the digital era expanding it beyond the ability to read and write. For second language (L2) students and instructors these advances herald unprecedented challenges as well as new opportunities. The challenges stem from what is currently expected of writers with implications for literacy education (Lotherington and Jenson, 2011). As Thorne and Reinhardt (2008) cited in M. Li and Storch, 2017 put it, in a tech- driven world, advanced level L2 literacies must increasingly incorporate knowledge with new and emerging computer mediated writing tools. A wide range of these computer-mediated forms of communication allow writers to create texts in collaboration, and to share and edit each other's texts in a more subtle way. Furthermore, ICT technologies have, as Hyland, 2016 (p. 40) argues, altered "the ways we write, the genres we create, the authorial identities we assume, the forms of our finished products, and the ways we engage with readers". As such digital literacies involve "a higher level of conceptual mastery," such as "using language in combination with other semiotic resources for communication, entering into relationships with new kinds of audiences, and constructing new kinds of identities" (Hafner, 2013; p. 830).

Nevertheless, along with the hurdles presented by using technology in writing there comes more opportunities. Second language writers, in particular, may no longer be restricted by their L2 linguistic resources. Writing, reshaped as multimodal composing, provides writers with plethora of options for using numerous resources such as linguistic, visual, audio, gestural, or spatial ones. In a number of L2 writing contexts across the educational spectrum, students are embark in

multimodal writing projects where they "orchestrate" various semiotic resources (such as images, photographs, and videos) to produce digital outputs that combine "a plurality of signs in different modes into a particular configuration to form a coherent arrangement" (Kress, 2013, p. 162). While language is still important in textual communication, visuals and sounds are rapidly replacing text in digital genres. Many studies have noted that the mode of writing representation has changed from purely verbal to visual across a wide range of instructive, persuasive, and entertainment writing. CMC technologies have also encouraged higher levels of cooperation. People were able to connect globally thanks to Web 2.0 technology (including blogs, wikis, and fan fiction), for example. Thanks to their distinctive characteristics, these technologies encourage collaborative writing, raise audience awareness, and encourage the evolution of writing. Newly emerged digital genres, such as blogs, may "promote interaction between author and audience to some extent, but the voices of author and reader can be more or less prominent" (Vandergriff, 2016; p. 84 cited in M. Li and Storch, 2017). While personal blogs, in particular, feature a distinct authorial voice, the comment sections of collaborative writing platforms like Google Docs and wikis blur the distinctions between author and reader. (Vandergriff, 2016 cited in Mimi Li & Stortch, 2017). A potentially larger online audience may also serve as a motive for reluctant L2 writers to put in more time and effort in order to gain a larger readership. In the same line of thought, Phinney (as cited in Hegelheimer and Fisher, 2006, p.260) stressed the indispensable role of technology in composition, and explained that:

> "As part of the changing culture of composition instruction, there is a new emphasis on de-centering authority, coupled with a recognition of the importance of collaborative learning, and a realization of the need for new models of writing and rhetoric."

Accordingly, technology can be divided into two types when it comes to teaching purposes, namely Type I and Type II (as cited in Hegelheimer and Fisher, 2006). Type I is utilized to "make it quicker, easier, or more convenient to teach in traditional ways" (p.260); technologies of Type II have the potential "to teach in new and better ways that are not otherwise available" (p.260CALL applications, such as

word processing, which are used for collaborative writing, self-evaluation, and peer assessment are examples of the technology tools used to enhance writing instruction. Web 2.0 has opened up a lot of doors for language instructors, especially in the realm of composition. With the advancement of web 2.0, language teachers now have more options, notably in the area of writing. Wilder and Mongillo, 2007 proposed using online technology (also known as web 2.0 tools) to help students improve their writing skills. Online writing laboratories and online courses are examples of these technologies.

According to Wilder and Mongillo, 2007, internet technologies facilitated stages of the writing process, such as revision, and allow students to share their work online, allowing them to receive feedback and improve their writing comprehension. Learners can also have a positive learning experience by using online technology to acquire authentic and stimulating motivation.

In addition to the effects new technologies have on what we teach, they have also altered how we teach by providing alternatives to traditional procedures and approaches. Word processors, for example, helps in creating composing environments which make writing easier and by making drafting, revising, and editing fast and subtle (Hyland, 2003). This clearly provides opportunities for students to participate in the creative activity of construction and for teachers to contribute in making their writing processes more accurate and efficient. Yet as Hyland (2003) argues that computers are: "no more likely to bring about learning improvements by themselves than other teaching tools such as blackboards, overhead projectors, or video players" (Hyland, 2003:P. 145). That is to say that technology is not an end itself yet a tool which can help in practicing a variety of approaches (Warschauer, 2002 cited in Hyland, 2003, p. 145). Similar to all approaches and teaching methods, it is the ways they are used that can decide on student writing behaviors.

Important to mention, Warschauer and Kern (2000 cited in Hyland, 2003) have reported that the use of computers in language teaching marks a shift from structural through cognitive to sociocognitive orientations to teaching. Early CALL

(Computer Assisted Language Learning) programs were likely to be consistent with a structuralist model in grammar and vocabulary drilling practices were given paramount importance with the computer taking the role of as a tutor. Along with cognitivist conceptions of learning, the second generation of CALL twisted agency to learners by encouraging them to use computers to solve problems and navigate through simulated environments. Current applications represent sociocognitive techniques that are shifting "the dynamic from learners' interaction with computers to interaction with other humans via the computer" Hyland (2003: p.145). It can be stated that these twists in perspectives is parallel to evolution of technology that went from mainframes, to the personal, to the networked computer.

According to existent literature, CMC has evolved into a highly effective learning environment that fosters cooperation, increases engagement, and boosts motivation while also create a less intimidating atmosphere for communication (Kadri and Hamada, n.d.; Zheng and Warschauer, 2017; Purnawarman et al., 2016). In the same vein, various researchers in the field of process-based L2 writing have suggested that CMC provides considerable opportunities for writing practice, collaborative writing, and online peer feedback in comparison to face-to-face peer feedback.

To date, many works and meta-analysis reviews on the importance of CMC in language learning have been published, and they have provided insight into CMC's overall effectiveness in L2 acquisition (W.-C. Lin et al., 2013), L2 learners' oral proficiency (H. Lin, 2015a), L2 learning outcomes (Ziegler, 2016), and the quality and quantity of language production in CMC-enhanced tasks (Lai and Li, 2011). Although there has been a lot of study on the application of CMC in process-based L2 writing, there have been very few review studies on L2 writing (T. Chen, 2016). Furthermore, many of these review and meta-analysis studies use a production-oriented approach, concentrating primarily on the results of CMC use in L2 acquisition and/or learning in general. However, research on the use of CMC in L2 learning needs to be scrutinized much more closely, with a focus on specific language skills, such as writing, because examining the use and integration

of CMC in specific skill domains will provide succinct insights into how CMC is integrated into the teaching of those specific skills.

4.4 Review Studies on CMC and L2 Writing

The use of CMC in L2 writing has been the subject of a number of review studies. According to Aslan and Ciftci, 2019 review, CMC is most frequently employed in L2 writing. H. Lin, 2015b study of the efficacy of CMC in L2 learning reveals that L2 writing is one of the two most prevalent target skills in CMC research, and that CMC is most beneficial in writing and speaking. T. Chen, 2016 demonstrates multiple positive aspects of technology-enhanced peer response in L2 writing in relation to interaction models, such as more equal participation patterns, a less threatening, more task-oriented environment or discourse and language use (e.g., more flexible, lexically and syntactically complex), as well as the teacher's role becoming less dominant and the students' roles becoming more engaged, along with some technical and practicum issues(Aslan and Ciftci, 2019).

In the 1980s and 1990s, conducting research into the impact of computers on the learning process was a cutting-edge movement among scholars in developed countries. For example, in 1983, an academic magazine called Computers and Composition was established, which was dedicated to studies on computer-assisted writing. Table 1 shows some examples of research conducted in the United States during the 1980s and 1990s.

Similarly, several research studies published in the 1980s and 1990s looked into the possible benefits of computers for writing training; some of these scholarly articles are listed in Table 3.1. The illustrated table displays that scholars' key concerns back then were the utility of word processing programs and writing centers for both L1 and L2 learners, as well as the comparison of computer composition to traditional writing. In affluent countries, the preoccupation with using desktop computers for education purposes is now considered outdated. One such finding is Hyland, 2019 as he put into question the utility of word processing as a teaching tool and that the optimism with the latter was quickly dispelled when good results

Table 1: Examples of Research Interests on Computers and Composition between 1985-1996

Author	**Year**	**Title of Thesis/Article**
Pollack	1985	Exploratory study of the use of the computer for revision to improve student writing
Pullen	1993	A comparison of writing performance using conventional and computer-based writing techniques
Devers	1994	Writing and computers: The effects of word processing on student attitude toward writing, student attitude toward computers, and student writing quality
Kaplan	1986	Computers and composition: Improving students' written performance
Gerrard	1993	Computers and Composition: Rethinking our Values
Joram et al	1992	The Effects of Revising with a Word Processor on Written Composition
Robert and Bangert Drowns	1993	The Word Processor as an Instructional Tool: A meta-Analysis of Word Processing in Writing Instruction
MacArthur	1996	Using Technology to Enhance the Writing Processes of Students with Learning Disabilities

in student writing turned out to be slow and restrained. In fact, research has revealed blurred findings about the later; some of which have confirmed that the medium enhanced students' attitudes to writing and led to the improvement of revision practices and products (e.g., Snyder, 1993 cited in Hyland 2003) while others have acknowledged slight difference between hand-writers and computer-writers, or even that the medium inhibits writers and restricts their composing and revising (Hyland, 2003).

Wikis, blogs, and forums are other examples of Web 2.0 tools that have become increasingly popular in writing instruction. Numerous researches were done to

maximize the pedagogical potential of these tools to help students write better. In this line, Miyazoe and Anderson, 2010 implemented a strategy that integrated the use of a forum, a blog, and a wiki within an EFL setting. When used in conjunction with one another, these three elements had a beneficial impact on the students' progress in learning the language and produced improved academic outcomes. Recently a variety of other web 2.0 tools, including as learning management systems, mobile devices, and instant messaging apps, have been utilized to improve writing teaching. Table 2 displays some of the studies conducted in the field of L2 writing with the aid of ICT since the year 2011:

In terms of L2 writing tasks, most of the reported studies included different CMC-embedded L2 writing tasks. It was revealed that freewriting was the most prevalent form of L2 writing task involving diary entries (M. H. Lin, 2014; M. H. Lin et al., 2014), blog posts (Alied et al., 2022; Nepomuceno, 2011), commentries (Hirvela, 2007), and paragraphs on a subject selected by the author (Rosa and Vital, 2016). Studies also revealed that blogs were mostly oriented to the use of freewriting activities. The effect of blogging on L2 students' writing ability was investigated in three experimental investigations using freewriting through journal entries on a particular theme and/or everyday activities (M. H. Lin, 2014; M. H. Lin, 2015; M. H. Lin et al., 2014). Another study made comparison between the effects of Facebook and blogs on Japanese EFL learners' writing skills mainly writing fluency, lexical richness, and syntactic complexity (Dizon and Thanyawatpokin, 2018).

Other studies, including both quantitative and qualitative case studies, have included the argumentative type of writing tasks in their CMC-embedded L2 writing instruction as a main task (Rosa and Vital, 2016) or in combination/juxtaposition with other types of writing tasks (Aydın and Yıldız, 2014; Kuteeva, 2011; M. Li and Zhu, 2013). According to studies on CMC-embedded second language writing, wikis are also increasingly used for argumentative tasks carried out through the process of collaborative writing. Furthermore, narrative writing tasks have been also utilized in some studies that benefited from a variety of CMC tools such as emails, wikis through either individual (Amiryousefi, 2016) or collaborative writing

Table 2: Studies that used CMC tools in writing instruction

ICT Tools	**Studies**
Blogs	Aydin (2014), Dizon and Thanyawatpokin (2018), Aljumah (2012), Alsamadani (2018), Kitchakarn (2012), Ozdemir and Aydın (2015), Alsubaie, A. and Madini, A. A. (2018), Alied Alkubaidi and Bahanshal (2022), Ozdemir and Aydın (2015), Sun and Chang (2012), Wu Petit and Chen (2015), Vurdien, R. (2012)
Wikis	Kuteeva (2011), Alshumaimeri (2011), Kontogeorgi (2014), Wang (2015), Nepomuceno (2011), Kızıl (2015), Aydin (2014), Li and Kim (2016), Li and Zhu (2017), Weingarten andFrost (2011)
Google docs	Metilia and Fitrawati (2018), Nguyen and Nguyen (2022), Sholihah and Setyandari (2018, August), Suwantarathip and Wichadee (2014), Ebadi and Rahimi (2017), Sudrajat and Purnawarman (2019), Seyyedrezaie, Ghonsooly, Shahriari and Fatemi (2016), Zhou, Simpson and Domizi (2012), Abrams (2016), Cho (2017)
Instant messaging/Emails	Andujar (2016), Amiryousefi (2017), Cremades, Onieva-López, Maqueda-Cuenca and Ramírez-Leiton (2021), Elola and Oskoz (2017), Foroutan and Hamzah, (2013)
Moocs/Moodle	Zyad (2016), Kadri (2017), Gasmi (2017), Dakhmouche (2019), Ghouali and Cecilia (2021), Bouguebs (2019), Ghouali (2020)
Forums	Wu and Chen (2015)
Social networks (Facebook, skype,twitter…etc)	Rosa and Vital (2016), Yen Hou and Chang (2015), Wichadee (2013), Ghounane (2021)
Edmodo/Padlet	Al-Kathiri (2015), Fauzi (2017), Altunkaya (2020), Patel et al (2017), Housseinpour et al (2019), Miftah and Raya (2018), Purnawarman, Susilawati and Sundayana (2016), Sheet (2018), Defilippi and Ramirez-Avila (2020)

work (Y. Li, 2000). Vurdien, 2012 has also examined how a blog as a computer-mediated medium engages a group of EFL learners at a Spanish language school

in reflective and collaborative learning. At the end, she proposed that personal blogs can inspire students to improve their writing skills through self-reflection and peer evaluation.

Second language writing task types also include, yet are not limited to, activities of writing a summary (Aslan and Ciftci, 2019; Radia, 2019a), letter writing (Amiryousefi, 2017), opinion and/or persuasive writing (Ciftci and Kocoglu, 2012; Wu et al., 2015; Aydın and Yıldız, 2014), expository writing (Foroutan et al., 2013), descriptive writing (Defilippi et al., 2020) analysis and synthesis writing (Ebadi and Rahimi, 2017; Strobl, 2014; Sun and Chang, 2012).

Regarding the writing process, the majority of the reviewed studies incorporated CMC tools into the L2 writing process during the drafting stage. The primary objective of these CMC-enhanced activities was to enable participants to perform or accomplish specified tasks or activities through the composition of a particular genre (e.g., to write a story, letter, summary, journal, etc.). Some of these studies included more discussion-oriented CMC tasks, such posting and answering questions throughout the writing phase (Andujar, 2016), analyzing textbook readings (Braine, 2001) or assigned subjects (Jayaron and Abidin, 2016), and sharing their ideas about the chosen novel (Hirvela, 2007).

The revising/editing stage was the second most prevalent stage where CMC was incorporated into L2 writing. The main aim of employing CMC for participants in most of this research was to give/receive peer feedback and revise/edit their manuscripts accordingly. Others involved participants posting short comments or ideas on each other's texts as part of collaborative revision activities. The goal of such research was to interact with and get input from a larger audience via blogs, such as family members and some expert reviewers. Only a few research used CMC in the prewriting/planning and publishing stages specifically. For example, before the participants performed a letter-writing job, Amiryousefi, 2017 used Telegram instant messaging for collaborative prewriting planning and debates. In a another work, participants used tutor blogs to engage in prewriting exercises as well as

publish the final version of their paragraphs and learning process reflections (Arslan and Şahin-Kızıl, 2010).

Attitude towards used CMC tool was also investigated in literature. For instance, Al-Kathiri, 2015 study was oriented towards Saudi EFL learners' attitude and perception in using the platform Edmodo. At the end of the study, Al Kathiri (2015) reported that despite the challenges encountered in using the platform, the platform appeared to have great potential for yielding positive attitude amongst Saudi learners.

4.5 The Impact of Computer Technology on Student Writing performance

There has been a number of advantages attributed the inclusion of computers in teaching writing whether used in the classroom or outside. These benefits are labeled thematically following findings of the reviewed studies already stated in Table 2.

4.5.1 Improving L2 Writing Production

In most of the studies analyzed, there was a significant improvement in L2 writing competence or production. These research used a variety of CMC tools, including blogs, wikis, Google Docs, CMC open forum , , Facebook, and twitter. These studies indicated that after utilizing the CMC tools, the participants' second/final drafts improved overall and were of higher quality. In terms of the differences between groups (e.g., CMC-embedded vs. face-to-face), some research found a significant difference in favor of CMC use, with participants outperforming control groups that experienced F2F teaching only (Alied et al., 2022; Ebadi and Rahimi, 2017; Sheet, 2019). Despite the fact that current research in this area indicates a significant gain in general L2 writing competence, a number of studies have revealed no remarkable difference to be mentioned between the groups who used CMC and the ones who experienced face-to- face-to-face learning (M. H. Lin, 2014; M.-H. Lin et al., 2011; Özdemir and Aydın, 2015; Wichadee, 2013). In a similar

case, there was no significant change in L2 writing results after a CMC open forum was adopted (Wu et al., 2015).

4.5.2 Facilitating Interaction and Collaboration in Writing

Technology-based writing is more cooperative, engaging multimodal, and oriented to a larger audience than standard classroom writing, which is often individualistic, product-based, and produced for the teacher. Numerous studies have shown that computer-mediated communication (CMC) can encourage student involvement and participation, both of which are essential for language development. (Alshumaimeri, 2011) analyzed how the interaction patterns of various learners in a microblogging environment in fifth-grade classrooms changed over the course of a school year. Using social network analysis, students' contacts with teachers and peers became more dense and dynamic over time, and the learning community shifted from a teacher-dominated network in the first two months of the activity to a student-dominated network in the last two months.

In the same line of thought, Cho, 2017 investigated the linguistic adoption and language functions of interaction patterns among three L2 learners participating in Google Docs collaborative writing activities, as well as the factors that influenced their interactions. When students collaborated on Google Docs using the in-built text chat feature, their interactions tended to follow a facilitator/participant pattern characterized by strong mutuality but low equality. When participants communicated on Google Docs but used Skype for voice-chat, the engagement pattern tended to be collaborative and harmonious. This research implies that, as compared to text-chat mode, voice-chat improved participants' interaction and collaboration owing to voice-instantaneous chat Elola and Oskoz, 2016 contrasted L2 students' collaborative writing via voice-chats and text-based wiki (2014). According to their research, the distinct impact on students' writing is mostly attributed to the underlying affordances of chats as opposed to text-based communication. The synchronous nature of voice communication allowed students to focus more on the global components of writing (such as content and organization), whereas the wiki

editing option encouraged students to focus more on the local aspects of writing (e.g., vocabulary use, grammar).

However, these results stand in contrast to a meta-analysis conducted by Lin (2014), which indicated that the efficiency of CMC for L2 learning in students was not moderated by modality (i.e., text vs. voice) (SLA). The research conducted by Sauro, 2012 indicated that there were no significant variations in the level of lexical or grammatical complexity between the performances of adult English language learners (ELLs) in text-based synchronous CMC and spoken discourse. This difference may have arisen from a number of different sources, such as the many metrics that were used, the characteristics of the participants, or any number of other mediating factors.

4.5.3 Adjusting Complexity, Accuracy and Fluency Measures (CAF measures)

CAF assessments of syntactic complexity, lexical diversity/density/complexity, grammatical accuracy, and writing fluency in relation to particular features have been supported by various researches. More structured tasks (such as pre-task computer-based form-focused activity) and linguistic support (such as written instructions on how to complete the task) led to increased precision and syntactic complexity (Adams et al., 2015) in addition to paying greater attention to the meaning of what is being said in text chat conversations by L2 writers (Alwi et al., 2012). Study participants' syntactic complexity, lexical density/diversity, and grammatical accuracy were all influenced by task category, reader participation, and practice. When compared to a narrative task, L2 authors used more complex syntactic and lexical language in persuasive writing, as well as a greater level of lexical complexity, and both syntactically and lexically more complex writing when there is audience involvement (Li, 2000). In Amiryousefi's (2016) study, L2 writers who conducted five tasks with the same procedure but different content scored higher in their computer-mediated written production than those who performed five tasks with the same approach but different content. Other research has demonstrated

the benefits of CMC use in terms of enhanced precision, lexical diversity, and syntactic complexity following mobile instant messaging exchanges (Fellner and Apple, 2006) and increased writing fluency and lexical complexity in freewriting activities through blogs (Fellner & Apple, 2006).

4.5.4 Changing Revision Practices

Computer technology did not change the cryptography of writing only but that it has also "affected the process of writing at every stage, from invention, through revision, to delivery" (Eyman and Reilly, 2006, p. 102). When it comes to revision, studies have shown mixed results regarding the impact of computers on students' ability to retain information for future use. For instance, Reynolds and Bonk (1996) investigated the use of computerized generative and evaluative prompts to aid students in self-revising. According to their findings, a computer-based intervention for self-revision improves both the process and the outcome of students' revision. This research confirms prior findings that computer use facilitates effective revision (Bridwell, 1985 and Rodrigues, 1985).

In addition, other research has demonstrated that the use of computers enable students to experience revision as a recursive activity (Chambers, 2011; Goldberg et al., 2003). K. Garrison, 2009 investigated the use of NaturalReader, a text-to-speech tool, to assist students with revision. In this experimental study, 51 ESL students enrolled in a first-year college composition course utilized this technology to improve their writing. The results revealed that the students revised their work more positively than negatively. K. Garrison, 2009 (p. 297) concluded that the "software is useful for proofreading and also for local and global revision (though less so)" And recommended that additional research be performed to determine how the software could assist students in conducting more content-related revision.

In spite of the purportedly favorable effects that technology has had on students' capacity to revise, a number of other researchers have questioned whether or not students are able to revise more effectively when they utilize computers as opposed to paper and pencil. According to several research, computers make the writing

process even more difficult for students (Crafton, 1996), causing them to focus mostly on surface-level modifications.

Contradictory results on the effect of the computer on rewriting may be explained by various research contexts, timed vs. untimed essays, and single vs. several drafts (Chambers, 2011). However, it is debatable whether computers make revision useful or useless; the effectiveness of this instrument in any setting of teaching and learning is primarily dependent on effective pedagogy (Reynolds and Bonk, 1996). According to K. Garrison, 2009 (p.280), evidence from research that show that computers help students revise demonstrate that"that computers are useful for encouraging revision, specifically when guided by pedagogy".

4.6 The Use of Technology in Providing Feedback in L2 Writing

4.6.1 Feedback in L2 Writing

Considered as one of the most investigated topics in connection with L2 writing is that of written corrective feedback (WCF. Research findings are inconclusive as to the most useful focus of feedback comments on L1 and L2 learners' writing (e.g. grammar, lexis, or organization/structure), the form in which they are given (e.g. explicit or indicative), and the source of the feedback (e.g. explicit or indicative) (i.e. instructors or peers). Feedback can be defined as "writing extensive comments on students' texts to provide a reader response to students' efforts and at the same time helping them improve and learn as writers" (Leng, 2014, p.390). In the same line, Richards and Schmidt, 2013 (p.217) define feedback as "comments or other information that learners receive concerning their success on learning tasks or tests, either from the teacher or other persons". One of the teacher's top priorities is to provide feedback to his students in order to help them read and understand various problems in their writing. As such, written feedback is exploited to introduce some skills to students that are able to help them improve their writing. In an equal manner, this latter is hoped to assist students in producing written text which contains "minimum errors and maximum clarity" (Leng, ibid).

Hyland (2003) argues that feedback is a crucial component for enhancing students' writing skills and for their effective learning. Notably, Vygotsky (as referenced by K. Hyland, 2003) identifies a stage in cognitive development known as "the zone of proximal development," in which skills are "scaffolded" through the supervision and response of expert individuals. Providing students with constructive criticism is an essential part of any writing curriculum. The majority of research currently give evidence for a positive and statistically significant effect for written feedback. However, how to provide that feedback is still a "hot topic" of debate.

4.6.2 Electornic Feedback

In fact, the quest to identify the nature and degree of feedback on user interactions with tutors dates back to the early days of computer-assisted language learning (CALL) (Otto et al., 2017). The issue has become more complicated as a result of computer-based remedial feedback, with electronic solutions greatly expanding the possibilities. One of these is to provide recorded audio feedback, which has been demonstrated to be effective in previous initiatives, such as using screencast software (Arnold et al., 2012; Elola and Oskoz, 2016). According to Tuzi, 2004, electronic feedback is feedback that is numerical, written, and communicated through the web, subsuming the principles of spoken response in the electronic realm. It is a type of online conferencing that allows students to participate actively in the learning process. As a result, e-feedback is a combination of spoken and written feedback (Hyland & Hyland, 2006). Its aim is to reach interactive textual exchange and augmented student participation (Seliem and Ahmed, 2009). There exist today a good number of computer applications which helps in evaluating and giving a score to the written work, some of which also suggest formative feedback to the author. Such applications are named Automated Essay Scoring (AES) (Shermis et al., 2003) or Automated Writing Evaluation (AWE). AWE is defined as computer technology that analyzes and scores written prose with the intention of of saving time, lowering costs, and boosting reliability in writing evaluation (El Ebyary and Windeatt, 2010).

There has been a lot of research done in recent years on the usefulness of electronic feedback (Lee, 2015) and its effect on student motivation and collaboration. There has been a recent trend among university faculty members to have students submit their writing assignments and receive feedback on those assignments digitally, through online chats, forums, e-mail, or word processing software (Elola and Oskoz, 2016; Hyland & Hyland, 2006). It should be noted that computer-mediated feedback can be sent either synchronously or asynchronously. Synchronous writing, in which students communicate in real time with one another or with the teacher using discussion software chat sites; and asynchronous writing, in which students communicate in a delayed mode.

Synchronous CMC is deemed to give the L2 writing classroom a sense of presence, spontaneity, and democracy.(Blake and Zyzik, 2003; DiGiovanni and Nagaswami, 2001). As a "conversation in slow motion" (Beauvois, 1998, p. 198), synchronous CMC is a setting in which learners can stay on task and have equal opportunities to be mentored by the supervising teacher (DiGiovanni & Nagaswami, 2001). In research, the use of chat rooms has been proven to increase linguistic correctness. For example, DiGiovanni and Nagaswami (2001) found that learners were more engaged when given comments via real-time electronic communication than while participating in traditional face-to-face peer revision groups. In the same vein, Schultz et al., 2000 discovered in an experimental study that students in the face-to-face modality were more concerned with specific, local alterations rather than broader global improvements. . This could be owing to the ability of online revisers to save and track changes to detailed suggestions offered in writing, whereas face-to-face authors' global adjustments were influenced by the faster back-and-forth interaction. In fact, students who received evaluation in both methods used feedback the most effectively.

According to the findings of another study conducted by Morris, 2005, the feedback received in the form of debate between peers led to the immediate correction of lexical and grammatical problems. In her research on the effects of peer feedback and essay revision in a French class, Schultz (2000) found that

synchronous CMC was less time-efficient than face-to-face peer review. Despite this, she found that the most advanced students benefited the most from a combination of synchronous CMC and face-to-face feedback; In addition, particular concepts that were addressed during synchronous CMC were successfully implemented into the revisions. On the other hand, there are many who argue that synchronous CMC may put more emphasis on vocabulary and grammar (Blake & Zyzik, 2003; Schultz, 2000). In addition, synchronous computer-mediated communication might be lengthy and ineffective when it comes to the process of peer-reviewing and revising writings (Schultz, 2000). Asynchronous electronic feedback, such as email, discussion forums, or the comments and track changes features found in Microsoft Word, also has a lot of positive effects on the development of language and writing. It is possible to implement this sort of delayed feedback given through which:

> Teachers can provide comments on electronic submissions by email or by using the comment function, which allows feedback to be displayed in a separate window while reading a word-processed text. Feedback on errors can also be linked to online explanations of grammar or to concordance lines from authentic texts to show students examples of features they may have problems using correctly (Hyland, 2019, p. 183).

Asynchronous peer e-feedback was found to improve grammar, spelling, and vocabulary in studies investigating its effectiveness (Tolosa et al., 2013); grammar, spelling, vocabulary, and discourse (Vinagre and Muñoz, 2011); and morphosyntax (Ware and O'Dowd, 2008). In spite of the language progress that has been observed, Tolosa et al. (2013) and Vinagre and Muoz (2015) have expressed concern about the students' propensity to concentrate more on form than discourse. Tuzi, 2004 suggested using a web-based writing environment as a means of boosting the number of sources of feedback and broadening the audience for student work. At the clause, sentence, and paragraph levels, he found that asynchronous peer e-feedback prompted more and deeper alterations than oral input from peers and tutors. This feedback was supplied via a website. Despite these benefits, asynchronous CMC and electronic feedback have been criticized in some research as being too slow to effectively encourage participant engagement or thorough revisions.

4.6.3 Online Peer Feedback

The idea of peer feedback is becoming more prevalent in higher education (Van der Pol et al., 2008). Peer feedback is to be viewed as a learning setting where students provide feedback on the caliber of the work of their peers, either for formative or summative purposes. This rising popularity has a range of factors, one of which is rather utilitarian. Today's university courses place a greater focus on teaching students difficult skills like writing, research, and problem-solving. This entails that students generate more intricate work, including project presentations, reports, and articles. The instructor is urged to develop innovative ways to give feedback because the amount of time that is available to teachers in most institutions is not sufficient. Peer assessment has the practical advantage of generating feedback in a quicker manner and in larger numbers than the teacher could possibly do alone. Peer assessment thus complements current advancements in university instruction, including collaborative learning and writing, and real-world task performance (J. van der Pol et al; 2008).

Another recorded advantage of peer feedback is its likelihood to provide more social or affective support than teacher feedback that usually learners find it less threatening (Lee, 2015). Peer feedback can "enhance a sense of audience and text ownership" (Lee, 2015, p. 2), making students feel the need to take their role seriously, allowing the creation of the potential for reflection and discussion on language matters.

In recent years, the adoption of electronic learning environments like LMS systems has increased the process of peer feedback. Online peer evaluation can greatly ease the logistics of peer review by diminishing the burden of paper distribution, turnaround time, and record keeping (J. van der Pol et al; 2008). Implementing peer feedback online can also support its instructional features when compared to face-to-face peer evaluation. It permits greater levels of interaction amongst students and gives instructors better opportunities to oversee and direct this interactive process. It is worth noting that peer feedback can be implemented in a variety of ways, depending on the learning situation. It might be included into collaborative

writing platforms like wikis or Google Docs. It can also be a separate task assigned via a learning management system (e.g., Moodle), a web sharing service (e.g., Dropbox), Social networks (Facebook) or a word processor (with the comment or review functions). Due to its noted advantages, many studies have been performed to investigate the effectiveness of online peer feedback on students' achievements. In her meta-analysis of technology-supported peer feedback, T. Chen, 2016 asserts that students often feel less stressed providing feedback electronically than they do face-to-face. She also stated that some studies' responses revealed a wide lexical range and concentration. In the same line of thought, GASMI et al., 2017 used Moodle as a means to investigate the effect of peer editing on students written texts. In order to do so, the experiment entailed 69 Algerian university students from the university of Amar thelidji, Laghouat who were distributed randomly in two groups: an experimental that was assigned to the peer review training group, and a control group that worked in a teacher-led classroom where the teacher was the only source of feedback. The results showed that Moodle-based peer review provided various advantages for the students, including improvements to their attitudes and motivation as well as their writing.

In a similar attempt to explore the effectiveness of online peer comments using the social network Facebook, Pham et al., 2022 concluded that electronic peer feedback impacted positively the overall writing quality and could replace the use of conventional paper based feedback; nevertheless, description on how students develop their writing skills and which aspects of writing students make more improvements are not addressed in the study.

Peer instruction was also investigated during Covid 19 as it applied synchronously and effectively to a distance learning course by Vallarino et al., 2022. In the study, peer instruction approach has been made available online thanks to the use of Moodle. Technically, the choice and workshop activities in Moodle were set up properly to handle the entire process, and the teacher handled communication via the videoconferencing software used to deliver the lectures. At the end of the study, all of the students were actively participating in the online lectures thanks

to the online peer feedback application, which also helped in improving students' comprehension of the subjects being taught. These researches, when taken as a whole, have helped us gain a better grasp of the potential function that CMC could play in language acquisition. However, taking into account the quickening pace of research on CMC, its role and current state in L2 writing need to be investigated in order to achieve a more comprehensive and definitive comprehension of the empirical research that has already been conducted.

4.6.4 Automated Feedback

Another area that is having a growing impact on feedback practices is the development of sophisticated technologies capable of reading student texts and offering feedback. Such softwares provide several forms of feedback, beginning with grammatical inaccuracies and style issues, to holistic assessments of content, organization, and mechanics (Hyland and Hyland, 2006). Eventually, such programs may be able to help teachers cope with the pressures created by large class numbers and rising demands for individualized support. Automated essay evaluation could be considered as a cost-effective technique to supplement or replace direct human input in many situations. As Hyland (2006: p.94) asserts that such programmes are helpful both:

> For teachers they hold out the possibility of respite from the hours spent commenting on student papers, allowing them to focus on other aspects of their teaching, and for students they may provide more extensive feedback in a much shorter turn-around time.

As students rewrite their drafts, this guides them through an evaluation process with a series of customizable prompts. Questions appear in the top half of a window, and students answer in the bottom half while looking at their text in another window. Such programs are still in their infancy, and their impact on the development of L2 writing has yet to be thoroughly assessed. In general, automated response programs have been chastised for being unreliable (Krishnamurthy, 2005) and implementing ineffective pedagogic ideas (C. A. Chapelle, 2001), yet it is thought to give better results once combined with teacher feedback and is most

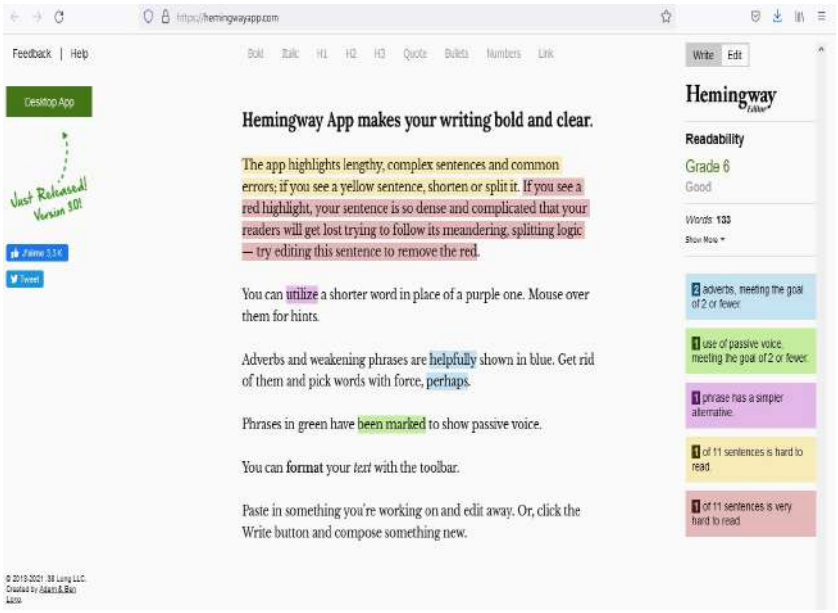

Figure 4.1: Example of the Hemingway Edit front page

effectively used in early writing drafts (Z. Li et al., 2017). It worth mentioning that commercial automated feedback systems are rather expensive and were not specifically developed for language learning in the first place. Nonetheless, there exist non-commercial systems that were developed later that are primarily intended for use in L2 instruction such as pro writing aid , Hemingway edit, Criterion and many more.

Large international language testing organizations, which are constantly offering services like IELTS and TOEFL electronically over the world, are currently the major motivator for the development and implementation of these programs. Much of the present study of automated feedback is centered on its effectiveness in providing summative feedback on constrained features of writing ability because their purpose is to rate content-restricted essays consistently and cost effectively (Valenti et al., 2003). Educational Testing Services' (ETS) Criterion and E-Rater are among the most well-known of these automated feedback systems, in addition to MY Access! that was created by Vantage Learning (Hyland, 2006). For instance, the E-Rater examines a student's writing and provides immediate comments on grammar, usage, style, structure, and progress. The use of automated feedback systems in such high-stakes tests was supported from findings by Psychometric

that have shown that machines can rate as well as human raters. By demonstrating substantial relationships between machine and human scores, the majority of these studies confirm the validity of AWE algorithms. By analyzing criterion-related validity, another line of psychometric study demonstrates that the machine's results and those of other measures of the same writing construct are significantly correlated (Dikli, 2006). Examining the scores assigned to many essays by the same examinee, some research assessed the reliability of scoring engines and found that the reliability of an E-Rater is greater than that of a single human rater and nearly comparable to the average of two human raters. (Attali and Burstein, 2006). By analyzing criterion-related validity, another line of psychometric study demonstrates that the machine's results and those of other measures of the same writing construct are significantly correlated. (Dikli, 2006 ; Keith, 2003 ; Phillips, 2007).

The use of AWE systems in the language classroom has gained some attention as a result of such promising findings in psychometric research (Dikli, 2006 ; Phillips, 2007 ; Valenti, Nitko, & Cucchiarelli, 2003). Further, the incorporation of programs like Criterion, My Access, and WriteToLearn (Warschauer and Grimes, 2008) into classroom instruction appears promising because they can provide not only final numerical scores but also evaluative feedback for various aspects of writing, thereby assisting students in revising initial drafts. Warschauer and Ware, 2006 argue, however, that classroom factors including students' and teachers' learning/teaching styles and willingness to use them should be taken into account to guarantee the efficacy of the auto feedback process. Warchauer and Ware emphasize that essentials of instruction including class objectives and feedback precision and explicitness should not be overlooked (2006).

The use of automated feedback in teaching has received many criticism as the one made by CCC (2006) saying that "while AWEs may promise consistency, they distort the very nature of writing as a complex and context-rich interaction between people" (Guiding Principles of Assessment, para. P.2).Yet, given that the use of technology in the field of language education is an irreversible trend and that automated feedback not only has witnessed many refinements since its creation

about fifty years ago but also was discovered to help students revise and edit their writing to some extent (e.g., Chodorow, Gamon & Tetreault, 2010 ; Cotos, 2011 ; Grimes & Warschauer, 2006). It is worthwhile to investigate how it is utilized in language classrooms, relevant research findings, and how such applications can be most beneficial to ESL/EFL students.

Fortunately, a growing number of AWE research with a pedagogical focus have lately been undertaken (Zheng & Warschauer, 2017). The first line of inquiry examines if and how AWE programs help students improve their writing skills. For example, Elliot and Mikulas cited in Zheng & Warschauer, 2017) found that one set of students used My Access 4–5 times per week, while another used it 2–3 times per week, and a third group did not utilize it at all. Data analysis revealed that students who had access to My Access were more likely to achieve proficiency on a district-wide writing assessment. Unexpectedly, results from the medium-use group outperformed those from the high-use group. On the other hand, several study contrasted the first and final drafts of student writing and discovered that Criterion and ESL Assistant feedback significantly reduced article and preposition errors (Leacock et al., 2010). Software-generated corrections were found to encourage students to make modifications in the areas of rhetorical development in academic writing, as well as grammatical and mechanical elements (Cotos, 2011).

A second line of pedagogical research studies how students and teachers use AWE programs in the classroom. For instance, Attali (2004) observed that despite the availability of AWE software, which was supposed to encourage and facilitate subsequent revisions, almost seven out of ten students submitted their essay only once, without further revision. On the other hand, some teachers employ AWE software to practice timed essay writing in order to prepare students for high-stakes tests rather than promoting several revisions as part of the process writing.

A third range of studies is concerned with the relationship between the (perceived) effectiveness of AWE and various teaching contexts. The implementation of AWE was ineffective and was not perceived positively as it was introduced in the later stages of writing process (Chen & Cheng, 2008). Also the efficacy of

AWE is determined by teachers' basic attitudes toward it and their familiarity with using technology to a large extent, as well as students' learning styles and goals.(C.-F. E. Chen and Cheng, 2008). Furthermore, students' prior experience with acquaintance with technology was associated to the frequency of utilizing AWE and its perceived usefulness (Grimes & Warschauer, 2006).

4.7 Research on the Use of Blended Learning to Teach the Writing Skill in Algeria

In the Algerian context, researchers were always interested in making the blend to teach the writing skill. For example, Kadri and Hamada, n.d. investigated students' level of motivation and academic writing proficiency along with exploring teachers' perceptions and experience with blended learning. Using Moodle as a teaching platrform, Kadri (2016) reported that blended learning is still novice in the Algerian context and none of the teachers of the studied sample used adequately blended learning and most of them do not see the rationale behind such an approach. Similarly, Radia, 2019a investigated Blended learning effect on developing students' ability to summarize, and responding in writing to narrative texts through Moodle. Findings concluded that the combination of in-class and out-of-class learning through moodle helped the chosen sample to reach a better level of expertise in reading comprehension skills and writing. Ghouali (2020) also used Moodle to demonstrate the importance of using Moodle for the sake of meeting students' needs that were based on Hutchinson and Waters' (1987) model of needs analysis. GHOUALI and BENMOUSSAT, 2020 concluded that Moodle, as an alternative assessment tool, can meet those needs because of the extensive options it provides in terms of evaluation. All in all, it should be noted that very few research made in the Algerian context has attempted to include other ICT tools rather than Moodle as en e-learning platform to serve the Blended Learning purpose.

4.8 Conclusion

In this chapter, we aimed for highlighting research in the areas of digital writing and outlined the most recurrent conclusions found in the state of the art. In writing instruction, technology has played and will continue to play a key role. The nature of that role is determined by a number of circumstances, including technology availability, administrative mandates, as well as teacher and student objectives. It is indeed essential to integrate technology with caution and to train teachers and students how to recognize what different CALL applications can do and how they can help students develop their writing skills, as well as what these applications cannot do or where flaws may exist and thus will not help in improving the work's quality. Crucial to effective process of the writing activity are, content delivery, feedback (either synchronously or asynchronously) as well collaborative writing. Thus, we propose in the next chapter a blended learning course in writing where content is delivered through a platform following face to face lessons, automated feedback is generated and collaborative writing included. In this study, we encourage learners' use of various technology tools to help identify useful technology-integration-in-writing instruction models.

Chapter 5

Research Design and Methodology

Contents

5.1 Introduction

After reviewing the most relevant theoretical concepts on recent technologies in education and writing instruction, a research design is important in order to implement our research project. The elucidation of research design and data collection is pivotal to the reader's understanding of implications and for the replication of the research as it provides an in-depth illustration of the methods adopted, describes the nature of the data, and sheds light on the research procedure followed that will lead to the generation of adequate conclusions through applicable data processing. Thus, the forthcoming sections are an attempt to illustrate the procedures used to elicit data for this work.

In the remainder of this chapter, we review the research design for the current study, the sample and population and the tools used in this work, with an illustration of the advantages and disadvantages of each.

Finally, both the data collection and the data analysis procedures are described and justified i.e research tools, type of data used, tasks that subjects had to do, and type of data analysis used in the data treatment.

5.2 The Research Design

In his book, Research Methods in Language Learning, Nunan et al., 1992 distinguished three types of experiments, namely the pre- experiment, quasi experiment, and the true experiment design.

1. *Pre-experiment : May have pre and post treatment test, but lack a control group.*

2. *Quasi-experiment : Has both pre- and post test experimental and control groups, but no random assigment.*

3. *True-experiment : Has both pre test and post test*

(quoted from Nunan et al., 1992 p.42)

In the present research, the researcher opted for the pre experimental research design as it does not imply the use of a control group. Pre experiments, has both pre- test and posttest, and a treatment but no control group. Pre-experimental designs are "research schemes in which a subject or a group is observed after a treatment has been applied, in order to test whether the treatment has the potential to cause change"[1].

In other words, pre-experimental designs may include some basic experimental attributes as it may not include. This factor distinguishes the pre experiment studies from the quasi experiment method. Like the quasi experimental method,

[1]Jimenez-Buedo, M. (2018). Pre-experimental designs. In B. Frey (Ed.), The SAGE encyclopedia of educational research, measurement, and evaluation (pp. 1290-1291). SAGE Publications, Inc., https://dx.doi.org/10.4135/9781506326139.n5361

however, the pre experimental method implies using a pre test before the experiment, following the treatment, and then a post test to check if the treatment had any potentials to cause the change.

Pre-experimental design is a research format in which some basic experimental attributes are used while some are not. This factor causes an experiment to not qualify as truly experimental. This kind of design is frequently employed as a low-cost method of conducting exploratory research to determine whether there is any data that justifies performing a full-scale experimental investigation. The one shot case study is one sort of pre-experimental design where one group is exposed to a condition or treatment and then measured to see whether there were any impacts. Therefore, no control group is needed for comparison. Several reasons prompted our choice of implementing the pre experiment research design. First, one of the main aims of the present study was the design and implementation of a blended learning course oriented towards third year students in teaching the writing module. Yet, since there was a precaution measurement introduced by the ministry of education and research against the deadly Covid 19 that resulted in introducing blended learning in all educational institutions from the year 2020 onward, we simply could not exclude one group from the experiment. Second, groups in the Ens are usually divided into two main sections, pem (bac+4) and pes (bac+5). The distinction between the two groups is already decided based on scores achieved in their baccalaureate exam (pes students are the ones who usually obtain higher scores). Unsurprisingly then, pes students usually demonstrate higher learning abilities than pem students. Thus, we cannot make a comparison between the two groups as they demonstrate different levels. It is important to notify that both pem and pes groups were treated in the experiment as one sample that underwent the same research procedure. Yet, the researcher had sometimes to make reference of the mismatch between the two groups distinguishing high skilled learners versus low skilled learners. For example, in testing the automated feedback tool on both groups, we found out that the low skilled learners reported better results in enhancing their editing practices.

5.3 Setting and Population of the Study

5.3.1 The Setting

This study takes place at the Ens of Laghouat where the researcher works as an assistant teacher. The school, instituted in 2011, offers a multiple kinds of programmes, in diverse subject areas (English, Arabic, French, History, Philosophy, Natural Sciences, Physics and Mathematics):

1. a five year academic program that allows learners to earn a Secondary School Teacher Certificate; and

2. a four year academic course that allows students to earn a Middle School Teacher Certificate.

3. a three year program that prepares students to become primary school teachers (this applies only to some branches which are currently French and Arabic).

4. Master classes

The English language programme covers several sequences in which the student receives instruction on listening, speaking, writing, grammar, reading. In addition, EnsL students are also exposed to content modules such as literature, civilization, TEFL, psychology, and textbook design. Located at the heart of Laghouat city, The Ensl hosts students from eight (8) different districts.

5.3.2 The Sample

The participants who took part in this study are third year ENS students during the academic year 2021/2022. During their 4 to 5 years instruction, learners are theoretically assisted and trained to become either middle or secondary school teachers. It is worth mentioning, however, that ENS students are admitted following a determined Baccalaureate exam score besides an interview upon their entrance that centers mostly on learners' motivation to enroll in the school and their efficiency to demonstrate commitment to their future career.

Important to mention, ENS students are more likely to start teaching right after graduation thanks to a signed contract that "guarantees" their position aftermath. Pem students are oriented towards teaching in middle school while pes students are oriented towards teaching in high school (lycée). Furthermore, Ens students share many modules in common with LMD students like the module of writing or written expression that is taught during the three first years . In their first year students are familiarized to paragraph writing and some key terms such as unity, coherence, parallelism, wordiness, and sentence fragments; then in the second year, and considering that most students master those basic skills in their first year, the curriculum is based on understanding and developing other writing skills that need those basic skills learned in the first year. In their third year, the writing module is mixed with grammar and becomes to be known as "Writing and Grammar" to third year students. The focus, however, remains mastering the essay format. The rationale for choosing Third year learners was that students at this level had already acquired a basic knowledge of English grammar and structural rules needed for the performance of writing activities. The sample chosen for this study is composed of two groups namely Pem and Pes in which we find the total number of the population as 50. Pes group contains 22 while Pem groups contains 28 student.

5.4 Instruments

Various kinds of research instruments have been implemented in an attempt to crosscheck our hypotheses. Yet, the most commonly used are self-report instruments. The data collated from these instruments are surveys provided by the individual learner that can be either written or oral. Many investigators resorted to self-report tools in investigating of second language learners' behaviour (eg. O'malley et al., 1990, Graham, 1999) for they proved to be efficient for detecting learners' cognitive thinking and attitude. Indeed, the literature on research methodology underlined the importance of employing various types of instruments in order to vary information sources and examine the problem from multiple perspectives as marked by Weir and Roberts, 1994 (p.137):

> A combination of data sources is likely to be necessary in most evaluations because often no source can describe adequately such a diversity of features as is found in educational settings and because of the need for corroboration of findings by using data from these different sources collected by different methods and by different people (i.e triangulation). It is now widely held that multiple methods should be used in all investigations.

Thus, choosing a multiple approach to report data can help the researcher to gain different insights into the problem elicitation and may lead him to develop various implications.

Due to the fact that a single source of data may be incomplete or partial, it is recommended to adopt a triangular approach to data collection (Richards et al., 2001) by duplicating data sources. Additionally, using a single source of data may not provide a complete picture of the issue under examination and may only provide the researcher with a partial understanding of an intricate situation (Cohen and Manion, 1994). Thus, using a variety of research tools to collect data may give crucial insights and help in getting a more accurate picture of the desired condition (Bacha, 2003).

To answer our research questions, we divided the study procedure into two significant phases, The division was made for that each section had a different aim to reach. Accordingly the researcher will use different research instruments that vary in purpose. In the first phase, while using Edmodo as a learning platform where the course was presented within the blended learning frame, three research instruments will be used thoroughly to gather data. A pre/post experiment questionnaire, pre/post tests, and a checklist. In the second phase, the researcher opted for two research instruments: a semi structured interview with the learners and students' drafts before and after revision.

5.4.1 The Questionnaire

Questionnaires, with its various kinds, remain one of the most popular data collection tools in the field of education. The popularity of questionnaires is due to its easiness of construction, versatility, and its unique ability of gathering a large

amount of information in a limited period of time form. Indeed, questionnaires were reported as the second most frequently used research instrument in L2 research after language proficiency tests.

This work is an attempt to demonstrate how blended learning practices particularly in teaching composition can be applied in the COVID-19 era. To come to a basic understanding, a comprehensive survey is prepared before the experiment that examines how blended and online learning practices were employed in past, and their analysis. The aim of the pre-experiment questionnaire was to add clarifications to the researcher's' vision of students' pedagogical lacunas and academic needs as well as their attitude towards using technology in learning. The second questionnaire was created after the experiment to see what impact the platform Edmodo has left on students. The post experiment questionnaire attempted to give a better understanding of the pros and cons of the six week blended learning practice that is going to help design the next phase.

It is challenging to create a questionnaire that is valid, reliable, and retrospects the researcher's goals and needs. It is crucial to emphasize the study objectives and script the questions meticulously. Multipart and complex questions nearly always result in invalid and unreliable data. While designing a questionnaire, two types of questions should be distinguished by the researcher, open format and closed format:

- **Open format questions:** Open-ended survey questions are unstructured, free-form inquiries that permit respondents to respond in plain-text style, allowing them to express their full knowledge, emotion, and comprehension. It implies that there is no set of possible answers to this question. This kind is useful for requesting subjective data. At the end of questionnaires, for example, open-ended questions frequently ask respondents for their opinions. e.g. Do you have any remarks or suggestions to propose. However, the researcher is unable to tabulate or carry out statistical analysis on open-ended questions.

- **Closed format questions:** Closed-ended questions are questions that can only be answered by choosing one of a small number of possibilities. Such questions are typically multiple-choice with a single-word response, such as "yes" or "no," or they can use a rating system (e.g. from strongly agree to strongly disagree). Closed format questions offers a number of benefits to its users , from restricting the answer set; to its easiness to be collected and quantified and filtering out unnecessary answers that may appear in open format. Questionnaires can include of only open format questions, closed format questions, or a combination of both.

Description of the Pre- experiment Questionnaire

The questionnaire is composed of twenty (20) questions that were sanctioned into four sections each focusing on a particular issue. The first section, entitled "The Distant Learning Experience", is made up of four (4) main questions. This section attempts to know about students 'online learning experience during Covid 19 and whether it has affected positively or negatively their learning process. The questions ranged from Open- end questions (Q1), yes/no questions (Q2, Q4), multiple choice questions (Q3). This section aimed at assessing the online learning experience in order to guide our current research. The second section, named "The Skill of Writing" is made up of nine questions. The questions address topics such as students' goals and aspirations for learning to write at university (Q7), students' perceptions of writing in general and the writing process in particular. The third section, named 'Learning Preferences", concerns itself with certain components of the learning process that are crucial but may not be given due attention in the writing classroom. Four questions (Q14-Q17) have been chosen to examine the aforementioned factors. The last Section is devoted to blended learning aiming at checking students' familiarity with term as well their expectations from the latter.

Description of the Post-experiment Questionnaire

After six week period using the platform Edmodo, a post experiment questionnaire was designed that aimed at collecting information about the students' evaluation

of the blended course they participated in for this study. The results of the questionnaire are hoped to help the researcher in identifying strong and weak points of the onsite learning course using the platform Edmodo. The questionnaire used five point likert scale questions that involves 15 statements in which students have to select “Never”, “Sometimes”, “Rarely”, “Often” or “Always”. By definition, the likert scale is a unidimensional scale that is used by researchers to collect respondents’ attitudes and opinions. The fundamental benefit of Likert Scale questions is that they follow a standard way of data collection, making them simple to comprehend. When working with quantitative data or evaluating an experiment as in our case, it is simple to create reports, graphs, reports, and draw conclusions from the responses in a blended environment that is online and onsite. The statements in the likert scale questionnaire focus mainly on students’ general perspective on some aspects of the online course such as interaction of the learners with their classmates and with their teacher , the easiness of using the online course and exploring the platform.

5.4.2 The Platform EDMODO

Edmodo is a nonprofit learning management platform that merges classroom content, safe environment , and evaluation with social media savvy. The platform, created by Borg and O’ Hara in 2008, has received popularity as an online learning platform that facilitates student learning . It is recognized of its simple use and unique features for both educators and language learners to connect and interact in a virtual space. The application aims to make in accordance social networking facilities with learning conditions in any classroom. Edmodo is very similar to Facebook in its layout yet it is more private and secure as it is used only for educational purposes. The application is run by the teacher who is going to be the only group moderator while only the students who receive a group code can join and register.

The system enables educators to set up study groups, give tasks and homework, plan online assessments, and monitor student progress. Additionally, Edmodo

provides collaborative tools so that students may ask questions, take part in polls, and communicate with each. Based on their achievement in online tests and exams, teachers can award students with certificates and badges. As Kongchan states (as cited in Purnawarman et al., 2016, p. 242) "Edmodo is very modesty, almost similar to Facebook, and provides space for teachers, students, and even parents to maximize teaching and learning process". Furthermore, from the definitions above, the writer comes to conclusion that Edmodo is a simple learning medium that provides several features that can help students to get ease in learning anytime and anywhere.

Using Edmodo has a lot of benefits for educators, students, and even parents. Edmodo can support teachers' writing lessons by providing online language practice, which improves students' writing abilities and encourages them to write in English. Teachers can upload assignments, create quizzes, provide feedback, assign grades, assess students' achievements, save and share content in a format that incorporates both files and links, maintain class schedules, conduct surveys, and send notes and text alerts to specific students or the class as a whole. Respecting students, edmodo offers ample opportunities for sharing knowledge, exchanging ideas and submitting homework at any time and in any place.

By the year 2011, Edmodo was listed as one of the top 25 websites by the American Association of School Librarians that stimulates innovation, creativity, active participation, and collaboration within the "Social Networking and Communication" (Kongchan, 2008). Several studies have examined the potential benefits of utilizing Edmodo as a supplementary learning tool to help students learn independently, be more self-directed, and improve their language skills, especially their writing proficiency which is the chief concern of the current study.(add studies)

With reference to teaching composition, Edmodo was found to have several distinctive features compared to other learning platforms or social networks: (1) it provides an easy access to learning content and assignments, (2 Teachers and students can share notes and corrections (3 Learning through the process of Edmodo

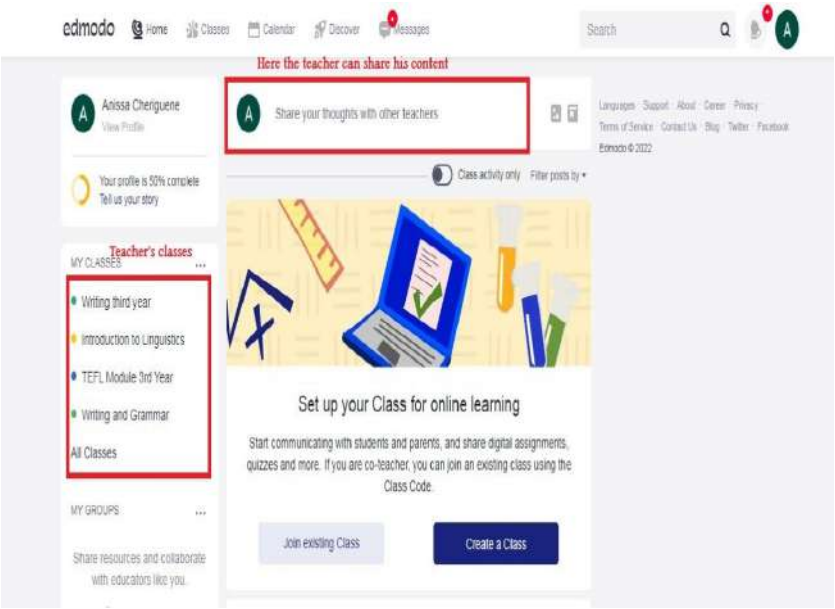

Figure 5.1: Edmodo Interface.

could increase students' English writing motivation, and (4) it makes students more interested in the process of revising and editing their writing.

Research on the use of Edmodo in EFL education is expanding simultaneously as its recognition as a learning platform for EFL teaching and learning. An increasing number of studies have examined various facets of using Edmodo for EFL teaching and learning. Adopting a qualitative approach, some have investigated the effectiveness of Edmodo on reinforcing learners' language abilities (Shams-Abadi et al., 2015a; Ma'azi and Janfeshan, 2018; Wichadee, 2017) while some others have emphasized users' attitude of its adoption as a learning platform, either in virtual or a hybrid learning setting (Al-Kathiri, 2015; Ekmekçi, 2016; Thongmak, 2013). Despite this growing interest in investigating the adoption of Edmodo as an EFL instruction, very few research has been performed in the Algerian setting to explore students' insights into the utilization of Edmodo as a learning platform in a hybrid EFL writing class. In addition, no research to the researcher's best knowledge has attempted to merge another Ict tool with Edmodo.

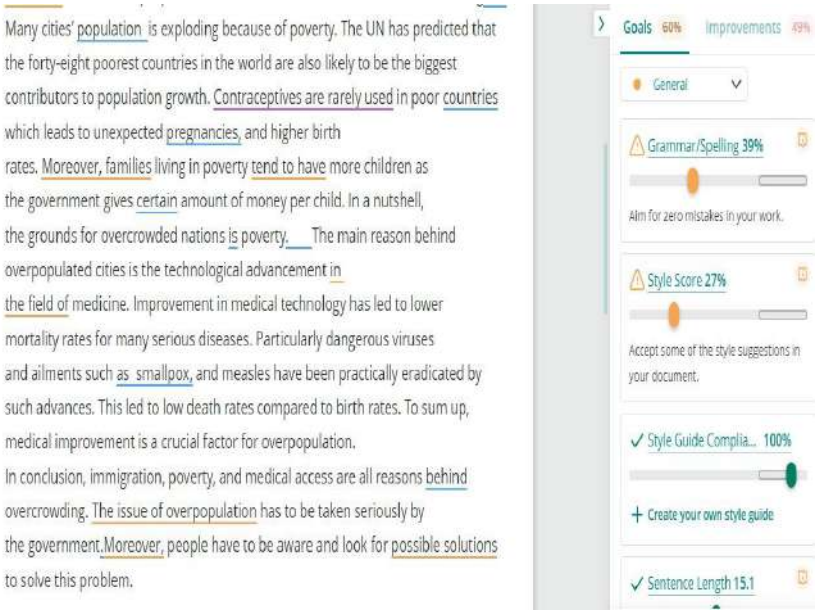

Figure 5.2: an Illustration of Pro Writing Aid.

5.4.3 Pro Writing Aid

Pro- Writing is a modern web-based program text evaluator that is not just a grammar checker but also style editor. It can be used in combination with Microsoft Word, Google Docs, Scrivener or Google Chrome. Pro writing aid can detect problems in spelling, punctuation, and grammar. In contrary to numerous paid versions of the AWE programs such as My Access!, White Smoke, or Criterion, the ProWritingAid program is accessible by simplycreating an account. Another distinctive feature of the program is that it gives an evaluation score of the target text based on various writing aspects such as grammar, spelling, style, wordiness, or rate of readability. The program proved its competency in detecting misuse of words or sentences as it offers the error evaluation or correction in many linguistic properties. By this, students can revise their language inaccuracies while learning simultaneously from the explanation suggested by the program (Ritter, 2016 cited in Ariyanto et al., 2019). It should be mentioned that errors in the text are either underlined or highlighted as demonstrated in the figure 5.2 :

ProWritingAid generates corrective or direct feedback on numerous language features, depending on how the system functions. The corrective feedback, which is

a response to a learner's linguistic error, includes error indication, its correct form, and metalinguistic explanations in relation to the error. (Ellis et al., 2006). Most of the times, it also gives the correct version of the error and an explanation of why it is considered as an error. With this system, the students can autonomously learn grammar, punctuation, etc, and revise their works. The abundant features of pro writing aid justifies our choice of its use as a teaching tool in our experiment.

Despite the aforementioned strengths, this application does not come with some limitations. TopTenReviews.com cites a number of limitations in relation to ProWritingAid. Firstly, the free version of pro writing aid comes with limited features. Second, the suggested recommendations are not always accurate. Third, the comprehensive reports of correction offered by this tool may occasionally result in feedback that is not succinct. To follow the correction, users' comprehension might be needed.

5.4.4 The Interview

Another research instrument that was opted for in the study was the interview. It was designed during the second phase of our experiment for the subjects of the experiment. The aim of the interview is to have their opinion on the automated feedback received by the Pro writing aid as well as online peer feedback in reference to advantages and disadvantages of each. The interview aimed also at confirming or disconfirming the results by analyzing student's drafts.

The rationale of using an interview in our research is due to the fact that is "feasible for smaller groups and allows more consistency across responses to be obtained" Richards et al., 2001 (p.61). In addition, it allows a mutual communication and makes the interviewer able to reorient his questions according to the answers, and for the interviewee to discuss his ideas without limitations . According to Nunan et al., 1992 (p.149), there exist three types of interviews which differ in their degree of formality:

- **Unstructured interview or what is sometimes referred to as Informal interview:** The questions are not predetermined, nor is the order in

which they are asked. On the basis of the participant's prior responses, the interview can instead move more spontaneously. This flexibility can help the researcher gather in-depth details about any given subject, while still enabling the researcher to spot patterns between participants. Yet, its disadvantage lays in its flexibility that risk of making it challenging to conduct the study properly.

- **Semi-structured interview or Focused interviews:** The emphasis is on the key components of the subject being investigated; as a result, researchers do not prepare predetermined questions to be answered, but rather, they are aware of when to ask questions during interviews and how to do so in order to get the desired results.

- **Structured or Formal interview:** It is a questionnaire-style organized interview. The researcher creates a list of questions, which are then verbally asked to the individuals in the same order without modification.

In the present work, we opted for a semi-structured interview with the participants as it allows , according to Hesse-Biber and Leavy, 2011, conversations to flow naturally and to go to unexpected directions. Unlike the structured one, it offers a degree of flexibility that enables to get richer information, and unlike the unstructured interview, it allows a certain degree of comparability and a base for analysis.

However, semi-structured interviews could have some drawbacks. One of the main issues that will arise when employing semi-structured interviews is that, according to Hamzaoui, 2006 (p.125),respondents may be different in terms of their verbal abilities:

> While some informants will be skilful at providing the appropriate amount of verbal report, at the appropriate level of specificity, others lacking this ability will be unable to provide the required information.

Despite its limitations, the semi structured interview continue to be a very valuable research instrument to obtain information as it allows further elucidation and thorough development of responses as marked by Cohen (1998: p.38):

> Research has demonstrated that verbal reports elicited with care and interpreted with full understanding of circumstances under which they are obtained, are, in fact , a valuable and a thoroughly reliable source of information about cognitive processes.

As a result, after defining the research objectives and reviewing some relevant references and studies (Barrot, 2021; Salavatizadeh and Tahriri, 2020), the major questions were carefully framed in the form of general statements, followed by a number of sub-questions for deeper investigation. This procedure made sure that the research's objectives were adequately covered. The interview consisted of five (05) open-ended questions that went as follows:

Q1: In revising your essay, did you benefit from automated feedback and online peer feedback?

Q2: Did the features of pro writing aid help you revise in a more effective manner? What did you like or dislike about it?

Q3: What features of pro writing aid helped you to diagnose the mismatch between how you use language and the correct use of it?

Q4: Which one helped you better in revising your essays? Online peer feedback or pro writing aid?

Q5: In what way did pro writing aid help you learn and understand grammar rules?

The number of participants in the semi-structured interview were 20 students. It lasted about 15min with each participant. The answers were transcribed verbatim and analyzed thematically in Chapter six (06).

5.4.5 Pre/Post Experiment Tests/ Students' Drafts

Pre/Post- tests are designed during the first phase of our research to evaluate students' performance at the start and at the end of the experiment. The pre test serves at determining pre-existing differences and help the researcher in developing his instructional tools as well as reconsidering post-test outcomes. As it is stated, "Without a pre-test, the researcher would never know that the groups were different to start with, which might lead the researcher to misinterpret the results." Denning,

2000 (p.7). The pre-test of our experiment took place during a regular classroom hour at the beginning of the academic year 2021/2022. Our pre-test did not aim at highlighting the proficiency levels of the two group but rather to attain a preliminary picture about their current writing level this identifying any missing gaps that may have been left from previous instruction. In order to do so , the pre-test contained a variety of activities that aimed at testing students writing basic sub-skills such as grammatical skills that are connected to items like the sentence, the clause and the phrase; rhetorical skills that is partially associated to coherence and cohesion, and organizational skills that include organizing ideas into paragraphs and concepts like unity. The first task in the writing pre-test attemped to evaluate the students' knowledge of the basic concepts (like the clause, sentence, and punctuation) they studied in their first year. The second task tests students' knowledge about unity and coherence through putting jumbled sentences in the right order to have a coherent paragraph ; and the third task , "Written Production", as its name indicates, is a free writing activity where students are asked to write an essay on the following:

> The world Health Organization (WHO) declared the corona virus as a global pandemic and since then, the illness it causes known as Covid 19, has spread to nearly every country in the world. Since then, many changes occurred in the globe.
>
> Write a five paragraph essay of how covid 19 changed your country's policy in terms of economy, health care and education.

Essay writing requires students to put into practice all the writing skills that they have developed during their first and second year as well as sustaining the instructor with more indications about the students' weaknesses and areas that need more practice.

The post-test took place after six weeks from the pretest ,that is one week before the start of the first semester exams . In order to avoid any pressure, the researcher did not one to use the first semester exam as a post test but rather informed the students that the test was another task that was part of continuous assessment. Just like the pretest, the post test was designed in a similar manner

that contains two tasks that cover language mechanics and an essay writing. In the first task, students were given an introduction followed by comprehension questions on the constituents of the introduction. In the second task, the second task is about paragraph editing and locating errors; and the third task, is comparison contrast essay about comparing and contrasting ways of communication between the past and present.

It is recommended that the pretest and the posttest should be similar in form and content and this is why we opted for a similar structure . Since both methods of development are a part of coherence, it was not problematic to ask students to write an expository essay on the pretest and a comparison/contrast essay on the posttest. Both types of writing are subject to the same conventions: they both require an introduction that includes the thesis, developmental paragraphs that each have a topic sentence, support, unity, and coherence, and a conclusion.

In the second phase, students were not given timed tests in the classroom but instead they were given essay assignments to be written at home. Essay topics were mostly argumentative ones since it was the one tackled in the classroom. The students had to edit their essays following the pro writing aid recommendations and send the teacher both versions of the written essay that is before and after edition. Students' essay drafts before and after revision served as source of data to be compared and contrasted with the interview's findings.

5.5 The Pilot Study

Before conducting the main study, a pilot study is important in order to "....identify ambiguities, other problems in wording, and inappropriate items, and provide sample data to clarify any problems in the proposed methods of analysis prior to the collection of data in the study proper" Weir and Roberts, 1994 (p.138). A pilot study also helps the researcher to test the instruments on a small scale to verify "face validity (the extent to which the tool appears to be addressing the concepts or variables of interest) and content validity (the extent to which a tool covers all relevant concepts and variables)" (Sim and Wright, 2000, p. 72). That

is, prior to the main data collection, the researcher can use the pilot testing to check the viability of the research instruments and identify any potential concerns. Therefore, performing a pilot study could provide insight into potential areas of the study's failure and whether its procedures and instruments are adequate or not. Prior the main study, the research methodology was first pilot tested. This phase was undertaken to investigate whether there were any technical issues, confusing instructions, or whether the technological environment was appropriate. The pilot study was meant also to estimate the students' engagement and participation in Edmodo and the tasks provided on the site. The pilot study was conducted with third year student of the academic year 2020/2021, which means a year before the real experiment.

Piloting the study yielded the following results: First, it was hard for the teacher to convince some students to be active in the platform for they did not show any kind of cooperation or enthusiasm towards this mode of learning ; they hardly log in or some did not even create an account. It was only when students have learned that their interaction in the platform is going to be graded that a change in the attitude was noticed. Additionally, emphasis was placed on the percentage of involvement that the course allots, and in this regard, they were informed that their participation in class and on the platform, primarily through the tasks and online quizzes, tallied together. Second, we noticed in the pilot study that students' performance differed to a great extent following their autonomy levels other than their proficiency levels. It was at this stage that a new hypothesis was formulated that sought primarily the relationship between learners' autonomy and their performance in writing. Third, in attempt to seek a suitable online instrument that provides corrective feedback to students' writing, the researcher suggested the use of a text evaluator named "Hemingway Edit". Yet, after its implementation with the students, it appeared that Hemingway edits only the writing style problems and does not edit grammatical mistakes. As such, the researcher had to look for a substitute that is not only a style editor but also a grammar corrector. After some

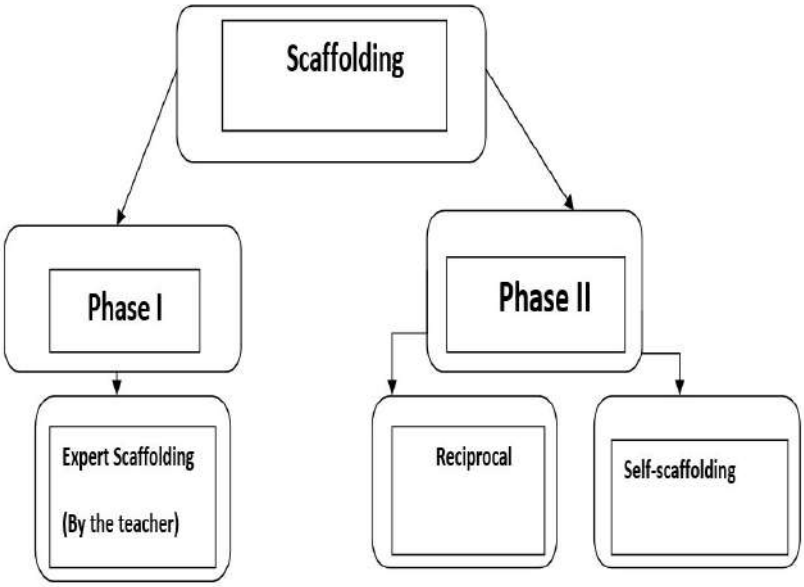

Figure 5.3: an illustration of our Research Pattern.

relevant research, the only free and reliable tool that is concerned with language mechanics and writing style was the pro writing aid.

5.6 The Study Proper

Our work is theoretically embedded within the frame of the sociocultural theory. The three agency types of scaffolds define the interest of our work (expert, reciprocal and self-scaffolding). To illustrate, our work is divided into two main phases, each phase has different hypotheses to test and different instrumentation. However, the two phases do not contradict each other rather they complete each other by explaining how scaffolding occurs whether by the teacher, the peers or the student in a hybrid context.

5.6.1 Phase I: (Edmodo Based Learning)

The first phase took place during the first semester of the academic year 2021/2022 and lasted for six weeks ending by the exams of the semester. For the sake of the present study, an Edmodo folder named "Writing Course" was created by the researcher while students could join progressively. A pre questionnaire was

designed and diffused via Google Docs and shared on Edmodo. After, a pre test was launched in a regular classroom hour that aimed at unveiling students' strengths and weaknesses. Following the framework proposed by U.S air force, this stage was divided into five stages: Analysis, Design, Development, Implementation and evaluation/feedback. Within this stage, the students were trained on using the platform Edmodo to reinforce a variety of sub-writing skills. This platform is believed to offer a handy communication channel for both the course instructor and the students, as well as among the students themselves. It could be used to respond to students' introduction development or writing, or it could be used to ask students to edit their work to produce an error-free piece of writing, commenting on components of each body paragraph based on a checklist, until they finish their work by writing the final draft and sending it to the instructor's private box for feedback and correction.

To receive immediate feedback, all submitted assignments are read and revised. In addition, participants were propelled to share their enquiries or the points they did not understand in the classroom on the platform. By this stage, Edmodo helped students to demystify the learning aspects that they did not fully grasp and be involved in creating thoughtful responses and reflective interaction with their peers and the tutor. Additionally, the students were given online quizzes about certain writing skills aiming at giving the teacher an ongoing formative assessment on their performance.

With regard to sentence form, coherence, punctuation, and spelling, each quiz was designed to improve a certain writing ability. In parallel, the participants were also required to engage in classroom activities which included some writing tasks that revolve around peer-reviewing, proofreading, and peer-editing. It should be mentioned that the researcher resorted to the use of Effective Academic writing: The Essay by Alice Savage and Patricia Mayer and The Writers' Workplace with Readings by Sandra Scarry as the main teaching references during the course. At the end of the experiment, a post test was administered to the participants to check if there was any improvement in their writing. Then, the students had to complete

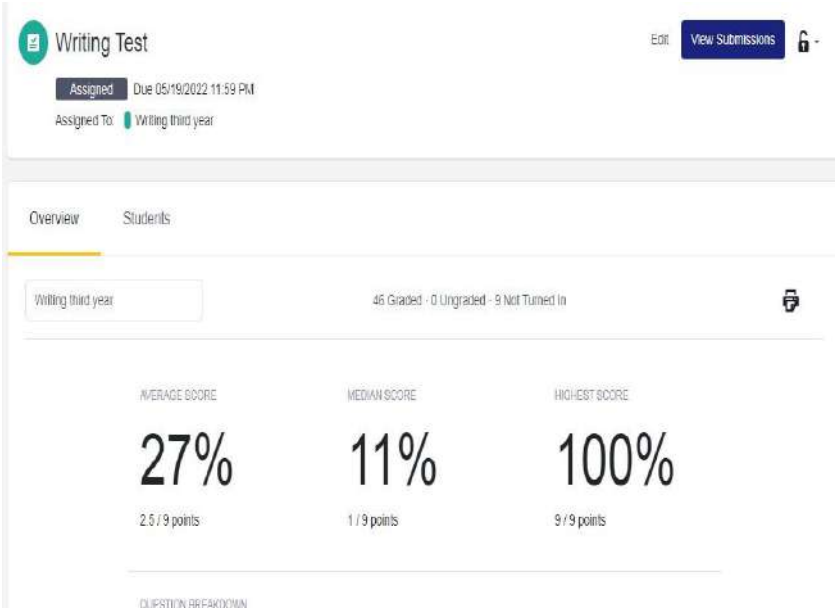

Figure 5.4: Edmodo's Evaluation of the Students' Performance in an Online Quiz.

a questionnaire that was composed of 15 close ended items about their perception of using Edmodo, their writing performance and self regulating agency development.

5.6.2 Phase II: (Feedback based Learning)

Applying both peer and computer-generated feedback to promote EFL learners' composition remains a less explored area of research. The aim of this phase was two-fold. Firstly, it scrutinized whether combining both online automated feedback and peer feedback had a substantial impact on EFL learners' writing performance or not. Secondly, it investigated their perceptions on the use of the blended automated feedback and peer feedback.

These two purposes could be best met through a mixed-method design that entails an analysis of students' drafts before and after feedback as well as semi-structured interview with the participants. Such variety of instrumentation will allow us to validate the quantitative findings through qualitative ones and obtain a more complementary view of the issue under investigation.

In this phase, the researcher continued to assign essay writing tasks for students to be done at home. She also asked the students to provide the initial version of the essay along with the revised version through the pro writing aid. Some

students sent screenshots of the platform's edition while some sent directly the initial drafts of the revised one. After, the researcher had to post the revised version of the essay in Edmodo's newsfeed so that students can use the comment section to write their remarks. The experiment lasted for about four weeks ending with a semi-structured interview that aimed at knowing students' perception about both sources of feedback. The present part of our research is hoped to answer the researchers' call for mixing both computer-generated and peer feedback for better writing outcomes in the EFL context and puts into question blending both automated feedback and peer feedback ability in impacting learners' essay writing.

5.7 Data analysis

Both qualitative and quantitative data are used in the examination of the data for this study. Students' drafts, interviews, and surveys (which included both open-ended and closed-ended questions) were used to examine qualitative data. The quantitative data, such as questionnaires and pre/post tests were used to evaluate the improvement of students' activity after the experiment.

Along with collecting data, interpreting it, and producing reports about the outcomes of the technological intervention project for students, qualitative data analysis was also employed. Quantitative data was drawn using descriptive statistics such as graphs or tables of student measurements from data analysis that demonstrated the comparative scores between their work assignments during the intervention. The researcher went for combining qualitative and quantitative analysis because "Using more than one type of analysis is believed to provide more reliable research findings since the latter are not compressed into a single dimension of measurement" (Hamzaoui, 2006, p.130). However, it is crucial to accurately match the various analysis types to the data generated by the research instruments employed.

In order to provide credible and valid results, the researcher reduced and summarized the extensive and varied raw material to identify the key themes that connected the research objectives. The validity of the research data was confirmed through data triangulation.

5.7.1 Qualitative Analysis

This type of analysis is based on the researcher's subjective judgment to analyze a given value or prospects based on non-quantifiable information. The aim is to describe, illustrate and reveal facts. These facts "may take the form of verbatim descriptions, interviews, written responses, or unstructured observations" (Weir and Roberts, 1994, p.159).

As such, we employed the qualitative method for the interpreting data of all the instruments used in this research. In the two phases of the experiment, qualitative analysis was always impaired with quantifying data in order to draw themes.. Then, we used the qualitative method in this work in analyzing students' questionnaires and interviews. After the responses were collected and interpreted, thematic analysis allowed to make categories of informants' assertions permitting the synthesis of statements. For better results, this method was followed by quantifying data.

5.7.2 Quantitative Analysis

Quantitative analysis was used by the researcher at different stages of the current study for multiple purposes. We used numerical data in analyzing students 'Questionnaires, pre/post test, autonomy checklist and students 'drafts. The pre/ post-test data served as a source of comparison between the students' performance before and after intervention. The data were summarized in tables and figures in which numerical data are transformed into percentages to permit comparison. At a later stage, the research had to draw comparison to students' performance vis-à-vis their autonomy level that was numerically calculated with the help of an adopted checklist. Also, quantitative data helped reveal proficiency level differences between pes group who outperformed pes groups in several occasions. By this, a mixed method approach to research offers a great deal of promise to improve the rigor and enhance the analysis and conclusions of our research work by combining both quantitative and qualitative data. Additionally, this enables us to respond to the research questions by utilizing a range of research techniques that assist

in obtaining data of various kinds from various sources, leading to triangulation, which in turn strengthens the validity of the findings.

5.8 Limitations of the study

When conducting the present research, the investigator had to deal with some hurdles; among which some are considered as limitations of the research. Indeed, acknowledging the study's limitations allows readers to gain an understanding of the study's framework and value. The first limitation is concerned with the research design that is considered as a pre-experimental design. A major drawback of pre experimental design is that pre-experimental designs have a distinctive vulnerability that their validity is frequently threatened. As a result, it becomes challenging to reveal rival hypotheses or explanations due to the possibility of human error.

Second, the material design was limited to the writing module. Implications of the study could also be expanded to other modules other than writing.

Another major limitation of the present work was the lack of social engagement and incomplete tasks with some students. The researcher- teacher had to remind undisciplined students that the interaction in the platform is a part of the TD mark. Regardless of the learning environment, we believe that developing online discipline is similar to developing physical discipline as both depend extensively on the instructor's aptitude to control his group of learners.

5.9 Conclusion

Within this chapter, we aimed at providing the readers with a general framework of the research procedure. It described the conceptual underpinning of the current research process and the nature of the study. It included also a description of the study's sample, which consisted of Ens third year student at Laghouat city.

The present research is defined as a pre-experiment study involving two experimental groups from the department of English in EnsL. The research procedure is divided into two major phases that varied in time and purpose. Each phase has

been designed to meet a particular aspect of our research. Several instruments have been used in this research ranging from questionnaires, pre/post tests, students drafts and students' interview. The rationale behind using each instrument has been illustrated in the chapter. Last but not least , it has highlighted the data analysis procedures that have been used to analyse data using qualitative and quantitative approaches.

Chapter 6

Data Collection and Analysis (Phase One)

Contents

6.1 Introduction

Since 2020, the Algerian Higher Education system has evolved to introduce Blended learning to its adherents in response to the changing contexts imposed by Covid 19. Although scholars, teachers, and students have praised this measure, online learning in Algerian universities, particularly during the critical period of the Corona pandemic, proved to demonstrate many lacunas. This chapter suggests a hybrid learning model in the course of Writing for third year ENS students in Laghouat using the platform Edmodo. The experiment involved the participation of third year Ens students whom were divided into two experimental groups. The data revealed was organized following the known model *ADDIE (Analysis, Design, Development,Implementation, Evaluation).*

The study described in the remainder of this chapter employed the use of

a pre -experiment questionnaire. Resorting to a qualitative research tool prior the experiment could give the instructor helpful insights that would assist in the diagnosis of problems with the way in which the learners are being instructed to locate potential solutions to existent problems. During the study, pretest, autonomy checklist, post test were used as research instruments. The study ends with a likert scale questionnaire that aims at investigating the effect of the platform on students' writing performance in terms of mastering the writing process and benefiting from the feedback provided.

The chapter ends with a description of the findings of the myriad types of data collected in the chapter in order to answer our research questions. The results are followed by an objective and thorough examination of the quantitative data while adhering to the research methods. Tables and figures are used to present the results of each research question so that conclusions can be drawn from the first phase.

6.2 Questionnaire on Students Attitudes and Learning Preferences

Before the experiment, a questionnaire was addressed the third year students at the Ens of Laghouat during the academic year 2021/2022. The questionnaire aimed at unveiling students' attitudes and perceptions concerning writing instruction, ICT's, and the latter's potential role in improving students' composition skills. The questionnaire was designed to learn about student's attitudes towards blended learning in writing as well as they current writing practices and learning preferences.

The questionnaire was created via Google Docs and shared online through the platform Edmodo few days after the groups was created. Both Pem and Pes groups were asked to log in and answer the questionnaire. Fifty (50) students only answered the questionnaire out of fifty-four (54).

6.2.1 Analysis of the Questionnaire

Section One: The E-learning Experience

Q1: How did you find the distant learning experience during the lock-down ?

The aim of this question is to give respondents the freedom and space to report any problems or impediments they encounter while utilizing e-learning. Using this type of question would yield more accurate information and actionable knowledge on the behalf of the learners. The finding provided evidence that more than half of the respondents (70%) agreed that it was not the best learning experience they had. The respondents put answers such as "It was somehow difficult" or "Unfortunately we did not use the platform Moodle as it should be used (properly), or "there were no interaction only blocks of PDFs, I got unmotivated honestly." Thus, the findings indicate that most of learners failed to have a pleasant distant learning experience. Such outcomes are unsurprising because of the unprecedented e-learning experience as there will always be a number of learners who are disoriented and want aid in discovering the content they are searching for .However; the remaining 30% agreed that they could access the e-learning content with relative ease. Students put comments such as "I found it helpful" or I think this experience is very important for us as students not only because of the current situation (covid 19) but also as an experience that may help us in the future". Important to mention, a small portion of students mentioned that they had technical problems and they could not even get access to their accounts.

Q2: Did you easily get access to your moodle account?

A total of 70% acknowledged that they could not access their learning platforms easily, while the remaining 30% had no problem in accessing the platform. Again, this comes with no surprise as it was the students' first e-learning experience and did not receive any training on how to use the latter.

Q3: How did you find the lessons?

Table 1: The Students' satisfaction with the e-learning content

Item	**Percentage**	**Number**
Lessons are well explained and well detailed	22%	10
Lessons need clarifications	59%	30
I can understand the lesson thoroughly using only the e-learning content and no need for the teacher	19%	10

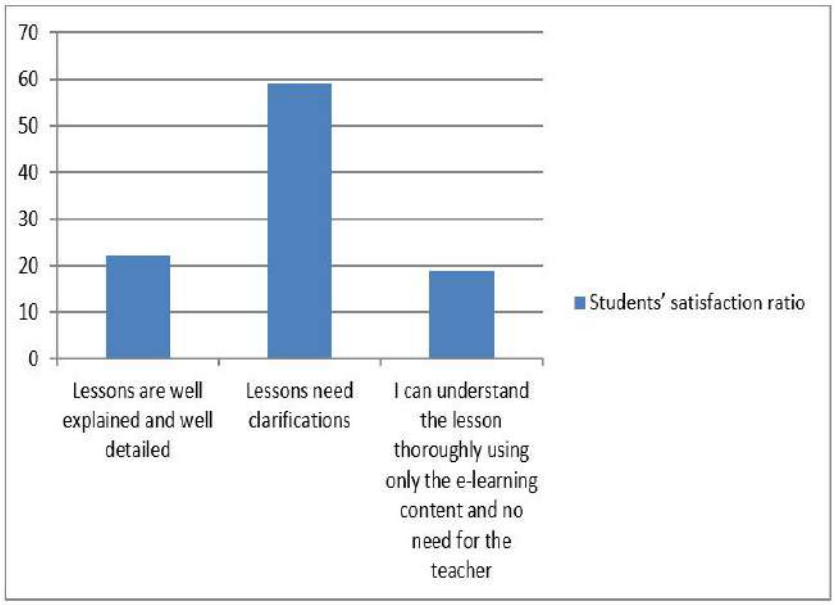

Figure 6.1: The Students' satisfaction with the e-learning content.

This question attempted to know the respondents' opinion about the type, quality and the accessibility of the learning contents on the e-learning platforms. Table 1 below summaries the findings of some of the most important items:

As table 1 indicates, the vast majority of respondents were displeased with the quality of the instruction they were given. For example, 59% of them selected "Lessons need clarification"; while only 22% found the content well detailed and. Finally, only a minor portion went for the last option which goes as "I can understand the lesson thoroughly using only the e-learning content and no need for the teacher". Such results demonstrate to what extent the Algerian university student is dependent on the teacher.

Q4: Did you face any difficulties in understanding your online lessons?

Table 2: Students difficulty in understanding the online lessons.

Item	Percentage	Number
Yes	46%	23
No	14%	7
Sometimes	40%	20

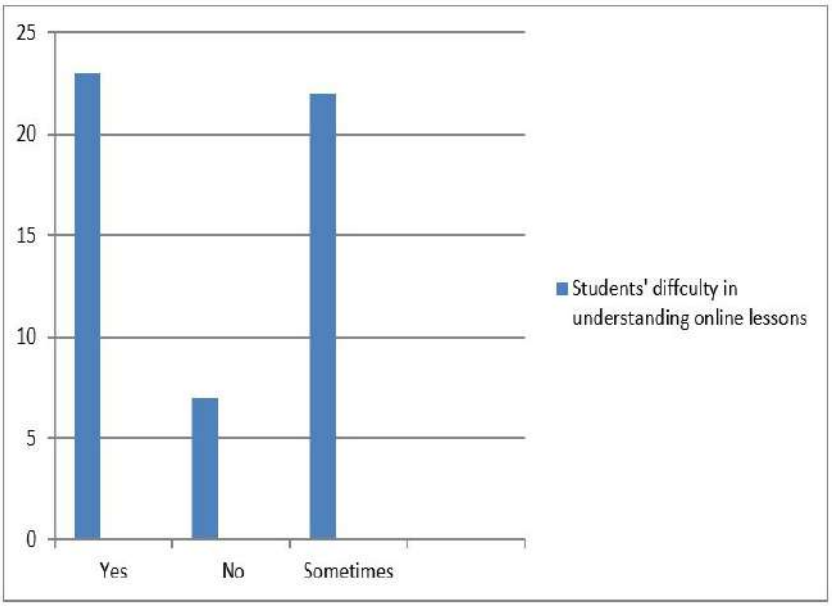

Figure 6.2: Students difficulty in understanding the online lessons.

The respondents' feedback shows that only 46% of them found difficulties in understanding their lessons while 40% of the respondents declared that they faced difficulties to a less extent. On the other hand, a total of 14% reported that they faced no difficulties in understanding the lessons.

Section Two: Writing Abilities

Q5: How do you describe your writing level?

Here, 60% of the respondents regard their writing level as average whereas the other half label their level as either good (25%) or unsatisfactory (25%). The results obtained suggest that the vast majority of students are average in the skill of writing. Such results might be due the complex nature of the writing skill as Grabe and Kaplan, 1996 (p.87) argued "Probably half of the world's population

Table 3: Student's Level in writing.

Item	Percentage	Number
Good	25%	10
Average	63%	30
Unsatisfactory	25%	10

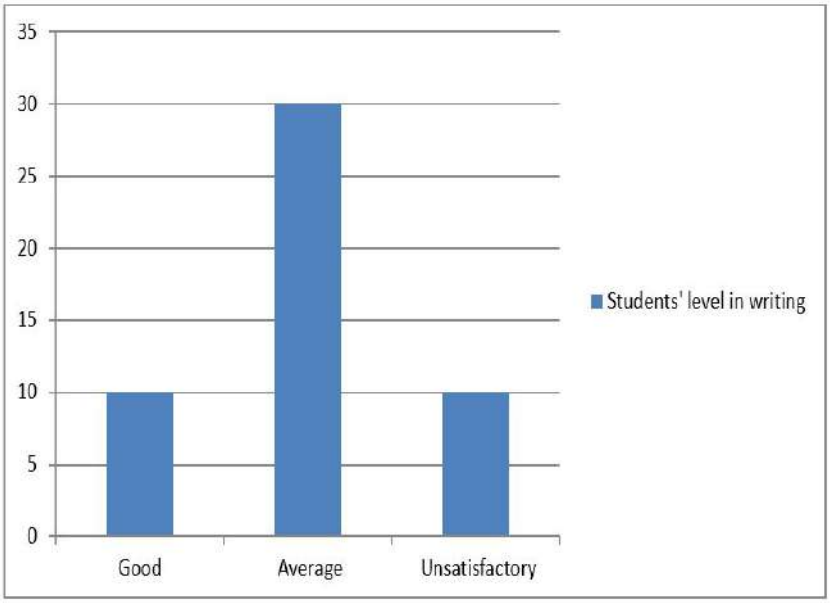

Figure 6.3: Student's Level in writing.

does not know how to write adequately and affectively". This fact is also supported by Nunan, 1991 who pointed out that "writing is an extremely complex, cognitive activity for all which the writer is required to demonstrate control of the number of variables simultaneously"(1989:p.36).

Q6: You think it is necessary to master the writing skill because:

The current question aimed at diagnosing students' learning objectives. Several options were provided to the respondents. Student's answers revealed that the interest in the writing skill is due the consideration of the latter as "a basic skill" and "to help in improving the grades of other modules".

Q7: Do you write anything about what you read before?

This question has been devised in order check students' awareness of the relationship between reading and writing. Indeed, Raimes emphasized that "reading

Table 4: Learning Objectives.

Item	Percentage	Number
It is a basic skill	64%	32
It helps in producing different text types (expository, cause and effect…etc)	10%	5
It helps in improving the grades of other modules	20%	10
It is important to succeed	6%	3
Other reasons	0%	0

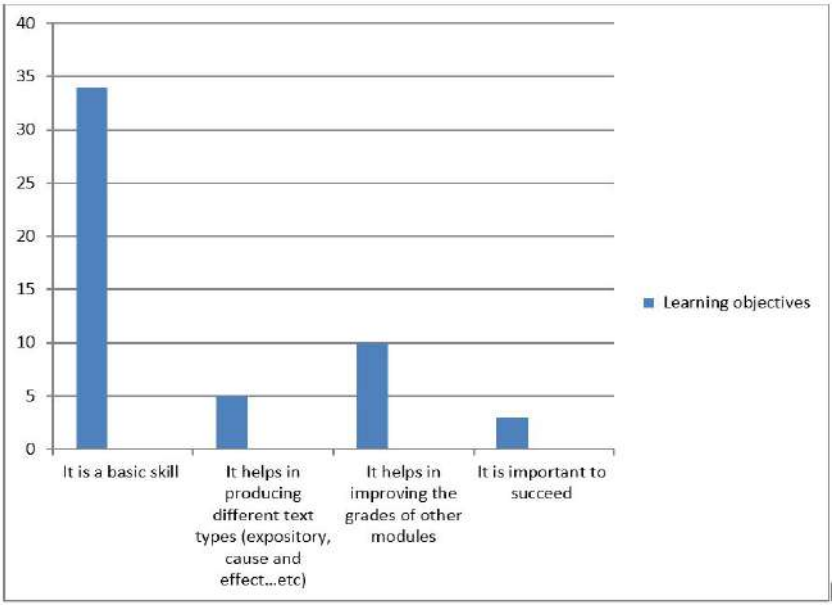

Figure 6.4: Learning Objectives.

can do far more in teaching of writing" (1994: p.60). Also, it is pointed by Fowler that "Good writing depends on extensive reading, not only previous reading of other works but also frequent scans of your own piece, the one you are working on" (2006: p.60). The results obtained, however, indicate that the majority of the

Table 5: Reading in relation to writing.

Item	Percentage	Number
Yes	40%	20
No	60%	30

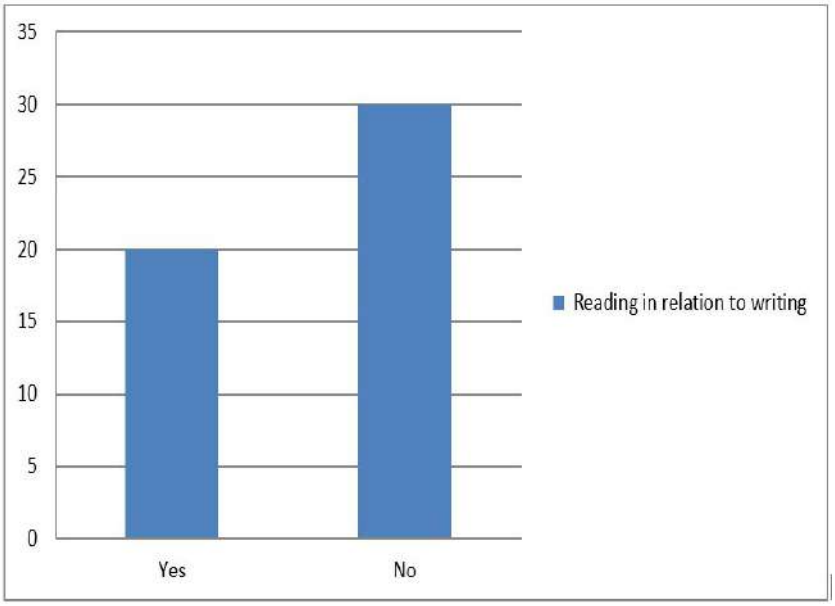

Figure 6.5: Reading in relation to writing.

Table 6: Problematic aspects in Learning to write.

Item	**Percentage**	**Number**
Finding the appropriate idea	52%	26
Organizing ideas	20%	10
Choosing the appropriate essay development	10%	5
Vocabulary Choice	12%	6
Grammar Correctness	2%	1
Mechanics (punctuation, spelling and so on)	4%	2

respondents (60%) do not write anything about what they read or learnt before. Considering the close relationship between reading and writing, we deduce that lack of reading is the primary cause of students' deteriorated written performance.

Q8: If you find difficulty while writing, which of the following aspects do you find the most challenging?

Q8 focuses on the most challenging parts of writing an essay. In this question, students were asked to choose the component of learning to write that they found the most difficult. A total of six items were suggested, each reflecting a different aspect of a conventional essay. The first item, "finding appropriate ideas," usually

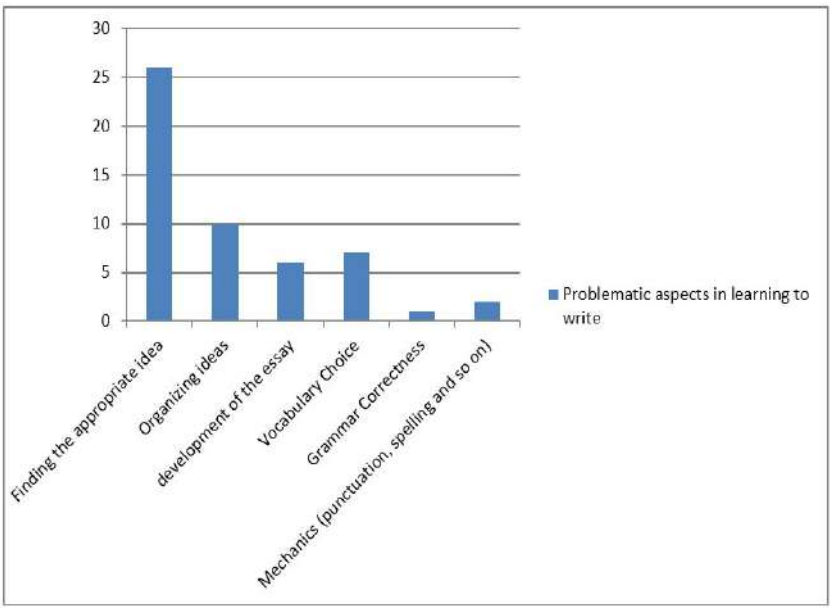

Figure 6.6: Problematic aspects in Learning to write.

Table 7: Difficulties in the writing process.

Item	**Percentage**	**Number**
Planning or Prewriting	62%	31
Drafting	32%	16
Revising	4%	2
Editing	6%	3

occurs at the planning stage of the writing process, and it is usually the most difficult part for students to handle before beginning to draft their essays as they have to consider the essay subject using, most of the time, their background knowledge. The second item and third items are linked to coherence; The last three items, "vocabulary choice," "grammar," and "mechanics," are all concerned with the shape or structure of ideas. According to the results, the facet with the greatest percentage is "identifying appropriate ideas," with a total of 52%. "Organizing ideas," with a percentage of 20%, and "Choice of vocabulary," with a percentage of 12%.

Q9: Which stage in the writing process is the most difficult for you? (more than one answer is possible)

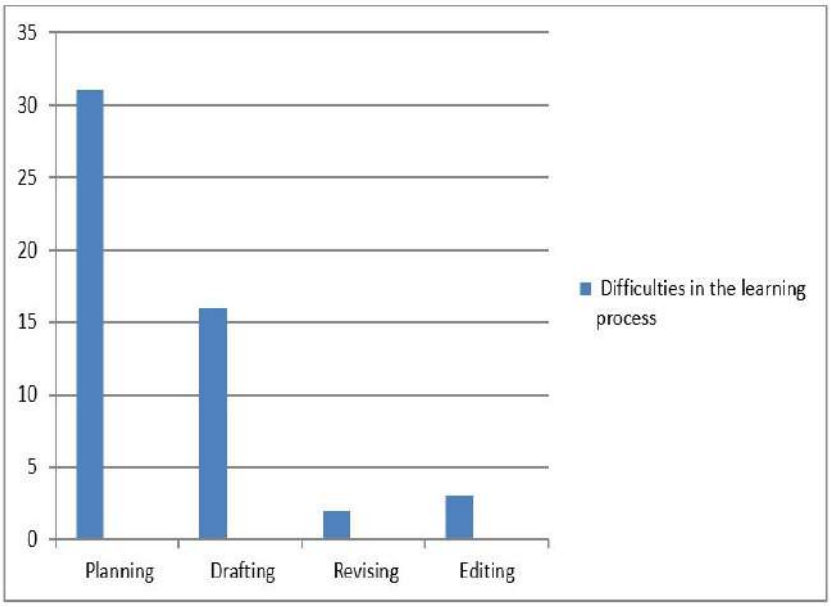

Figure 6.7: Difficulties in the writing process.

Table 8: Frequency of Writing practice in the classroom.

Item	**Percentage**	**Number**
Often	38%	19
Always	24%	12
Sometimes	32%	16
Rarely	6%	3

Q9 is concerned with the process of writing that every academic writer must be acquainted with. By now, the process approach has gained certain popularity in teaching composition as well in research that is concerned with second language writing. According to Table 7, 62% of the respondents considered 'planning' as the most difficult stage of the process of writing compared to drafting, revising and editing. Such an answer somehow confirms the response obtained from Q8 in which students' declared that "finding the right ideas" or breaking the "writer's block" is the toughest stage.

Q10: How often do you practice writing in the classroom?

Question 10 is concerned with how often students practice writing in the classroom. A four-point Likert scale was put in order to get a satisfying answer.

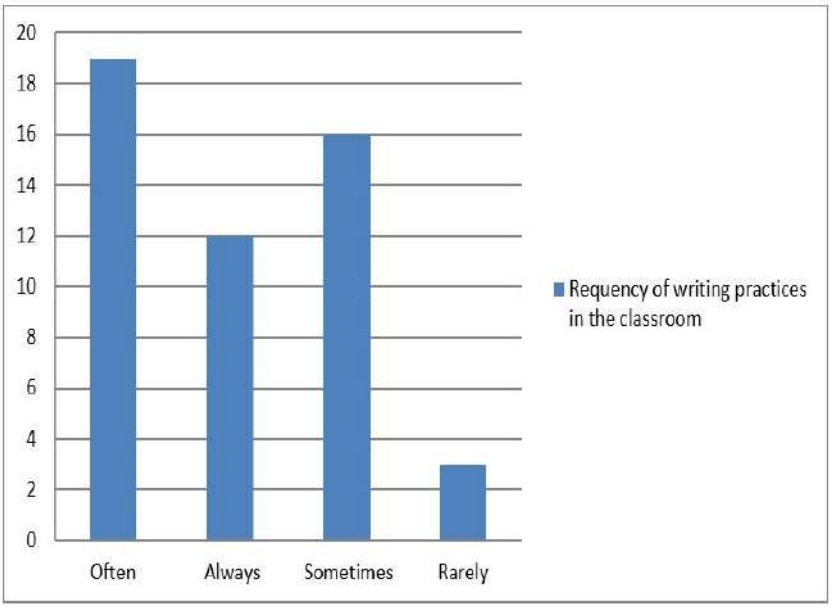

Figure 6.8: Frequency of Writing practice in the classroom.

Table 9: Frequency of teachers' feedback on students' writing.

Item	**Percentage**	**Number**
Often	34%	17
Occasionally	20%	10
Sometimes	40%	20
Rarely	6%	3

According to Table 8, 38% of students said they practice writing in the classroom in a frequent manner, 32% said they practice writing sometimes, and 24% reported that they always practice writing in the classroom.

Q11: How often do you receive feedback on your written productions from your teacher?

Teacher feedback is another important topic to discuss with students. Frequency of feedback is crucial because the more constructive feedback students receive on their written work, the better. The goal was not specified as to whether feedback was provided inside or outside of the classroom or at what stage of the writing process it was provided.

Q12: What kind of teaching material does your teacher of writing

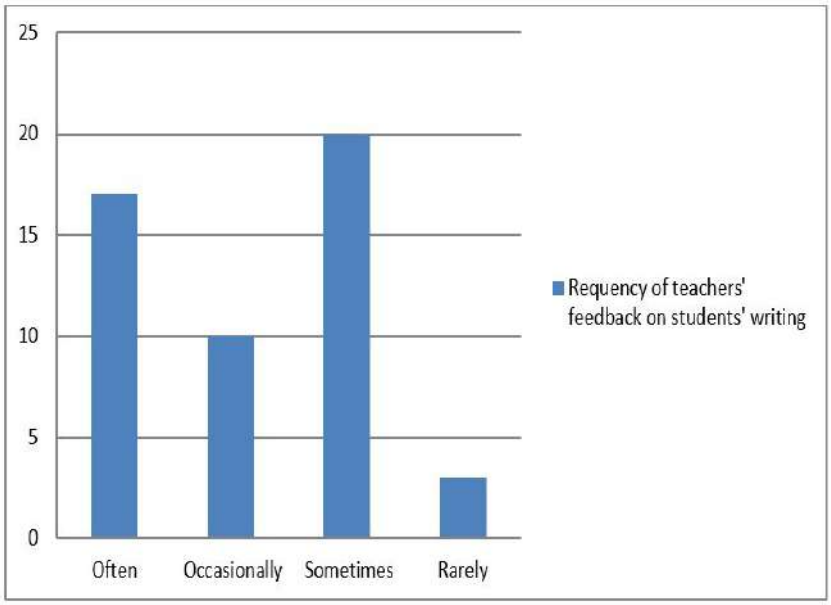

Figure 6.9: Frequency of teachers' feedback on students' writing.

Table 10: Material type used by teachers in the writing class.

Item	**Percentage**	**Number**
Printed handouts/textbooks	60%	30
Printed texts	38%	19
Powerpoint Presentations	2%	1
Videos	00%	0

use in the classroom?

Q12 was asked to see if the teachers of writing employed a range of materials in the classroom. It is important to note that the variety of instructional materials stirs the learners' interest and helps to increase their drive to learn to write. Q12 contains five items that indicate the most likely types of materials that teachers in the WE classroom might utilize.

The results show that the widest "printed handouts" are the most commonly used amongst writing teachers with a proportion of 60% and "textbooks/printed texts" with a proportion of 38%.

Q13: Would you like to be introduced to some desktop or phone applications that will facilitate your writing process?

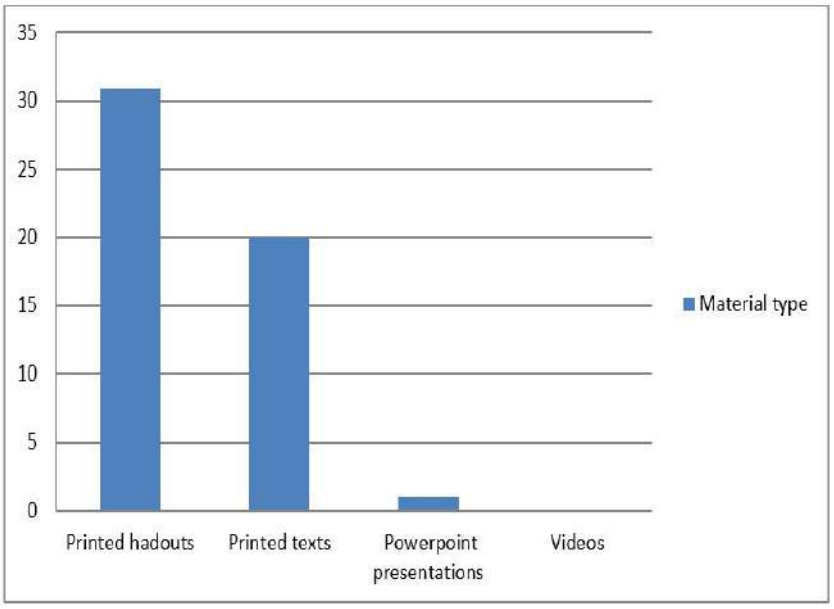

Figure 6.10: Material type used by teachers in the writing class.

Table 11: Students' motivation towards electronic feedback.

Item	**Percentage**	**Number**
Yes	100%	50
No	0%	0

Q13 aims at figuring out students' motivation towards being guided by technological devices to facilitate their writing process. All the respondents 100% welcomed the idea of being introduced to digital helpers. Such result is rewarding as it indicates the positive attitude that the learners hold towards the integration of ICT in learning.

Section Three: Learning Preferences

Q14: In learning to write, you prefer to:

Q14 is interested in uncovering the students' learning style and preferences in relation to the individual vs. the collaborative work, inductive learning, and other factors that can be related to blended learning. The rationale for having this question is that students' learning styles and preferences might have an impact on how they learn and how motivated they are to study. The results for Q14

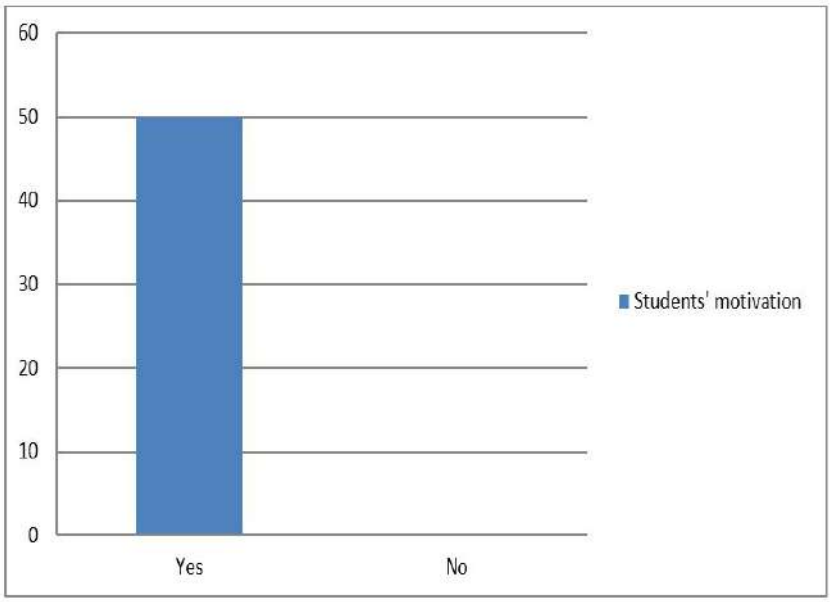

Figure 6.11: Students' motivation towards electronic feedback.

Table 12: Students' learning preferences.

Item	**Percentage**	**Number**
Work individually	32%	16
Work within a group or a pair in the classroom	10%	5
Write freely of free topics of your own choice	18%	9
Do tasks under teacher's supervision rather than writing at home	40%	20

demonstrate that learners most preferable way to learn is the one under teacher's supervision (40%), while individual work is preferred by a majority of 32%.

Q15: Do you like the topics that are usually presented by your teacher?

Table 13: Students' interest in the topics suggested by the teacher.

Item	**Percentage**	**Number**
Yes	40%	20
No	4%	2
Sometimes	56%	28

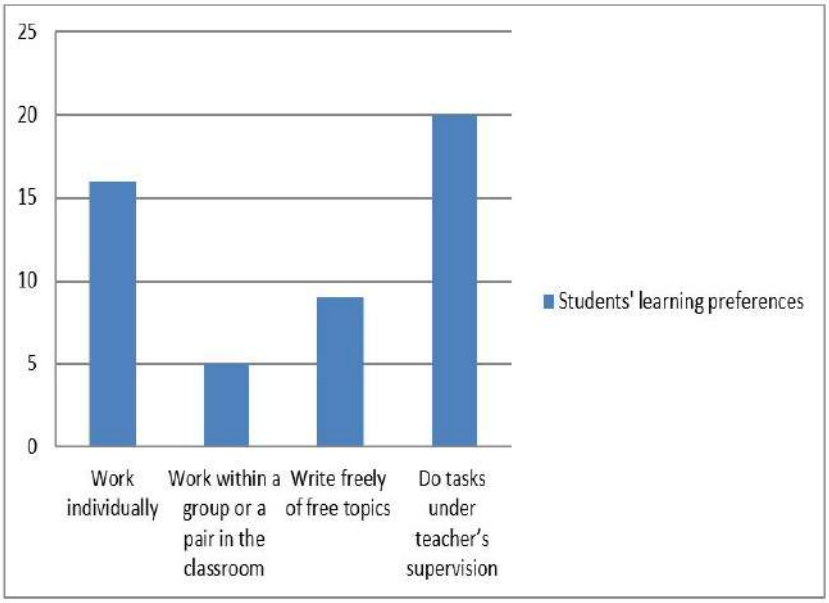

Figure 6.12: Students' learning preferences.

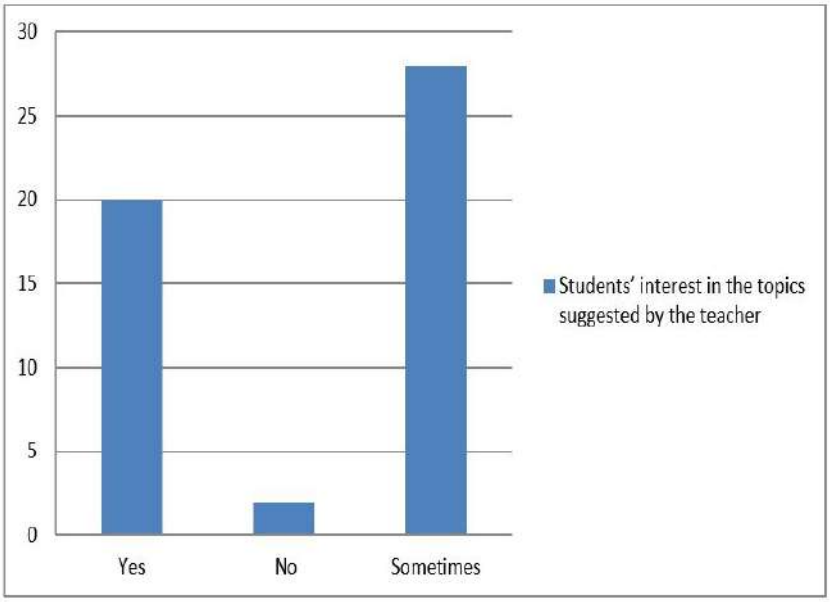

Figure 6.13: Students' interest in the topics suggested by the teacher.

Learning to write requires a lot of practice and devotion. To ensure that every student has an equal opportunity to learn, the teacher suggests topics for the students to write about. However, it may be the case that students wish to write about topics of their own choice and interest. Question 15 was designed to determine whether or not students are interested in the topics suggested by their instructors. As displayed in table 5.13, 40% of students like the topics

Table 14: Students' learning style.

Item	**Percentage**	**Number**
Things that are visible to you such as images, videos, charts, graphic organizers	50%	25
Things you listen to	10%	5
Things you read and write	34%	17
Things you can experience or grasp	6%	3

suggested by their teachers, while 56% selected "sometimes" as their response. When students are captivated by topics that intrigue their interest, they are more likely to demonstrate eagerness to devote time and effort to take part in those topics and to conduct additional readings to gain a deeper understanding of those topics.

If no, please why?

The ones who answered with "no" the previous question, were required to justify their answer. Despite the fact that a minority answered with "no", their responses might be generalized to a greater public. Students' justification varied from "because they are boring" or "redundant" or simply because they lack the background knowledge as one students puts it "sometimes we are given topics that require a lot of reading and research in order to write about."

Q16: Do you easily learn from:

Q16 was asked to know about learner's learning styles. The purpose of such inquiry was not to find the most prevalent learning method among the students, but to demonstrate that people learn the target language in multiple ways. Q16 was created using Fleming's VARK model of learning styles (Fleming & Baume, 2006), which divides learning styles into four categories: visual (V), aural/auditory (A), read/write (R), and kinesthetic (K). As table 5.16 indicates, some students learn better by reading and writing 34%, while others are more visual, with a rate of 50%. Other students (10%) are more auditory, while the least minority consider themselves as kinesthetic learners (6%).

Q17: During the session of writing you feel:

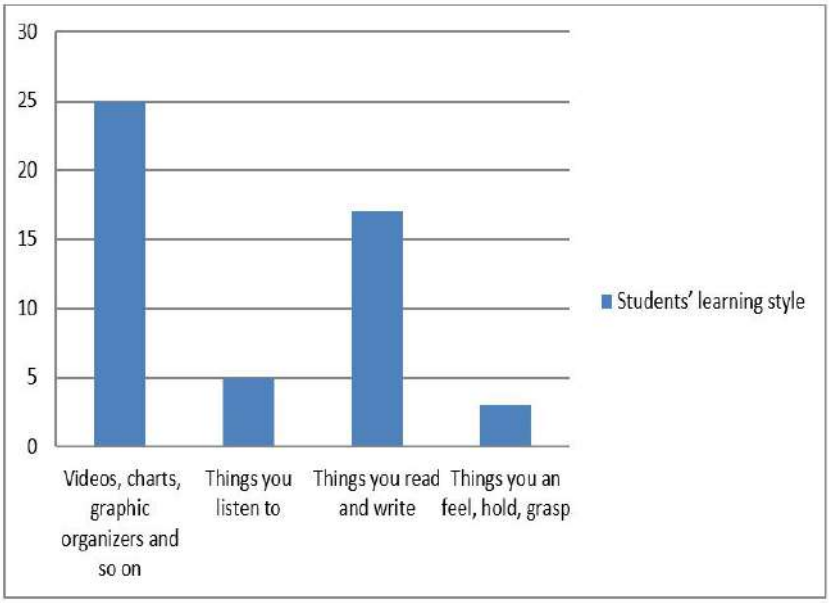

Figure 6.14: Students' learning style.

Table 15: Students' interest in the writing session.

Item	**Percentage**	**Number**
Engaged	44%	22
Bored	2%	1
Depending on the studied topic	54%	27
Other	0%	0

Q17 targets the affective aspect of the learning process. The question suggests several alternatives, one of which is the learners' engagement in relation to "the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught" (The Glossary of Education, 2014). The results obtained for Q17 show that the interest depending "the studied topic" (54%) won the lion's share as the most impacting factor on students' interest. Meanwhile, a total of 44% declared that they feel engaged in the writing class while only 2% declared that they feel "bored" during the writing class.

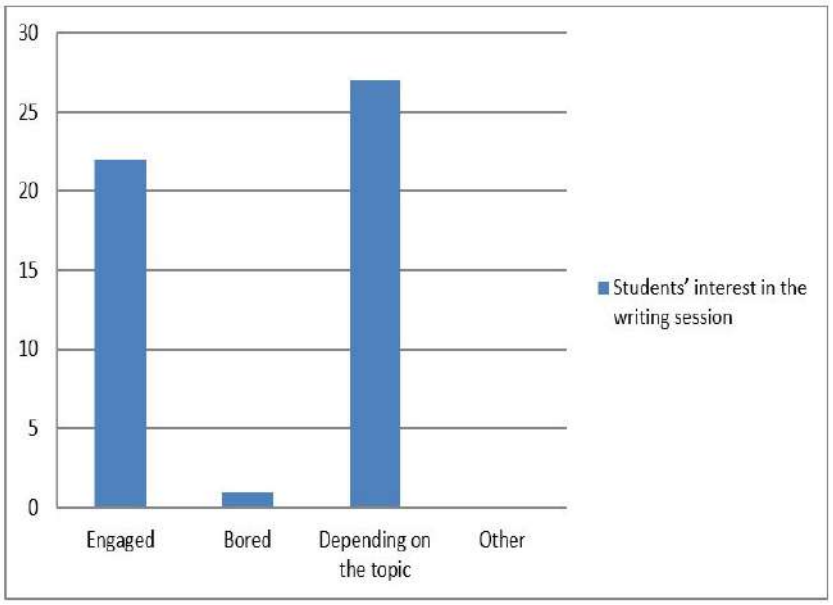

Figure 6.15: Students' interest in the writing session.

Table 16: Students' familiarity with ICTs' in their learning process.

Item	**Percentage**	**Number**
Yes	96%	48
No	4%	2

Section Four: Students' acquaintance with Icts

Q18: As a student of FL, do you feel that technological devices (computers, web 0.2, mobiles..and so on) are helpful in your learning process?

Q18 aims at checking students' interest in using technological devices to enhance their learning process. From the results gleaned, ICTs appear to play a significant role in assisting ESL students in acquiring the foreign language. Almost the whole population (96%) claimed that technological devices help them achieve their tasks either inside or outside the classroom.

Q19: Do you think that ICTs' should be incorporated into EFL programs as much as possible in Algerian institutions?

Q19 was asked in order to know about whether students are welcoming the idea of integrating technological means in their courses in the future. Findings revealed

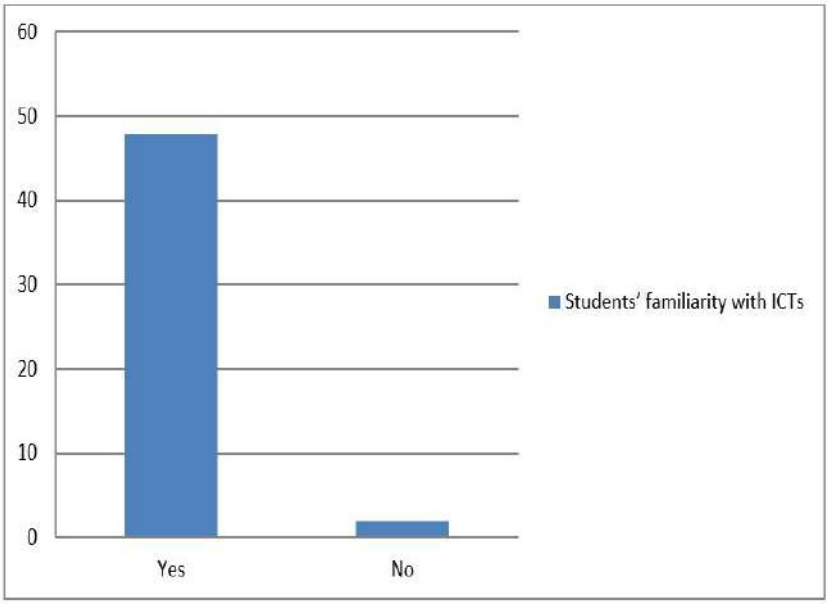

Figure 6.16: Students' familiarity with ICTs' in their learning process.

Table 17: Students' attitudes towards the integration of ICT's.

Item	**Percentage**	**Number**
Yes	96%	48
No	4%	2

that the majority of the participants (96%) do support the integration of the new technology (computer) into the curriculum.

Q20: What tools among these do you consider most helpful in your leaning process:

Q20 was asked in order to know students' favorite e-learning tool. As table 18

Table 18: Students' preferred e-learning tool.

Item	**Percentage**	**Number**
Facebook	64%	32
Moodle	12%	6
Youtube	22%	11
ZOOM/ Google Meet	00%	0
Other	2%	1

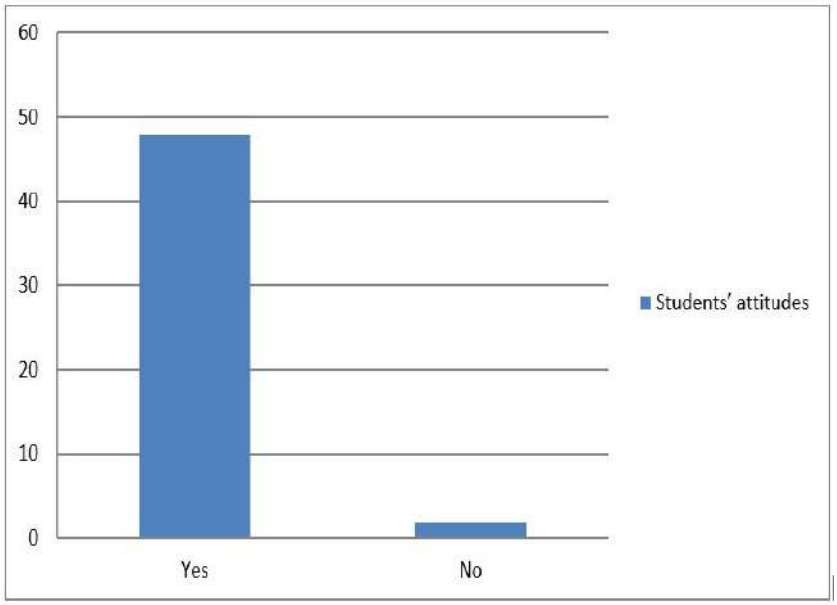

Figure 6.17: Students' attitudes towards the integration of ICT's.

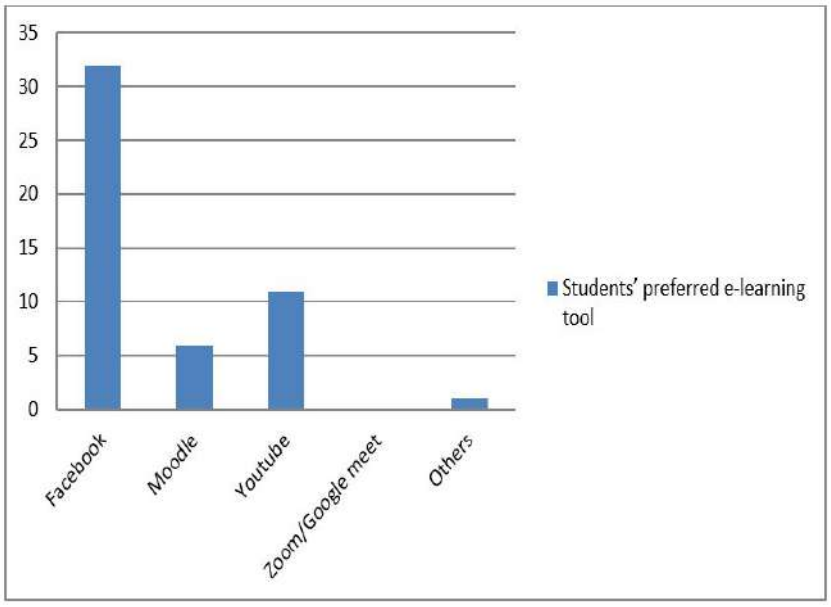

Figure 6.18: Students' preferred e-learning tool.

indicates, Facebook (64%) and Youtube (22%) are the ones that gained popularity as an educational tool. This can be justified with the easiness of access that Faceook offers. Unlike platforms, all members can easily join and can display their thoughts through comments or features of like/dislike.

6.2.2 Discussion of the Questionnaire results

The questionnaire contained 20 questions that aimed at diagnosing student's online learning experience, learning preferences, writing difficulties as well as their thoughts on using technological devices in learning.

In the first section, we aimed at knowing how students reacted to distant education using online tools during the unprecedented halt during the precedent academic year. The results demonstrated that students were generally not satisfied with the experience and preferred the face to face interaction. Such results can be attributed to students' lack of training in this field. Therefore, only a minority seems to agree that this form of education has met their expectations. Such findings pave the way for a set of recommendations, which aim to improve the e-learning experience at Algerian higher education institutions that include providing adequate technological support to assist students in overcoming potential internet and accessibility challenges, as well as thorough teacher training to refine their skills and knowledge and strengthen their connectivity and contact with students. Overall, the deficiencies in some Algerian higher educational institutions' online learning forms can play a crucial role in the future development of an effective distant learning system.

Additionally, such findings may suggest that the sudden and unprecedented shift to online education , lack of suitable training, a shortage of bandwidth, and a lack of resources have resulted in a negative learning experience.

The second section discussed mainly learner's relation to the skill of writing. In Q8, students were asked about the most problematic aspects while composing and the answers were "finding the appropriate ideas" (52%), "vocabulary choice" (12%), and "organization of ideas" (20%). "Finding the appropriate ideas" as it was discussed in the interpretation of Q9 is chiefly connected to the planning stage of the process of writing. Planning, also known as pre-writing is frequently the most challenging phase. for students because they need to be able to handle several key elements such as the purpose of the essay, its audience, a definition of the scope of the topic that will be developed, a thesis statement that will serve as the

"backbone" of the essay, and a clear outline that will function as the "road map" for the student writer. Diction is also another challenging factor, as it is most likely the result of a lack of reading (Q8, or translation from the L1 to the FL (dubbed "Arabish" by Adas and Bakir in 2013), or both.

Another aspect of the questionnaire's second section focused on how the writing process is used, as most Written Expression courses have used the process-oriented approach for several years now. Participants were requested to indicate the toughest stage of the process of writing which appeared to be the planning stage (62%). This result comes to be in agreement with Q8 in which the participants declared that "finding the appropriate ideas" as being the hardest phase in starting to write. The students were also asked to indicate how often they practice composition, which usually entails practicing the steps of the writing process through a variety of exercises. The final question in the second section of the questionnaire concerned the instructional materials used by Written Expression teachers to teach their students composition, which turned out to be 'printed handouts.' The written expression teachers make extensive use of printed handouts, and the results of Q12 are not surprising.

In the forthcoming section, we noticed that there is a quite good range of students' learning preferences and learning styles varieties that differ to a certain extent. The difference declared through Q14 and 16 is found reasonable considering that no group of learners can be completely homogeneous. Hence, the purpose is not to establish which learning preference or style is most prevalent, but rather to show that the standard technique of teaching writing may not be adequate to accommodate this diversity. Simultaneously, this is quite useful since it gives good insights into how blended learning may be used in the context of teaching composition. One of the benefits of blended learning is that it may accommodate a variety of learning preferences and styles by utilizing a variety of resources such as wikis, synchronous and asynchronous tools, and mixed learning models such as the flipped classroom. Motivation was also included in this questionnaire, in addition to learning preferences and learning styles, because it gave some insights

about interest and attitude towards the module. The students were asked to reveal their thoughts regarding the themes presented by their teachers in the Written Expression classroom . The students, on the whole, seem to like the topics that their Written Expression teachers provide for practice; nevertheless, those who did not agree cited comments such as "boring," "redundant," and "lack of background information." The psychological state of the students in the WE classroom was the subject of the second inquiry on motivation. The results were satisfactory because the majority of students said they were 'engaged' and 'motivated.' Students were not asked to justify their answers since the goal of this questionnaire was to analyze the learning environment in the Written Expression classroom from a broad perspective.

In its final section, the questionnaire inquired about students' use of technology in relation to writing. Respondents indicated their willingness to utilize Internet and mobile technologies for writing instruction. Intriguingly, the students view technology as an indispensable instrument for learning the target language. This fact should be exploited, as the current generation of college students appears to be intimately acquainted with Internet and mobile technologies. Concerning the most used online educational tool, most of participants declared that they favor Facebook for sharing materials and exchanging information. Such findings seem to be in accordance with Ghouname's (2020) who performed a study on which tools educators have used to promote virtual learning during the pandemic at Saida university. Ghouname (2020) found out that Facebook was the most commonly used tool for educational purposes due to student's motivation while Moodle platform was ranked as the second tool. The researcher considered that the introduction of Edmodo would mimic the social media type experiences students usually have outside of the classroom but within an educational context.

6.3 Data Collection

The design of this study is pre experimental. Initially, the study was meant to include a control group that is going to be exposed to traditional learning and an

experimental group that is going to receive a blended course. Yet, as a precaution against the spreading virus Covid-19, blended learning was imposed by the ministry of education by the start of the academic year 2020-2021. Hence, the study used one group design that was further divided into two experimental groups that were both exposed to the blend. Pre-test and post-test scores are going to be examined thoroughly. At the end of the intervention, the results are collated in order to develop patterns, themes, and conclusions. It receives virtual materials, such as network-based materials, as well as e-learning lessons. Both groups of students used the Edmodo platform to communicate. This platform is believed to offer a handy communication channel for both the course instructor and the students, as well as among the students themselves. The use of discussion boards is a significant component in the platform. The instructor creates threads to reinforce a variety of sub-writing skills. It could be used to respond to students' introduction development or writing, or it could be used to ask students to edit their work to produce an error-free piece of writing, commenting on components of each body paragraph based on a checklist, until they finish their work by writing the final draft and sending it to the instructor's private box for feedback and correction. To receive immediate feedback, all submitted assignments are read and revised. A writing rubric is created by the researcher, which contains certain skills in writing extended essays. The main instruments used for data collection are the pretest and the post-test that are administered to all students in both groups. The information was gathered initially through materials uploaded on Edmodo, autonomy checklist, and finally by the distribution of two questionnaires to the students (one before the experiment and another after). The research incorporated the ADDIE model 6.19, framework used by instructional designers and training developers to develop courses, in order to proceed the integration of Edmodo as a part of blended learning.

6.3.1 Stage One: The Analysis Phase

The design's analysis phase focuses on examining student learner characteristics and determining the course's learning objectives. To begin designing the supplementary

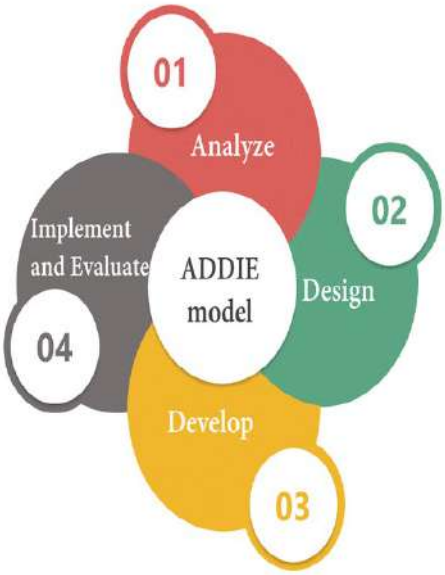

Figure 6.19: ADDIE Model.

unit, the researcher has to determine the required components. This is determined by the results of the pre-test given at the start of the semester. To establish a top notch inter-rater reliability, the researcher consulted two English instructors to assess the pre-post writing test. The pre-test was designed to gauge the degree to which the students master perquisites of writing, and this in turn is going to aid in determining the students' areas of strength and weakness leading to identify any lacunas from previous instruction. To accomplish the latter, various tasks were implemented to evaluate the students' different writing related skills such as grammatical skills; rhetorical skills that partly connect to coherence and cohesion, and organizational skills that include organization of ideas into paragraphs and concepts such as unity. The pre-test, as it can be noticed in Appendix 1, is made of three tasks, each tests a specific aspect. For example, activity One seeks to assess the students' knowledge basics learned during the previous years such as clause, sentence, and punctuation. Second activity is about is about checking unity and coherence through organizing jumbled sentences; and the third task is a free writing activity in which students were required to write an essay. Importantly, the pre-test took part in one of the regular offline sessions. The researcher-teacher then identified the study participants as well as the instructional goals (meeting

students' need to write efficiently at the end of the cycle); the researcher also conducted instructional analysis (students' critical thinking in writing), analyzed learners' characteristics and context (with a focus on writing traits), and refined the instructional objectives of the target course units to fit the students' needs. The online unit instructional goal should be stated based on the learners' characteristics along with assisting them in developing their basic writing abilities.

6.3.2 Stage Two: The Design Phase

The overall goal of the online instruction is to look into the effect of blended learning on the development of writing skills of pre service teachers. The researcher considered the course's educational objectives, educational content, learner evaluation exams, sample grouping, and required educational methodologies, selected educational resources, and lastly determined the course's implementation plan or delivery method. During this phase, the lesson plan, media selection, activities, and assessment instruments are all established. The next step or as Purnawarma (2016) puts it, "the kickoff event" (BKOF), the students are informed about the experiment. After motivating the learners to participate in the learning process, the teacher introduced texts for discussion. As Purnawarma (2016) suggests, this is an initial exposure to help learners build their knowledge. Bersin, 2004 confirms that this is an initial step in starting the course.

The online course, called "Academic Writing for Third Year Students of English", was designed on the basis of the current curriculum of the module "Writing" that is currently taught at the Department of Letters and English, Teachers' Higher College, Laghouat that its course objectives are organized as follows:

- Students will be able to use various prewriting techniques.
- Students will be able to write coherent paragraphs and essays.
- Students will be able to identify and write paragraphs and essays of different patterns of development such as: narration, description/example, process, division/ classification and definition.

- Write neatly, coherently and enthusiastically.
- Students will demonstrate a strong thesis statement based on the type of written essay.

The blended course involved a variety of tasks that tackled aspects and objectives depending on the writing context that students are exposed to. Edmodo offers a wide range of parameters that help learners access the interactive dimension, such as multiplying attempts of answers and getting instant feedback via synchronous and asynchronous communication tools. Tasks such as writing assignments give the students the opportunity to submit their works online and to receive the corrected version with commentaries and suggestions that are expected to help students identify their weaknesses.

Importantly, the activities used in this course had different aims in the sense that each focused on testing a specific writing skill. Some were designed to assess the students' comprehension of recently learned concepts, while others assessed their ability to apply those concepts in writing.

6.3.3 Stage Three: The Development Phase

The teacher researcher organized the final flow in blended learning by following these steps1) The teacher provided students with an expository writing plan format; 2) The teacher uploaded the writing plan to Edmodo (Notes menu); and 3) The students wrote offline while the teacher provided them with instructions. 4) Students posted their works in small groups on the Edmodo Note menu; 5) Students received comments and feedback; and 6) Students posted the final draft of their writing on Edmodo. As suggested by Bersin, 2004, this phase was a continuation of the first learning activity - check-in events (modeling), during which materials were still addressed. Before starting, the students should form small groups in which they would collaborate. Bean, 2014 believes that groups or small groups are helpful because they offer a great opportunity to teach students' critical thinking skills, such as brainstorming ideas and uncovering arguments

for their writing. They are also thought to make learning more personalized (www.support.edmodo.com, 2014).

After checking in the small groups, students were given final evaluations in which they were expected to produce their own text on the same topic that had been covered earlier in the day after being given a writing plan. This, according to Bersin (2004), is a sort of final assessment to check if the course in the two previous phases matched the students' abilities or not. Following the completion of the final examinations, the students began writing under the guidance of the teacher in both offline and online classrooms. In both classes, the teacher was able to keep track of the students' progress by providing feedback. According to Bersin (2004), feedback can be delivered immediately after students share their work.

The researcher worked on the actual production of the online and face-to-face components of the course after thorough study and design. Students are supplemented with additional online exercises by the researcher. In addition, the researcher has created three online language quizzes that address the main deficiencies identified in the diagnostic writing test.

6.3.4 Stage Four: Implementation

The students were assigned to check weekly writing websites by the teacher. Each writing exercise emphasizes a single ability. When planning online activities, the instructor made sure that both mediums of activities complement each other rather than overlap. Over the duration of the course, the participants are instructed to view the posted material on the Edmodo platform at the beginning of each week. The researcher explains and reminds them that the online material is not only a supplement to the in-class writing practice, but also an important part of the course. At least twice a day, the researcher logs into Edmodo to answer questions, respond to language or technical writing questions, and review students' logs and digital activity. She often expresses gratitude to active students and encourages less active students to participate in the discussion thread. As a result,

the course's instructional content is provided on Edmodo to supplement face-to-face classroom training for both groups. Weekly updates include PowerPoint slides, links, discussion forum questions and tasks, and multiple-choice self-assessment quizzes on writing skills. Additionally, on the discussion boards, a writing exercise on specific topics is posted for students to communicate with their instructor and other students. The following is a list of the writing skills that the online exercises will assess:

1. Skills of sentence writing: Fragments and run-on sentences, comma splice, pronoun referent, conjunctions, irrelevant sentences.

2. Paragraph writing skills: Writing topic sentences, thesis statements, supporting details, concluding sentences, types of paragraphs (introductory, concluding, descriptive, narrative, argumentative, compare contrast, persuasive …etc.), cohesion and coherence, and using transitional words and phrases.

3. Essay writing : Writing a thesis statement, an introduction, a concluding paragraph, writing explanatory, argumentative, compare-contrast, Cause effect essays.

4. Writing Mechanics: grammatical structures such as subject-Verb agreement, transitions, conjunctions, tenses, capitalization; punctuation.

Over a period of six weeks, the implementation phase took place as both PES and PEM groups received F2F instruction as well as online training via Edmodo. The course begins with an introductory week, after which the students' writing abilities are assessed. Weeks 2 and 3 are dedicated to writing Definition essays, with a special emphasis on drafting an introduction. Weeks 4 and 5 are dedicated to introducing explanatory essays, while weeks 6 is dedicated to compare and contrast essays , while week 7th week of the experiment corresponds with their Final Exam and a post-test is given to both groups. Students take a writing test (posttest) as part of the course syllabus at the end of the semester after being exposed to various types of writing. Students must also complete three online multiple-choice

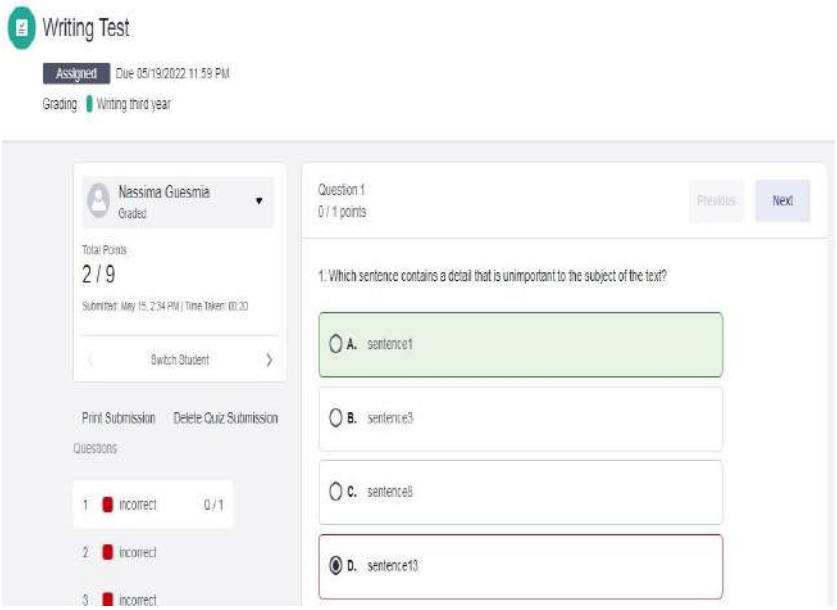

Figure 6.20: an Online Quiz on Edmodo.

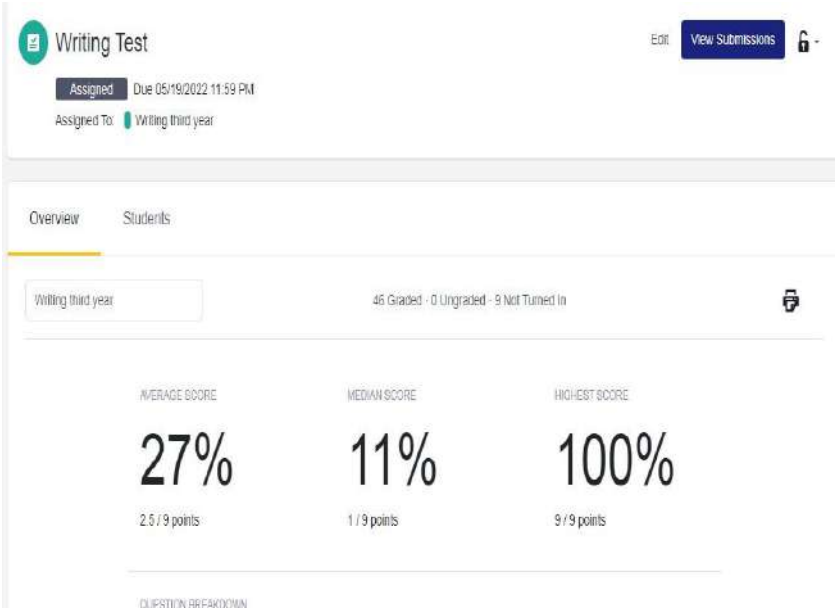

Figure 6.21: Edmodo's Evaluation of the Students' Performance in an Online Quiz.

language tests throughout the semester. Each of the questions is worth one point. For any error, students receive a quick explanation and correction. When students complete each quiz, they are given their total score. In addition, students of both groups are asked to complete four graded tasks through the discussion forum in which participation is compulsory.

While the researcher examines the procedure, students are expected to make

their thoughts on a frequent basis in an asynchronous online forum and to discuss and produce ideas with other students. Before presenting their final answers on the discussion forum, they must first discuss the subjects posted on the platform among their individual groups. These postings are then assessed in order to offer students with regular feedback. In the introduction of the assignment requirements, the supply of feedback, and the grading of the assignments, the instructor endeavored to encourage autonomy as much as possible.

The lessons posted in the platform are usually put before the face to face sessions. The lessons are meant to help the students go through the material of the lessons at their own pace. In other words, students can navigate through the lessons' content by scrolling back and forth, checking examples, going back to definitions, double-checking illustrations, and so on. They can also use tools, like web links, to learn more about certain parts of the lessons in the platform's online course. Students were asked to complete online exercises that varied in type and purpose after going over the content of the classes. Some of the activities were used as warm-ups for other classroom activities. By illustration, once dealing with the compare/contrast essay development, the students were asked read a text that compared women's and man's way of thinking as well as their biological brain structures. After reading the text taken from an excerpt of the Writer's Workplace with Readings by Sandra Scarry, the students had to fill in a the brainstorming sheet proposed by the instructor and made accessible on the platform in a downloadable format as follows:

The fill-in worksheet served as a warm-up for the planning step of the writing process. The students learned how make use of diagrams to construct points of comparison for a compare/contrast essay, which is a key step in helping them define the scope of their essay, compose a clear arguable thesis statement, and create a clear outline. The Venn diagram (Figure 6.23) is another sort of diagram that students learnt in this blended learning course that also used to develop points of comparison for a compare/contrast essay.

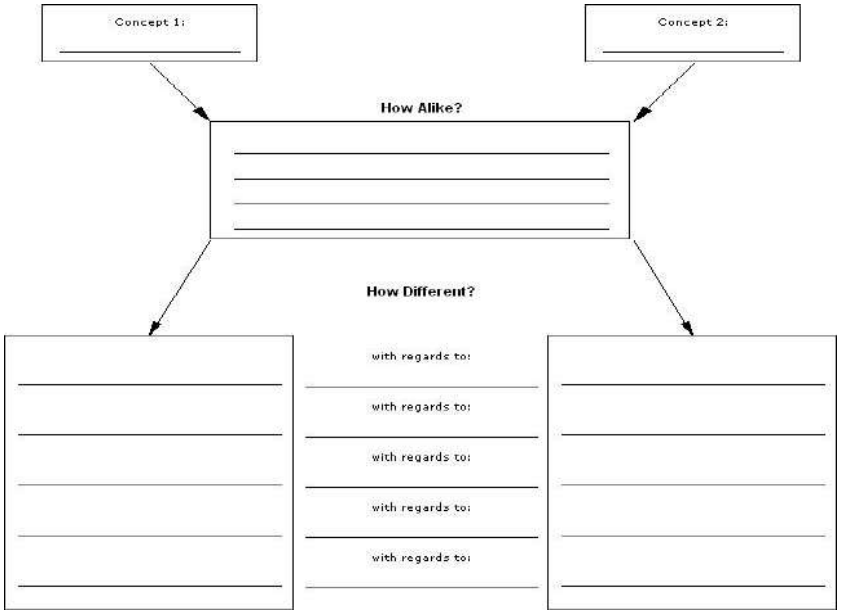

Figure 6.22: Brainstorming sheet.

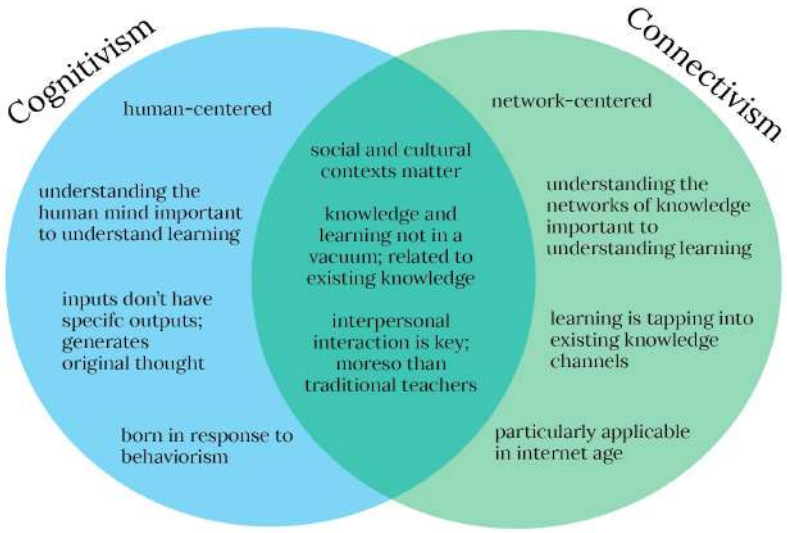

Figure 6.23: Venn's Diagram retrieved from: https://caitlinmeyer.github.io/idt-portfolio/100x/comparing-learning-theories.

For the cause/effect essay, the students were engaged in a random discussion asking them to list causes and effects of the "Stockholm syndrome". Then, the students were reminded of the two ways of listing their ideas that can be either "block" organization or "chain" organization. Certain online tasks were completed in some cases after the face-to-face classroom sessions. In the classroom, for exam-

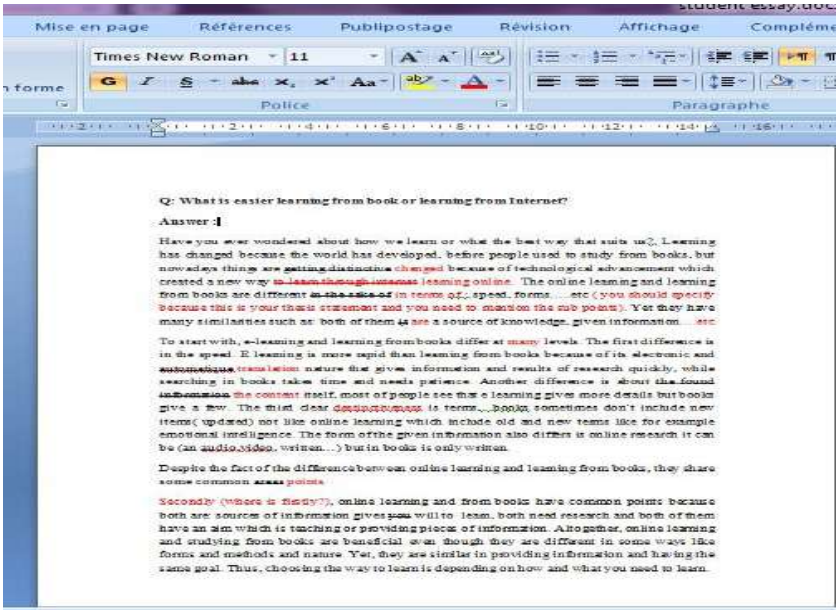

Figure 6.24: A sample of a student's draft.

ple, students were required to write an essay outline on a given topic. Following completion of this task, students were required to submit their outlines (in PDF or.docx format), which were corrected by the teacher and returned to the students so they could be used for another classroom task.

It is also worth noting that the blended course resembled to the flipped classroom approach. Students came to the classroom to accomplish writing projects after exploring the lessons, completing the appropriate activities, and preparing the required material for classroom practice. It is emphasized that the fundamental tenet of the flipped classroom strategy in blended learning is that students complete the theoretical portion of the lesson online and clarify concepts through online tasks or chat sessions before coming to the classroom to complete the "homework" with the assistance of the teacher. Depending on the task and the students' preferred learning style, the blended learning classroom is transformed into a "workshop," with students working individually, in pairs, or in small groups.

The students spent the classroom time during the face-to-face sessions on various writing activities. The instructor went over the lesson's main points with the students. before they began the assignments, which served as a form of rehearsal. For example in introducing the cause effect essay, students were exposed

to a text online that tells the bus incident of Rosa Parks. In the classroom, the students were reminded about the content of the text and explained the two strategies for mapping the essay with their distinguished characteristics. The teacher then urged the students to use the materials available online (outlines, notes, and so forth) for a specific writing assignment. The classroom activities varied, but they always revolved around the stages of the writing process and were performed individually. For instance, the students were instructed to compose the initial draft of their essay in class, based on an outline they had developed in class and try to refine it online. In the drafting phase, the instructor went from one student to the next, examining various essay elements such as the thesis statement, topic sentences, and essay structure. The teacher had the opportunity to focus on each student, giving comments as needed, explaining points as needed, and answering questions.

6.3.5 Stage Five: Evaluation

There are two types of assessments: summative and formative. Between phases and during implementing the online course, various forms of formative assessment are generated. They include the platform's pre-test, online quizzes, and discussion forums activities. Before the final version is submitted, this form of evaluation is used to improve education and strengthen students' writing skills (for the targeted competencies). Following the implementation of online teaching (which includes the final exam for the writing course as well as the post test), summative evaluation will take place. This kind of evaluation evaluates the overall procedure. Data obtained from the summative evaluation usually helps in deciding the impact of the blended learning in general, and the online teaching learning experience in particular on students' writing achievement.

Table 19: Tests of Normality.

Tests of Normality						
	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PEM 3RD YEAR G1 (pretest)	0,153	28	0,092	0,952	28	0,219
PEM 3RD YEAR G1 (postest)	0,116	28	0,200*	0,963	28	0,420
PES 3RD YEAR G1 (pretest)	0,179	22	0,063	0,948	22	0,293
PES 3RD YEAR G1 (postest)	0,114	22	0,200*	0,973	22	0,776

6.4 Discussion of the findings

6.4.1 Would a combination of traditional teaching and online learning help in scaffolding students' writing skills?

To answer our first research question, we calculated the mean differences in students' achievement scores in the pre and post tests of the two groups. Our aim was to investigate the effectiveness of blended learning in teaching writing in English as a foreign language in higher education. The SPSS program was used to calculate the means, standard deviations, and percentages of achievement scores for each group. The t-test was also used to investigate the relationship between students' pre-test and post-test scores.

As table 21 displays, we find that the significance value (Sig) for all data at the level of both tests is bigger than (0.05), and therefore the data follow a normal distribution. From this a parametric test is going to be used to further analyze our data:

As seen is table 21, we find that the arithmetic mean values in the dimensional

Table 20: Paired Samples Statistics.

Paired Samples Statistics				
		Mean	N	Std. Deviation
Pair 1	PEM 3RD YEAR G1(postest)	14,1964	28	2,66437
	PEM 3RD YEAR G1(pretest)	11,3750	28	3,30369
Pair 2	PES 3RD YEAR G1(postest)	14,0568	22	2,06145
	PES 3RD YEAR G1(pretest)	11,5477	22	2,43073

Table 21: Paired Samples Test.

Paired Samples Test						
		Paired Differences		t	df	Sig. (2-tailed)
		Mean	Std. Deviation			
Pair 1	PEM 3RD YEAR G1(postest) - PEM 3RD YEAR G1(pretest)	2,82143	1,79745	8,306	27	0,000
Pair 2	PES 3RD YEAR G1(postest) - PES 3RD YEAR G1(pretest)	2,50909	1,44070	8,169	21	0,000

measurement at the level of both cohorts exceed their counterpart in the tribal measurement, which indicates a clear positive impact of the experience. A Paired Samples Test is going to be used to make sure of the existence of statistical significance for these differences:

From table 21, we deduce the following findings:

For the First Group (PEM)

The value of the test (T) equals (8.306) and the degree of significance (Sig) for the test is equal to (0.000), which is less than the significance level (0.05), and therefore there is a statistical significance for the test and from it there are statistically significant differences between the pre- and post-measurement. When comparing the arithmetic averages from the table 5.22 (Paired Samples Statistics), we find that the differences are in favor of the dimensional measurement, which indicates a positive and statistically significant effect of the treatment.

For the Second Group (PES)

The value of the test (T) equals (8.169) and the degree of significance (Sig) for the test is equal to (0.000), which is less than the significance level (0.05), and therefore there is a statistical significance of the test, and from it there are statistically significant differences between the pre- and post-measurement. When comparing the arithmetic averages from the table (Paired Samples Statistics), we find that the differences are in favor of the dimensional measurement, which indicates also a positive and statistically significant effect of the treatment. The means of the participants' post-test scores are higher than their pre-test scores. This demonstrates that increased exposure to online material leads to more effective use of language writing abilities

These findings indicate that blended learning was helpful at developing several aspects of students' writing skills. This can be attributed to the increasement of students' motivation in learning whenever they are presented with the same content in a variety of technological and simulation-based formats (Cameron, 2003). In addition, the noted difference in writing scores may be attributable to the instructor's use of additional writing activities, as all the online tasks are supplementary writing assignments related to the same topics covered in class. Furthermore, using a flexible asynchronous approach may have contributed to students' improved writing abilities. The research also shows that when course content is uploaded online,

online communication increases. This could be another reason why students' post-test results were significantly better than their pre-test results.

The online teaching learning experience had several benefits, including using multiple senses and addressing students' different learning styles via the exposure to different activities, strategies, and multi-media, which involved the use of pictures, texts, videos, a discussion forum, and PowerPoint slides. This improved students' learning skills, improved their writing, and created a continuous interactive atmosphere that increased their enthusiasm and interest in learning.

Most of the student's essays had a better organization in terms of the general statement and thesis statement in the introductory paragraph. Moreover, each body paragraph included a topic sentence, which was clearly and accurately specified. Their essays were reasonably well-structured. They were able to construct logical paragraphs in most cases. They included supporting information as well as appropriate transitional signals. Their compositions, however, featured some grammatical and spelling errors. Their writings were comprehensible and engaging despite the inaccuracies because they demonstrated good content and structure.

These data are compatible with those obtained in previous Edmodo-based writing development research (Purnawarman et al., 2016; Miftah and Raya, 2018; Sheet, 2019; Shams-Abadi et al., 2015b; Fauzi, 2017). The collaborative nature of Edmodo can be attributed to its positive impact on students' writing performance (Hankins, 2015). Edmodo provided EFL students with numerous opportunities to establish a stable platform for their collaboration while also increasing their motivation. It was also collaborative writing initiatives that helped students develop writing abilities and linguistic knowledge more successfully than working alone in F2F classes (Mulligan and Garofalo, 2011). Furthermore, the implementation of a blended learning approach increased student interaction and urged them to become more motivated and self-directed learners. As a result, autonomy and motivation had led to enhanced written production. These findings reinforce the results found in previous research such as Cahyono and Mutiaraningrum, 2016, Hussin et al., 2015, Al-Kathiri, 2015. According to the results of these studies,

incorporating elements of online learning into a writing class can help students feel more comfortable working in groups and sharing their ideas with one another in a less intimidating learning environment.

Students had online conversations and peer feedback as outside-of-class activities. Students, particularly shy students and low achievers, interacted and collaborated more with their peers and the teacher as a result of the online discussions. Many students in the classroom also participated more in rehearsing the materials provided online. It boosted their involvement in the classroom teaching and learning process.

Furthermore, the online peer feedback was conducted using Edmodo, with participants providing feedback on content, organization, vocabulary, language use, and mechanics to each other. They may obtain writing assistance in the form of comments and recommendations from their peers and teacher as they were encouraged to share their essays on the discussion board. If students had any issues about the feedback offered online, they could also have an online consultation with the teacher. Finally, more engagement and collaboration between the teacher and students, as well as between students and students, were established.

6.4.2 Is there a noticeable difference in writing skills between the high and low autonomous EFL students utilizing Edmodo in a blended learning context?

Students' autonomy levels were also investigated to determine if there was a correlation between the students' levels of autonomy and their levels of writing proficiency. From the scores attained from the post-test, noticed that a small minority of the students failed to make a remarkable progress.

The research assumed that this latter is due lack of autonomy on the behalf of these students. To confirm our hypothesis, a checklist was adapted from Sujannah et al., 2020 model and given to the learners (Appendix Two). The purpose of the learner autonomy checklist was used to decide on the autonomy levels of third year students in the pem and pes groups as well as to rate them into high and low

Table 22: Descriptive statistics across autonomy levels of Pem and Pes Groups.

Group Statistics					
	Groupe	N	Mean	Std. Deviation	Std. Error Mean
Autonomy Level	PEM	28	23,4138	1,97334	0,36644
	PES	22	31,5714	2,27093	0,49556

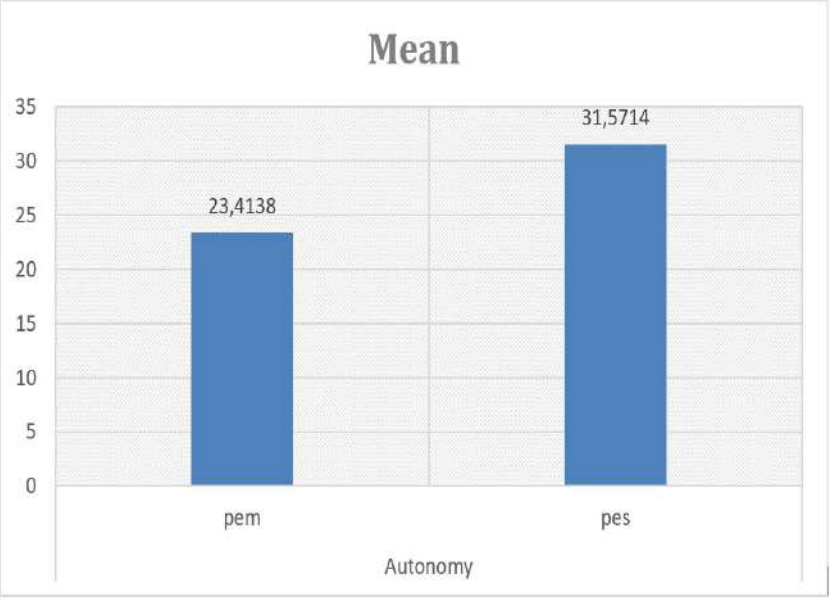

Figure 6.25: Descriptive statistics across autonomy levels of Pem and Pes Groups.

autonomous learners. Results revealed that the ones who were self- directed, self regulated were the ones who obtained the highest scores.

Through Table 22 and Figure 6.25 and by comparing the arithmetic averages of the two cohorts in the results of the checklist, we find a clear superiority of the PES cohort over the PEM cohort in the checklist results. Statistical significance of these differences will be further checked by using Students' test for two independent samples.

Through Table 23, we find the value of the test (T) equal to (-13.541) and the significant degree of the test (Sig) equal to (0.000), which is less than the significance level (0.05), and therefore there is a statistical significance of the test, and from it there are statistically significant differences between the two cohorts

Table 23: Independent Samples Test.

Independent Samples Test					
	t-test for Equality of Means				
	t	df	Sig. (2-tailed)	Mean Difference Std.	Error Difference
Autonomy Level	-13,541	48	0,000	-8,15764	0,60243

PES and PEM in the results of the autonomy checklist. When we compare the arithmetic averages of the two cohorts in the checklist results (Table 23), we find that the PES cohort has gained more scores. From this, we assume that there are statistically significant differences between the PES and PEM cohorts in the checklist results in favor of the PES cohort.

The investigation revealed that using Edmodo to execute blended learning increased the writing abilities of high autonomous EFL students more than low autonomous EFL students. This was in line with previous research findings on learner autonomy, blended learning, and writing ability. The findings of this study were consistent with those of Lynch and Dembo, 2004, Yao, 2017, and Yen and Liu, 2009, who found that learner autonomy was an important component in determining blended learning success due to students' improved learning attainment. It also supported the findings of studies by Mohammadi et al., 2020, Masita, 2016, and Masoumzadeh and Ardebil, 2016, which found a favorable correlation between learner autonomy and the writing skill.

According to Holec, 1979, high autonomous students are more likely to set their own learning objectives, choose learning materials, execute strategies, track their progress, and assess the materials they have studied with. To track their self-learning, all of the students in this study were required to fill out an online quiz after studying the materials provided on Edmodo. However, not all students completed the quiz in a timely manner. Overdue submissions could indicate poor time management skills and low autonomy, since high autonomous students could

usually plan their time effectively and were alert of the deadline. According to Lynch and Dembo, 2004, students who handled their time well performed better than students who did not manage their time well. Furthermore, students with a high level of autonomy tended to seek out materials other than those provided the platform. Active learners, according to Geta and Olango, 2016, look for information on their own rather than relying on the teacher to provide it. To have a better understanding of the issue, active learners connect the knowledge collected from the offered materials with the information obtained from their browsed materials. They may actively participate in online sessions and classroom discussions to share their knowledge with others because they learn from a variety of sources. In addition, because the students shared their writings online, they could read the contributions of their peers at any time and anywhere. They were able to compare and contrast their essays with those of their peers. They were able to determine their strengths and weaknesses in comparison to their classmates by doing so. High autonomous students, according to Cakici, 2017, are able to recognize their own strong points and weak ones. They can then reflect on what needs to be applied to enhance their writing.

Furthermore, because of their considerable autonomy, students were able to set their own writing goals, choose the best strategy, and keep track of their progress (Masita, 2016). Whether it was brainstorming, clustering, or outlining; they could identify appropriate strategies to improve their abilities. As a result, they recognized which strategy facilitated their essay writing the most.

Nevertheless, while students with higher levels of autonomy in their learning did better on writing assignments in a blended learning environment, this does not mean that teachers cannot engage students with lower levels of autonomy through the same method. Numerous studies have shown that utilizing blended learning environments helps students develop into self-directed, self-regulated students. s (e.g. Balasubramanian et al., 2014; Farivar and Rahimi, 2015; Luke, 2006; Snodin, 2013). To address the low autonomy learners, teachers may adapt the blended learning implementation. In this regard, they could start with a lesser percentage

of online activities compared to those done in the classroom to get them used to it and gradually increase it as time goes on.

6.4.3 Can time restraints, issues with the writing process, and feedback be resolved by a blended learning writing course?

This question aims to unravel how Edmodo facilitates achieving learning objectives in relation to the writing process and feedback. To answer this question, a likert scale questionnaire was designed and handed to the target population at the end of the course:

As Table 24 indicates that statements (7, 8, 15) had the majority of students' agreement with high rate percentages. Then, Statement (6) is ranked second in the agreement measure, with a whole percentage of 75 percent. Furthermore, 51%, 80% of students agree with the benefits of Edmodo highlighted in statements (4, 7). Statement (10) has the fourth rank with 60% of students' agreement whereas statements (11, 14) have the fifth rank. Moreover, statement (12) has lowest rank with a total of 10% of students' agreement.

The results in terms of students' perception of Edmodo utilization are even more intriguing. The findings show that the many benefits that Edmodo may bring to suit students' needs in their learning environment are all in accordance. These findings corroborate with the growing consensus that learners should take use of the benefits that new technologies provide in order to increase their learning possibilities. Edmodo demonstrates a relatively high level of acceptance as a social interaction tool (Kongchan, 2008). Edmodo can also assist a shy student in overcoming isolation by offering information that allows face-to-face interactions with other students or the teacher (statement 4). Edmodo, as a Course Management System, allows students to post, store, and share learning resources such as courses, tests, documents, and manuals to supplement their in-class learning (Statement 9It also serves as a document repository, allowing students to access important classroom materials at any time, making EFL instruction continuous and unrestricted by the classroom's seating capacity. Feedback was also tackled in the

likert scale questionnaire (statements 1 and 7 feedback is essential to the learning process because it not only assists students in correcting fallacious understanding of newly learned concepts/ideas, but also helps them identify their strengths and weaknesses. Feedback is critical in an online situation, just as it is in a traditional classroom. Online feedback can be given in a variety of ways, including during online chats, tasks, and forums. Particular attention on identifying learners' strengths and weaknesses was targeted in statement 1, and the majority of the students' responses (65%), as displayed in Table 5.23, acknowledge that the teacher provided feedback throughout online exchanges that assisted the students in identifying their strengths and limitations. In the platform, any shared document by the students is going to start receiving comments, remarks, opinions, and extra information on that topic either by the instructor or by other students in the platform. In the process of doing so, more discussions and avenues for developing independence and self-directed learning can be generated. Furthermore, Edmodo provides unique options for student engagement, allowing them to strengthen their teamwork and cooperative learning skills.

Through the use of various planning strategies, including diagrams, outlining, revision and editing checklists, the instructor was able to give the students first-hand experience writing essays. This allowed the students to reflect more on their own writing by shifting the focus from the writers' perspective to the reader's perspective. The majority of respondents reported an improvement in their understanding of the stages of the writing process, as well as a notable improvement in the organization of their ideas and the different parts of the essay, which is another benefit of using the flipped classroom for this study (statement 11, 12, 13, 14). This could be related to the participants' improved planning skills, as planning was identified as the most difficult element of the writing process in the students' attitude questionnaire (Q8). The participants were able to overcome their struggles with writing the thesis statement and outline by focusing on planning, which helped them with the drafting and revision processes. Furthermore, the participants declared that they had a better understanding of the writing process,

which they now see as recursive rather than linear (statement 14). Moreover, students were trained to consider the importance of being able to self-review and of actively self-reviewing their work before paper submission.

Overall, the participants expressed general satisfaction with the blended writing course for a variety of reasons, the most important of which were that it was an effective tool for developing writing, improving communication, and expanding learning opportunities. The results of the pre-experiment indicated that, thanks to the complementarity of online and classroom work, blended learning is a successful method for scaffolding students' writing skills at all levels. Another noted advantage of blended learning is the one in relation to communication (Statement 2). Indeed, the use of synchronous and asynchronous tools transforms the classroom into a virtual environment, which our students who are digital natives are more familiar with; thus, the 'connection' with the instructor and peers is maintained but in a more friendly and stress free environment.

Furthermore, learning opportunities double in a blended environment thanks to the hybrid of face-to-face and online learning in the sense that the students have augmented chances of communication with the teacher to consult help, experiencing learning through different ways and adjusting it to their learning styles.

6.5 Conclusion

This chapter describes a writing course that was performed with third year ENS students of Laghouat in order to answer certain research questions. The chapter starts with a questionnaire administered to the participants via the platform whose aim was to reveal any uncertainties that students have towards the integration of technology as an educational aid. Then, the study was described thoroughly following the ADDIE model. In essence, findings reveal that students regard some benefits in utilizing Edmodo since it allows them to interact with their teacher and peers about any challenges they may be having in their writing class. This finding go in accordance Balasubramanian et al., 2014 claim that Edmodo provides a straightforward channel for teachers and students to connect. Furthermore, the

findings appear to suggest that Edmodo enhances learning efficiency since students can conveniently access their classroom learning materials and related-essential information no matter where they are. It also makes it simple for students to get feedback from their teachers and classmates.

The result obtained thanks to the t-test showed that there was a remarkable progress. Also, students' responses to likert scale questionnaire items show that some students are improving their ability to evaluate their abilities, identify weaknesses that need to be addressed, research and select appropriate methods and materials for self-study, and find or create appropriate evaluations of their progress. All students would be better prepared to deal with writing assignments in a blended setting.

Table 24: Students statements on the use of Edmodo.

Statement	**Never**	**Sometimes**	**Rarely**	**Often**	**Always**
1) During the course, you benefited from the teacher's feedback (online) that helped you identify your strengths and weaknesses.	0%	10%	0%	25%	65%
2) You were able to interact more effectively with your classmates and teacher outside of the classroom thanks to online communication.	0%	0%	0%	25%	75%
3) Your writing has gotten better because of blended learning.	2%	63%	10%	25%	0%
4) Students who are too shy to participate in class usually feel more at ease communicating online.	0%	24%	0%	25%	51%
5) When absent, Edmodo makes it simple for me to access the readings and assignments.	0%	10%	0%	40%	50%
6)It helps me share my writing with the teacher and classmates.	0%	10%	0%	15%	75%
7) It enables me to receive prompt feedback from the instructor.	0%	00%	5%	10%	85%
8) It helps me to develop my autonomous learning skills.	0%	10%	10%	0%	80%
9) It completes classroom teaching and learning.	2%	0%	0%	23%	75%
10) You are able to self-review your writing better than at the beginning of this semester.	0%	6%	0%	34%	60%
11) I learnt how to brainstorm and consider many topics before writing my draft.	0%	25%	15%	30%	30%
12) I write an outline of what I'm going to write.	5%	40%	20%	25%	10%
13) I read my final draft before I submit it.	0%	0%	0%	25%	75%
14) I have a better understanding of the various stages of the writing process (planning, drafting, revising, and editing).	0%	7%	6%	50%	37%
15) By doing and submitting assignments electronically, Edmodo saves time and effort.	0%	0%	0%	0%	100%

Chapter 7

Data Collection and Analysis (Phase Two)

Contents

7.1 Introduction

There is a growing consensus that corrective feedback lies at the heart of teaching and scaffolding practices. Indeed, the incorporation of efficient feedback plays a major role in shaping learner's abilities. Feedback offered by teachers, peers and computers are thought to be the main sources of evaluating second language as described in chapter three.

Considered as an effective variable impacting to a great extent the learning process, peer feedback is known to enable students improve writing abilities, shape critical thoughts, reflect upon and construct knowledge, as well as accelerating deeper learning. This student-led learning approach is also hailed for giving learners roles and responsibilities of assessors; cultivating their critical thinking and

boosting their ability of self-regulated learning. However, despite the potential advantages of peer feedback, a growing empirical evidence has unveiled a number of issues related to the hesitations of incorporating peer feedback into the instructions and learning process.

A more instant way of providing feedback, however, is another type of e-feedback known as automated corrective feedback (ACF) that come to exist as another feedback instrument. Automated feedback technologies are thought to enable students correct their own linguistic inaccuracies in an instant manner using web-based editing systems. Starting from the conviction that a combination of online peer feedback and automated feedback will have a greater impact on students' writing achievement, this chapter considers the balanced use of these two types of feedback hoping to reach some findings that will decrease the teacher's burden of correcting students' writing and make learners more autonomous in their learning procedure.

7.2 Background of Phase II

The current study is a completion of the previous study described and elaborated in the previous chapter. It was explained that the writing courses dedicated to pre-service teachers at the ENS of Laghouat, where the current study was conducted, are meant to assist trainee EFL developing their capacity to write a variety of text mainly essays. Data elicited from the study performed in Chapter Five described how writing tasks are blended through the platform Edmodo and feedback was regularly provided by the teacher on their written productions. This chapter , however, focuses on peer and self edition. As such, the present work intends to scaffold students writing via:

- Giving evidence of the present student writing performance,
- Increase students' interactive and communicative skills through the platform Edmodo,

- Promoting self-directed learning, and
- Increasing students' autonomy to write.

In the previous chapter, we made an elaboration on the effectiveness of teacher's scaffolding via the platform Edmodo. Yet, despite the improvement noticed on students' papers in terms of essay format and organization, it was found that some students still demonstrate serious grammatical and spelling errors. From this starting point, the researcher intended to integrate a software that generates automated feedback dedicated mainly to grammar and spelling editing along with peer feedback . The aim of this section is therefore to investigate whether the combination of peer feedback and auto corrector, such as the pro-writing aid, is going to help students in diminishing language errors that hinder students' written productions. From this, we formulated the following research question:

Does the combination of the Pro Writing Aid and peer editing help third year students at the ENS of Laghouat in reducing language errors?

7.3 The AWF Experience

Automated computer-based feedback was classified as a possible alternative of providing regular feedback on the participants' written work, and Pro writing aid was the software chosen for this experiment mainly because of its free access and for its tested credibility in providing automated feedback on a various aspects of language including grammar, mechanics, style, and usage. As indicated in the literature, such programmes suggest various types of feedback, ranging from personalized reports on grammatical errors, oriented to EFL learners (Seliem and Ahmed, 2009), to holistic assessments of content, organization, and mechanics (Burston, 2001). The use of such programmes is thought to be of some use to Algerian teachers who must deal with increased class numbers and rising demands for personalized assistance. Moreover, they provide for teachers reprieve from the hours spent commenting on student papers, allowing them to focus on other aspects of instruction, while

simultaneously giving students access to more thorough feedback in a shorter amount of time (Hyland and Hyland, 2006).

Regarding the software's use, the researcher's informal review of Pro writing aid revealed that it was relatively simple to use, which was especially relevant given that the students would be expected to use the software independently rather than in class.

Participants were introduced to the idea of receiving feedback by the Pro writing aid in a regular classroom session. It is worth mentioning that students have been already asked about their interest in being guided with an online tool in the pre experiment questionnaire (Question 12) for language check and the vast majority welcomed the procedure.

Important to mention, this study took place during the second semester of the academic year 2021/2022 starting from the 23rd February. Students continued their blended course through the platform Edmodo. In the same line, they were given four writing tasks to write at home over the course of the second semester. Participants were also asked to produce an initial draft for each topic, followed by a revised draft based on the computerized feedback on their initial manuscript. Then, the improved version is published anonymously by the teacher in order to get peer feedback.

In the first week of the second semester, students were oriented about the course. The teacher explained to the students the software's idea and invited all the participants to take part in this experiment. The teacher emphasized the importance of setting up an account in the website www.pro-writing-aid to install its free trial.

The genres that students had to write went in parallel with the genres tackled in the classroom, namely cause effect essay for Assignment 1, argumentative writing for Assignment 2, and writing a summary for Assignment 3. Students used Microsoft Word to write all of their drafts for the writing assignments and then submitted them to Edmodo.

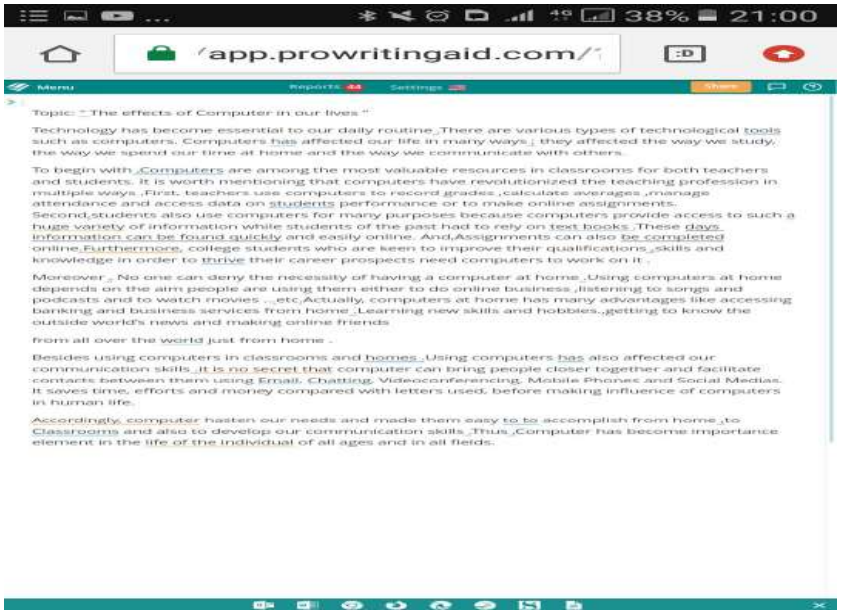

Figure 7.1: An illustration of the pro writing aid.

In addition to the weekly writing assignment, the participants used the pro-writing-aid to check the linguistic accuracy of each of their essays and updated their manuscripts based on the program's suggestions. The students also had to evaluate the changes made by Pro Writing Aid and see if they had to reject any of the suggestions they thought were excessive. Students are encouraged to check the proposed metalinguistic explanations and are made aware of the forms and discrepancies between their output and the proper form by doing so. The review exercise gained students a degree of authority over their own learning by letting them decide which revisions to accept and reject based on readily available resources. Every week, the students submitted their rewritten essays at the platform Edmodo. It should be noted, however, that no accuracy scores were assigned to these essays. Students, on the other hand, were granted additional points for finishing all of the writing assignments on time

To verify grammar and spelling correctness, students simply have to type their texts into the checker's box which detects errors and provides prompt feedback. As displayed in Figure 6.1, spelling errors are marked in red color and grammar errors are underlined in blue color and style issues in yellow. When students hover the computer mouse over the highlighted errors, detailed feedback on the

target errors appears on a separate box. In this experiment, it was hoped that students will use this software to pertain their revision strategies through grammar and spelling check.

7.4 Peer Feedback

Before asking the students to peer edit their writing on Edmodo, the subjects in both groups went through peer editing activities in the classroom. In line with this, some research (Berg, 1999) has demonstrated that training students on how to effectively provide feedback will result in even greater results. According to a study conducted by Stanley, 1992, participants who received 'coaching' exhibited a significant degree of participation in the peer review assignment; they also created effective written communication and clear directions for the modification of drafts (Stanley, ibid). Students were subjected to a rather lengthy coaching method in this study, which included role playing and evaluating peer review sessions, learning about the aspects of good communication, and researching the genre of student writing (Stanley, ibid). Peer evaluation sessions and student essays were assessed to determine the effectiveness of the coaching. It should be noted, however, that this coaching takes time and may not be feasible in situations when time is a limitation.

In the training sessions, students were assigned to work in small groups of two, three, or four to foster interactive collaboration and communicative skills. After having gained sufficient experience with the writing process and demonstrated mastery of the assessment criteria, students were given freewriting assignments on topics their own choice. The subjects were composing their essays while writing, employing various strategies throughout the pre-writing and drafting procedures. The subjects were requested to swap essays and provide feedback on each other's pieces of writing using evaluation rubrics after they finished their initial drafts. The researcher assisted as needed and monitored the evaluation process between the small groups. This procedure was repeated until the students had learned the method as well as the evaluation criteria.

When the training period ended, the researcher-teacher assigned a writing task about "the effects of computers on humans' daily life". Students were asked to edit their first draft using the pro writing aid and send the final version to the teacher via Edmodo. The teacher posted students' essays on the platform anonymously so that students can give comments about their peers' essays. The teacher guided the participants with an evaluation grid that includes aspects such as content, format and organization, style and mechanics). Students by then were invited to use the "comment section" to share their views/ critiques about their peers' writing. Finally, the subjects were asked to write a final draft of their essays, after considering the feedback suggested by the software and their peers. The researcher analyzed the data acquired from both groups in terms of the overall organization and quality of the papers.

After compiling the textual data, all the peer feedback remarks were highlighted (Hyland, 1998) and annotated with reference to a modified version of Ferris's (2006) taxonomy. The AWE feedback was then coded using the same categorization scheme. AWE feedback includes three aspects that differed from peer feedback in addition to remedial comments such as praise, a set of highly stated phrases, and suggestions for future research. Initially, "error type" was assigned to code student errors, but then the term "feedback type" was added so that differences between peer and AWE feedback can be drawn. We eventually classified the feedback into two categories: focus (i.e. the kind of error the feedback was intended to correct) and type (i.e. the type of error the feedback was intended to correct) and the method (how the feedback was delivered). There were 14 common grammatical errors found in the first (see Table 6.1), and four correction methods displayed in the subsequent table: (feedback that draws attention to errors both explicitly with words and indirectly with codes), direct correction (providing the correct answer), marginal and end remarks, and remarking (see Table 6.2). Students' revisions in response to peer and AWE feedback were categorized as revision procedures:

Before submitting the final draft, the students had to revise their papers based on the AWE's suggestions and the feedback of their peers. As the aim of this

Table 1: Feedback Type in Peer Feedback and automated Feedback.

Error Type	**Detection by Peer Feedback**	**Detection by automated Feedback**
Tense Use	✓	✓
Wordiness	———	✓
Direct translation	✓	———
Run-on sentences	✓	✓
Subject-verb Agreement	✓	✓
Spelling	✓	✓
Word Choice	✓	———
Sentence Fragments	———	✓
Singular- Plural Form	———	✓
Capitalization	———	✓
Articles	———	✓
Preposition	✓	✓
Punctuation	———	✓
Conjunctions	✓	✓

Table 2: Feedback Type in Peer Feedback and automated Feedback.

Feedback type	**Peer Feedback**	**Automated Feedback**
Metalinguistic Explanation	———	✓
Highlighting	———	✓
End comment	✓	———
Correction	✓	———

research revolved around students' perception of feedback, these specific revision-centered objectives were examined to quantify how, and to what extent, students employed the computer-generated feedback they received. This form of evaluation accommodated students who made several, superficial revisions as well as students who made a few, but thorough revisions. For example, students who made minimal grammar or punctuation modifications, as well as students who made extensive active voice, sentence variety improvements, would both earn revision points. The different types of revision were all graded similarly, rather than being weighted, with the purpose of connecting with and using feedback.

A mixture of qualitative and quantitative data were gathered and described in the remainder of this chapter. Student replies from a semi-structured interview, an examination of writing drafts, peer evaluations all contributed to the data set. Collecting qualitative data, or namely semi-structured interviews with students, allowed the researcher to examine students' use of the Pro Writing Aid as well as their perceptions of its challenges. Quantitative data, made a comparison between the first draft and the second draft submitted by the students. The two drafts were evaluated holistically by an external teacher in order to avoid biased results. To compare changes in writing accuracy, first and final paper essay versions were compared.

At the end of the study, the research collected data through a semi-structured interview with the students who participated in the experiment. The participants in the interviews were all volunteers: ten (10) from the Pes group and ten (10) from the Pem group. Each interview lasted approximately 15 minutes and the questions revolved around the utility or the challenges students encountered while being exposed to automated feedback as well as peer feedback. As such, the interviewees were asked to talk about how they could integrate automated feedback in their writing practice and how far they benefited from their classmates' remarks.

With classification of the prominent themes of students' interviews, we could identify the most recurrent themes marking students' perceptions in terms of their expectations of the feedback generator, their satisfaction with its use, pros and cons

of using automated feedback and in case they marked any writing improvement after its use. Narrative analysis was used in this study to reveal the writing processes undertaken by learners and their perspectives on peer and AWF as it was considered as an effective method for analysis and to supply in-depth data.

7.5 Results and Analysis of the Qualitative Data

In the results' section, we were interested in analyzing students' reports of different aspects of the feedback process they experienced during the year. Hence, the attention will be attributed to automated feedback generated by the Pro writing aid and peer feedback in turn, reflecting on the responses to the last interview questions, about the advantages and disadvantages of feedback from the two sources. In this interview, all students discussed feedback from both sources and therefore the responses of learners from both groups will be reported thematically.

7.5.1 Students' Perception Regarding AWF

Six out of ten (6/10) students in the Pes group indicated a high level of satisfaction, whereas four students expressed their dissatisfaction. All students that responded positively to the AWE feedback commented on its utility. Eight out of ten students in the Pem group had a high level of satisfaction, while two students were not satisfied. An explanation for this rating might that Pem groups were the ones who demonstrated a weaker use of the language especially when it comes to spelling and grammar. Still, Students in both groups commonly mentioned how AWE criticism inspired them to revise and helped them fix grammar and spelling difficulties in their writing. One Pem student declared "It helps me to improve my writing skills, by giving accurate and correct grammar rules, correct sentence structure. Also, readability recommendations which make my writing more efficient." While another one stressed that "It helps me in knowing what my mistakes are and it gives the correction plus the explanation of it".

In the two groups, students' perceptions of the utility of feedback on organization were varied. Seven (07) out of ten (10) student from the Pes group, declared

that AWF feedback on organization was unhelpful, and additional clarification and direction were required. In contrast, only 3 out of 10 students in Pem group indicated that they needed extra assistance in relation to organization. Possible explanation for students' uncertainty and desire for additional support is that Pro Writing Aid provides only revision reminders by underlining sentences that has style or organization issues. This type of feedback may not be clear and can be frustrating for students who are struggling to use more sophisticated organization in their compositions. To overcome this, knowledge about the organization of writing can be reshaped by getting exposed to discussions with the peers.

7.5.2 Students' Perception Regarding Peer Feedback

Five (05) Pes students who had been involved in peer editing stressed the importance of reading others' writing to develop as a writer. One of the students declared "sharing my writing with my classmates helps me to fill a lot of gaps as I also learn a lot from reading my classmates' papers". Importantly, all the participants agreed on the benefits of sharing their work with their peers as it exposes them to different writing styles and that by reading essays written in a range of different styles, it will help them enhance their own writing style. One (01) Pem student mentioned she had learnt how to write longer and more complex sentences from her peers by reading their writing as they tend to write longer sentences. Another Pem student mentioned that it helped her find ways of starting essays and made her more conscious of how to connect paragraphs to each other. As the student goes "To great extent yes , it can give a feedback about someone's writing and may support or disagree with some parts of it which would help in guiding the writer to improve his own writing".

Another category of students brought up the benefits of reading others' works from a social perspective. One (01) Pes student mentioned that in going through her peers' essays, she got to know them better. In the same line, another Pes student stated that peer feedback was "an enriching experience" and that she really enjoyed reading her peers' ideas.

Another category of students highlighted benefits of peer feedback that went beyond the benefits of reading others' works. One related student mentioned that checking essays for unity and vocabulary in their mates essays was fruitful not only for the writer but for the reader as well. The student declared that she had learnt from her peer readers an appropriate use of academic transitions as well as learning new vocabulary. Additionally, she stated that usually learners are not able to get feedback from their teacher in a frequent way and that due to peer feedback she was able "to find some gaps" in her essay. She also went further by saying that peer feedback would be a helpful skill even after graduating from the Ens because there would not be teacher for correction but there would be always a collaboration between the peers.

A final category of students felt that peer feedback would be useful to get feedback on essay structure and vocabulary but would not help with grammar or content. A Pes student declared peer e-feedback as contrived and ineffective because the students' competence levels were almost the same. It was sometimes taken as a praise because students did not want to offend their classmates. The student also mentioned that peer feedback works best when it comes to vocabulary or spelling correction as it is oriented to writing mechanics rather than content and ideas. The student presented an illustration of this point of view:

> "I couldn't tell my classmate what she was doing wrong without making her upset. In fact, I don't think that I'm at the level of correcting others' papers. That's why I tried to focus more or less on the mechanics of my classmate's writing, such as her spelling and choice of words."

From the interviews with the students, the researcher came to the conclusion that peer evaluation helped the subjects not only improve their written drafts but also improve their critical thinking skills by evaluating their peers' essays and making their own better (after getting peer feedback). The exercise of reading, evaluating, and revising is likely to help them to trace their path towards writing autonomy. Furthermore, their activation of social interaction as writers and readers has reduced their anxiety and assisted them in building a significantly higher degree of confidence in their ability to write. Such findings go in line with those

of Moussaoui (2012) who elaborated on the close relationship between peer work and students' autonomy in writing.

7.5.3 The Benefits and Drawbacks of Peer and Automated Feedback

The analysis of the students' interview exhibited several threads of findings which suggest the benefits of using AWF and peer feedback in EFL writing. Based on the suggested analysis, four major merits are can be stemmed on peer feedback. Firstly, students see it as a way to master language mechanics such as grammar, syntax and learning strategies from their peers, as well as to implement what they have learned into practice. Second, peer errors serve as a reminder to avoid making the same mistakes in their own essays. By exchanging roles from writer to reader and reviewer, which is an effective method for fostering critical thinking, personal opinions on a topic can be better communicated, viewpoints can be broadened, writers' sense of audience can be reinforced, and grasp of the theme can be enhanced. Finally, their reading, writing, and communication skills improve as a result of the process.

In the same way, automated feedback yields three key benefits. To begin with, it can accurately detect linguistic, grammatical, and syntactic fallacies with few errors. This type of exercise can strengthen an individual's perception of the linguistic concepts and maximize self-directed learning. Second, non-corrective vocabulary feedback helps students expand their vocabulary on advanced words through the use of synonyms, antonyms, and word distinction to develop "a mental lexicon network" that connects previously learned vocabulary with newly acquired vocabulary. Then, after implementing the suggested recommendations, the student's linguistic performance can be ameliorated resulting in higher essay scores. By this, certain aspects of the writing skill will gradually improve as a result.

While the analysis of the students' interview revealed merits gained from AWF and peer feedback, demerits were given due attention as well. Following participants' responses, the main concern on peer feedback is the mediocre English

proficiency of their peers, which may affect negatively feedback's validity and reliability hindering them from giving an accurate and constructive corrective feedback as well as confining the range of feedback into vocabulary, grammar and syntax. A small portion of students also talked about the embarrassment that can be caused whilst pointing each other's mistakes. The student expressed the fear of being misunderstood and his comments are going to be taken as personal offenses and therefore he should consider "saving the face of the writer". Such findings might be attributed to the socio-cultural factors that are prevailing in the Algerian society that were previously discussed by previous studies in similar contexts (Seliem and Ahmed, 2009; Luo, Liu, et al., 2017).

To continue with demerits, pro writing aid, as with other learning technologies, does not come without limitations. Students expressed dissatisfaction with Pro writing aid inadequate explanations and overcorrection, which sometimes resulted in frustration. For instance, one of the students said that 'I don't understand, the application corrects my sentences even if they are grammatically correct".

Yet, sometimes overcorrection made the students to read more than once their writing pieces as it is the case of a student who declares "underlined lines force me to read my essay many times". Other section complained of cognitive overload as a result of the numerous revisions they had received. These results are also in line with the interaction theory proposed by Long (1996), which states that students learn best when they actively engage with content, connect with peers, solicit and incorporate criticism, and generate their own original work. The data reveal a probable interaction between the AWE tool, the students, and their self-regulation mechanisms from the standpoint of activity theory (cited in González-Lloret, 2003).

The interview's responses revealed a metalinguistic explanation as a possible explanation for the improvement in their writing accuracy. As revealed by some interviewees that they liked the personalized feedback generated by pro writing aid. For instance, an interviewee said that 'I like checking my essays with pro writing aid because it helps me revise better and the explanation is adjusted to my mistakes".

Since pro writing aid tailors its explanations and suggestions to each student, those using it have greater cognitive and linguistic flexibility while making changes and are better able to assimilate new information into their existing L2 repertoire. The findings are consistent with previous research on the importance of psycholinguistic readiness on language acquisition competence (Benati, 2017; Pica, 2005; Pienemann, 2015).

Last but not least, the factor that is thought to have caused students' authentic writing is being engaged in self-regulated learning. Drawing from the students' response, it was found that that the majority were cognitively, affectively, and behaviorally involved. Notably, a Pes student explained how she managed to take control over her learning process as she could "choose which answers to accept and which one to decline", while another Pes student remarked that 'I can simply decline the suggestions provided by pro writing aid I doubt their correctness'.

In the same line of thought, some students claimed they felt more assured and enthused after using the system's unbiased comments and suggested readability rate. As the student puts it *"there are no red lines in the application and this makes me less anxious"*. Others said that using pro writing aid prompted them to *"question my own knowledge in light of the correction"* and *"look elsewhere for confirmation of the pro writing aid changes"*. Low skilled learners, however, appear to be more prone to follow the recommendations without reflecting on them, as in the example of a pem student, who stated that she adopted the suggestions without consideration. From the findings described, it was noticed that pro writing aid was useful for low-skilled learners than high skilled learners as it helped them correct surface language errors that they are not aware of. Such findings are somehow contradicted to Koltovskaia, 2020 research in which he stated that AWF might be more fruitful for high skilled students. As such, the attributed results are consistent with previous reports on the importance of self-regulation and self-directed learning in L2 acquisition (Hibert, 2019; Jiang and Yu, 2022; Palermo and Wilson, 2020). The obstacles experienced by students while utilizing AWE technology in this writing course support the conclusions presented by Y.-J. Wang

et al., 2013 and M. Li and Li, 2017. A deeper comprehension of these challenges could aid L2 writing teachers in developing interventions to optimize the efficiency with which these instruments are adopted.

7.6 Results and Analysis of Students' Quantitative Data: A Comparison of Students' First And Second Writing Drafts

To gauge writing progress after the introduction of automated feedback and collaborative peer feedback, first drafts and the second drafts in the Pem and Pes group were measured holistically and analytically. It should be mentioned that the researcher –teacher resorted to another English teacher to help in rating the two drafts in order to avoid any bias in the results.

7.6.1 Presentation and Analysis of the Results (PES)

In this, we hypothesize that "there are statistically significant differences between the means of the research sample members of their essay writing of the essay writing points before and after using automated feedback and peer feedback" .To verify the validity of our hypothesis, the (T) test was used to verify the existence of differences between the arithmetic means and standard deviations.

- H0: There are no statistically significant differences between the first and second version in the essay writing.
- H1: There are statistically significant differences between the first and second version in the essay writing.

From the previous table we note that:

- The value of (T) calculated in "Organization" was 2.771 at the degree of freedom 20 and at the level of statistical significance 0.012 is less than the value of 0.05, where the first version mean was 3.28 and the standard deviation was 0.78, while the second version mean was 4.02 and the standard

Table 3: Result of t-test PES group.

Variables		Sample	Mean	Std-Dev	T. test	DF	Sig
Organization	First Version	21	3,28	0,78	2,771	20	0,012
	Second Version	21	4,02	1,05			
Grammar	First Version	21	2,69	0,78	3,263	20	0,004
	Second Version	21	3,78	1,32			
Content	First Version	21	4,00	0,83	3,568	20	0,002
	Second Version	21	4,66	1,11			
Unity	First Version	21	2,14	0,81	3,44	20	0,735
	Second Version	21	2,21	1,01			
Unity	First Version	21	12,78	1,48	2,763	20	0,012
	Second Version	21	14,02	2,71			

deviation was 1.05, and therefore there are significant differences Statistical significance between the two versions in organization in favor of the edited version:

- The value of (T) calculated in "Grammar" was 3.263 at the degree of freedom 20 and at the level of statistical significance 0.004 is less than the value of 0.05, where the edited version mean was 2.69 and the standard deviation was 0.78, while the second version mean was 3.78 and the standard deviation was 1.32, and therefore there are significant differences Statistical significance between the first and second version in Grammar subject in favor of the edited version.
- The value of (T) calculated in the "Content" was 3.568 at the degree of

freedom 20 and at the level of statistical significance 0.002 is less than the value of 0.05, where the first version mean was 4.00 and the standard deviation was 0.83, while the edited version mean was 4.66 and the standard deviation was the value 1.11, and therefore there are significant differences Statistical significance between the first and second version in the content of the subject in favor of the post-edition essay.

- The value of (T) calculated in "Unity" amounted to 0.344 at the degree of freedom 20 and at the level of statistical significance 0.735 greater than the value of 0.05, where the first version mean was 2.14 and the standard deviation was 0.81, while the second version mean was 2.21 and the standard deviation was 1.01, and therefore there are no differences Statistically significant between the two versions

- The value of (T) calculated in the Global Mark was 2.763 at the degree of freedom 20 and at the level of statistical significance 0.012 is less than the value of 0.05, where the first version mean was 12.78 and the standard deviation was 1.48, while the second version mean was 14.02 and the standard deviation was 2.71, and therefore there are differences statistically significant between the first- and second version in the Global Mark in favor of the edited version.

7.6.2 Presentation and Analysis of the Results (PEM)

The hypothesis states that "there are statistically significant differences between the means of the research sample members of the essay writing points before and after using automated feedback and peer feedback" and to verify the validity of our hypothesis, the (T) test was used to verify the existence of differences between the arithmetic means and standard deviations.

- H0: There are no statistically significant differences between the first version and the second version in the writing module using automated feedback and peer feedback.

- H1: There are statistically significant differences between the first version and the second version in the writing module using automated feedback and peer feedback.

Table 4: Result of t-test PEM group.

Variables		Sample	Mean	Std-Dev	T. test	DF	Sig
Organization	First Version	29	4,48	0,82	1,236	28	0,227
	Second Version	29	4,68	0,54			
Grammar	First Version	29	1,65	1,26	7,667	28	0,000
	Second Version	29	3,48	1,05			
Content	First Version	29	4,44	0,82	-0,360	28	0,722
	Second Version	29	4,37	0,72			
Unity	First Version	29	0,78	0,84	1,324	28	0,196
	Second Version	29	1,06	0,77			
Unity	First Version	29	11,37	2,39	5,701	28	0,000
	Second Version	29	13,62	1,56			

From the previous table we note that:

- The value of (T) calculated in "Organization" was 1.236 at the degree of freedom 28 and at the level of statistical significance 0.227 is greater than the value of 0.05, where the first version mean was 4.48 and the standard deviation was 0.82, while the second version mean was 4.68 and the standard deviation was 0.54, and therefore there are no differences Statistically significant between the first and second version in the subject.

- The value of (T) calculated in “Grammar” was 7.667 at the degree of freedom 28 and at the level of statistical significance 0.000 is less than the value of 0.05, where the first version mean was 1.65 and the standard deviation was 1.26, while the second version mean was 3.48 and the standard deviation was 1.05, and therefore there are significant differences Statistical significance between the pre and post edition in Grammar subject in favor of the edited version.

- The value of (T) calculated in “Content” was -0.360 at the degree of freedom 28 and at the level of statistical significance 0.722 is greater than the value of 0.05, where the first version mean was 4.44 and the standard deviation was 0.82, while the second version mean was 4.37 and the standard deviation was 0.72, and therefore there are no differences Statistically significant between the first and second version in the subject.

- The value of (T) calculated in “Unity” amounted to 1.324 at the degree of freedom 28 and at the level of statistical significance 0.196 greater than the value of 0.05, where the first version mean was 0.78 and the standard deviation was 0.84, while the second version mean was 1.06 and the standard deviation was 0.77, and therefore there are no differences Statistically significant between the first and second versions in the subject.

- The value of (T) calculated in the Global Mark was 5.701 at the degree of freedom 28 and at the level of statistical significance 0.000 is less than the value of 0.05, where the first version mean was 11.37 and the standard deviation was 2.39, while the second version mean was 13.62 and the standard deviation was 1.56, and therefore there are differences Statistically significant between the first and second versions in Global Mark in favor of the edited version.

7.7 Discussion of the Findings

The study was an attempt to explore the integration of online peer feedback and automated feedback and whether it could influence students’ writing improvement

and revision. This research yielded a number of significant results. First, the feedback provided by OPF was potentially more useful in terms of producing more sentences, and more lexical items and types of words while ACF was more useful in tracking grammatical and surface errors. The findings of the study match the findings of Chang, 2012 and Sachs and Polio, 2007, demonstrating that by employing asynchronous peer feedback, students are more likely to produce local-level comments and make adjustments when they get feedback from peers. Furthermore, this finding is consistent with research by Shang, 2022 and Shintani, 2016, which found that students improved their writing accuracy through self-correction of grammatical features when exposed to automated corrective feedback.

Qualitative data derived from the students' answers in the semi-structured interview also revealed students acknowledgement that online peer feedback assisted them the most by providing more ideas from peers, allowing them to produce more sentences, make more lexical items and word types. Also, students' grammatical accuracy improved much more as a result of peer-to-peer conversations and corrections. This conclusion is in line with earlier research findings (Liou and Peng, 2009; Storch and Wigglesworth, 2010; Wu et al., 2015), which suggest that OPF facilitates interactions by allowing students to interact and get feedback from peers. Nevertheless, peers' delayed responses, low English proficiency levels, or being fearful of providing any criticism are the major drawbacks of peer feedback. Such a result supports that of Seliem and Ahmed, 2009.

Second, responses to semi-structured interview revealed that a significant relationship was found between automated feedback ,lexical richness and grammar correction: the majority of respondents liked the use of ACF in the construction a more diverse vocabulary and verifying grammar correction. Indeed, ACF provides a better sense of immediacy and directness, allowing students to make modifications in the revised text to produce a more diverse vocabulary and error free compositions. Such findings, however, contradicts Shintani, 2016 finding, conclusion that there is no evidence that using direct corrective feedback mode improves the quality of syntactic and lexical aspects in the revised text. The interview also revealed that

students' low knowledge of the target language was a potential obstacle to adopting ACF because they could not understand the automated system's explanations. This validates Griffith, 2014 claim that students cannot construct the correct grammatical form using ACF because they don't have a complete understanding of the target structure. Therefore, interactions with peers for detailed explanations are recommended.

Finally, low-level writers made greater advancement (pem) than high-level writers (pes) in revising their texts with producing more sentences with varied lexical items after being exposed to ACF and online peer feedback. A quantitative examination of the two versions demonstrated a noticeable change in "Grammar" with a mean value of 3.263 for Pes group and 7.667 for Pem group. We notice from the revealed result that Pem were the ones who benefited more from automated feedback corrections as they were the ones who demonstrated a weak mastery of language mechanics.

The findings are partially compatible with Ge, 2011, who found that in the net-based peer review condition, students with lower writing skills made greater progress than those with higher abilities. Higher ability individuals, on the other hand, are more dissatisfied when they are placed with lower ability students. The reason for the latter, according to Hyland and Hyland, 2006 explanation (2006), is that lower-achieving students are less likely to provide assistance and relevant feedback that higher-achieving students require during the revision process.

The findings of this study was a response to Cheng, 2017 study that denounced the use of automated feedback only as a limitation. His study's findings demonstrated that, on the one hand, teacher feedback played a significant role that could neither be duplicated nor taken over by OAF. The reason is that a single feedback source cannot satisfy all the writing needs of EFL students as both OAF and teacher feedback have advantages and disadvantages. On the other hand, it was worthwhile to investigate how to combine peer feedback and OAF for writing in an efficient way. As Cheng pointed out, the findings he obtained using simply OAF

had a number of flaws, such as the inability to grasp human language and the absence of the fitness of the learner's writing content.

It is worth mentioning that blending automated feedback and teacher/peer feedback remains an unexplored area and very few research practically had attempted to blend the two sources of feedback. Previous studies have been limited in investigating the impact of these two sources of feedback independently. However, the conclusion made was that the computer-generated feedback is best to be integrated within teacher or peer feedback as it cannot efficiently be applied separately (Salavatizadeh and Tahriri, 2020; Huang, 2021). A plausible explanation that both automated feedback and peer feedback have their benefits and drawbacks, and no single source of feedback is able to satisfy all EFL learners' writing needs (Cheng, 2017).

In relation to students' attitude, the results of this study support C.-F. E. Chen and Cheng, 2008 assertion that AWE feedback can be positively received when it is followed by feedback from the teacher and peers to help EFL learners edit their work. Their research also showed that AWE feedback could not replace teacher and peer feedback because it made EFL students apprehensive and hampered their ability to compose. However, AWE is also known to be utilized in conjunction with conventional modes of evaluation, such as teacher and peer evaluations. (Chen & Cheng, 2008). Consistent with the current findings are the findings of another study (Liao, 2016) indicating that his candidates' better performance in writing was a result of repeating practices, gap awareness, and the application of an AWE tool within an integrated approach. (i.e. the blended computer-generated and teacher feedback). Therefore, we conclude that the overall findings of the current study are consistent with the findings of previous studies which demonstrated that EFL awareness of their writing problems and their aptitude to address them can be increased through the use of blended feedback (Cheng, 2017; Dikli and Bleyle, 2014; Zhang and Hyland, 2018).

7.8 Conclusion

AWE was one of the many technologies that were introduced in the EFL context that was hoped to solve many related problems . Despite of its attributed advantages ,it is possible that using AWE will make instructors' jobs even more challenging rather than easier. In order to integrate AWE into writing education, teachers need to be more technologically adept when dealing with AWE and more cautious when using appropriate pedagogical designs.

The results gleaned from students' interview unveiled that the majority of interviewees held a positive attitude towards AWE system, with the minority holding an uncertain attitude. The identified merits and demerits within can be used to explain for differences in attitudes between students. Peer feedback is appreciated for providing learning opportunities, making notifications against repetitive errors and means of multi-role interactions and skill improvement. In a similar way, automated feedback is valued for its role to meticulous error location, providing abundant lexical knowledge and offering constructive corrective feedback. In the meantime, demerits should not be underlooked in peer feedback and automated feedback. Such demerits may include limited English proficiency of peers, strict and inconsistent feedback, inclination to indirect corrective feedback and the insufficient ability to criticize on organization.

All in all, collaborative peer feedback proved to be effective in ESL writing instruction. Combined with other types of feedback, notably AWE, it will hopefully result in timely and manageable feedback that assist students in improving their quality of writing as well as facilitating language learning as a whole. Composition instructors need to be fully cautious of the shortcomings of AWE technology and make pedagogical decisions to maximize effectiveness of AWE and to minimize its undesirable outcomes.

Chapter 8

Research Implications and Recommendations

Contents

8.1 Introduction

Online learning has a significant and thorough presence in modern higher education. The online learning environment is now a reality rather than a future ambition. Despite the advent of numerous online learning environments, the blended method of instruction is regarded as the most suitable and widely implemented in European higher education institutions due to its attributed advantages. Concurrently, contemporary scholars have been exploring the difficulties of online course design in an effort to improve the learning process's efficacy. Consequently, a number of the studies presented a variety of frameworks and concepts, analyzed the students'

experiences, and examined the teaching practices in an online setting. The findings of this study contribute to a better understanding of blended learning in higher education by integrating conceptual frameworks into practice and simultaneously investigating the experiences of pre-service and instructors in a writing online course. The current chapter articulates implications for teaching practices and pedagogical requirements for higher education institutions, discussing ways to improve the quality and effectiveness of online blended courses.

8.2 Blended Learning as the "New Normal" in Post Covid 19

The global educational system has been severely disrupted by the COVID-19 epidemic. Significant learning losses and an increase in educational inequality were caused by widespread school closings and the sudden transition to online learning. This emphasized the need to upgrade teacher skills and reform educational systems through technology so that all learners may access inclusive, equitable, high-quality education. For the future of education, a blended learning strategy has been suggested to offer the options and flexibility needed. Higher education institutions has increased the deployment of digital technologies thanks to a shift to remote learning during the pandemic. To ensure learning continuity during the pandemic, universities have created distance learning solutions in collaboration with the government (Mikalauskaite, n.d.).

The epidemic highlighted the need for student learning to be altered and enhanced by technologies, even though online education cannot completely replace the functions that in-person classes can provide. When compared to in-person training, online learning has many advantages, including a more individualized, interactive, and adaptable learning environment. Additionally, online education can be provided without regard to time or location, broadening access to educational possibilities as technology is increasingly being adopted globally. For these reasons, it is anticipated that the education sector would spend more in emerging technologies and use blended learning strategies, which integrate face-to-face instruction

with online learning activities. With the transition to a digital curriculum, it is crucial for teachers to develop digital skills and for students to comprehend how to use technologies efficiently. Therefore, it is essential to empower teachers and increase investments in their professional development in order to enhance their skills and maximize the potential of blended learning (Mikalauskaite, n.d.).

The present paper has proposed Edmodo as an educational alternative to teach composition to university students during the time of the Coronavirus pandemic. As the virtual learning system was incorporated during COVID-19 for the first time in the Algerian higher education context, it becomes imperative to reflect on the experience, rectify the errors, and improve the practice. Denying that ICTs, particularly Web 3.0, have been infiltrating the educational sphere for nearly two decades and are now firmly established in today's teaching methods would only deprive our students of the opportunity to experience the new possibilities that these technologies would harness.

Importantly, we believe that teachers' have the absolute freedom to select appropriate digital instruments that they see it fits their learners' needs and interests. That is, once well implemented, blended learning has the potential to support exercising scaffolding strategies not only in teaching writing but also in other subject areas since it calls for learner's autonomy and self-directive learning.

On the basis of the findings that were reached at the conclusion of the study, the current study makes some pedagogical recommendations. Despite the fact that the current study suffers from a number of limitations such as the small number of participants and the exclusion of a control group, the results attained could be of some use to change-seeking teachers, students, institutions, and material designers. . Depending on the needs and learning styles of their learners, instructors can select the right approach, digital tool (Moodle system, web-editors, or social media) and the right scaffolding strategy that is thought to be most appropriate. In this study, Edmodo turned to be a very effective platform that did not only ensure student-teacher connectivity but also encouraged peer to peer collaboration. Moreover,

using the platform Edmodo allows teachers to manage multiple classrooms concurrently using blended learning. Students, especially shy ones, are the ones that are likely to be interested in experiencing such a way of learning since they get hardly an occasion to be engaged in classroom activities.

8.3 Opportunities and Challenges of a Blended Learning Course

Algeria has created a number of programs to modernize and advance its educational system mainly after the outbreak of Covid 19. To advance the national education revolution, related policies are continuously being created. However, in our review of the literature, we discovered lack of references that tackle other varieties of digital tools other than the developed LMS or Moodle . We believe that a variation of technological aids will enable the widespread, genuine, and adaptable adoption of BL practices.

Applying blended learning in EFL context may bring many advantages as well as many challenges to the front. The benefits of adopting a blended learning approach are well stated in literature. Such benefits include enhanced academic performance; improved comprehension and cognitive engagement; quicker, more adaptable communication;, smoother interaction; development of technical skills and learner motivation; autonomy promotion , positive attitudes, active behavior patterns, satisfaction, self - directed learning, critical faculty, and adaptation in students. In sum, BL promotes a student-centered approach that has long been missing in higher education in Algeria.

The practical application of this learning strategy has also shown various difficulties. The most pervasive issue that arises when implementing this hybrid learning mode in higher education settings is a lack of pedagogical and instructional design, which is just one of the many drawbacks of BL in the Algerian context. The majority of the stakeholders and experts stated that in order to enable BL to be used more broadly, this problem needs to be resolved in the soonest possible. Lack of student autonomy and competency, lack of digital literacy and training, lack of

approaches, devices, resources, and infrastructure are also other major challenges in applying BL. Furthermore, while organizing a course, teachers struggle with juggling two different duties at once. They must create a lesson that can be delivered both online and offline. Teachers must devote a significant amount of work to this style of course creation. They must not only design a course to satisfy the needs of both online and traditional classroom instruction, but also provide unique resources for each format and provide significant assistance to a large number of learners. They must provide lectures, keep an eye on their students, engage in social interactions, carry out assessment tasks, and assess both versions. Thus, employing BL technologies requires instructors to put in a lot of time and effort. Furthermore, teacher-centered teaching methods have been long entrenched in the Algerian educational culture, and educational stakeholders are accustomed to this approach. However, BL has a solid foundation in student-centered instruction, which contradicts some aspects of the Algerian's traditional modes of instruction.

Both technical and pedagogical challenges also arise when creating a BL content. It might be difficult to adapt lesson plans and develop content in a way that complies with digital distribution techniques and LMS while adhering to pedagogical designs and theories that can support learners' knowledge acquisition in a progressive and self-directed manner. BL cannot be effective unless teachers consider updating their skills and infuse their technical content knowledge along with the pedagogical knowledge.

8.4 Integration of Teacher and AWF in the EFL Classroom

Critics have been raised that the promotion of AWE may lead to the automation of writing education , which can undermine teachers' autonomy, independence, and control over their work (Woodworth and Barkaoui, 2020). A rising number of academics (e.g., C.-F. E. Chen and Cheng, 2008; J. Li et al., 2015; Warschauer and Grimes, 2008; Zhang and Hyland, 2018) are promoting a hybrid strategy that incorporates instructor feedback and AWE as a result of its attributed limitations.

This method allows teachers to highlight the social and communicative aspects of writing while also presenting AWE's advantages and disadvantages to students in a balanced way. It also allows teachers to customize feedback from the AWE system to the requirements and developmental stage of their students. A number of shortcomings of instructor feedback may also be addressed by combining the two feedback systems. First, written corrective feedback must be relevant to learners' requirements and L2 competence level in order to be effective and encourage L2 development. Previous studies that put into question the efficiency of written corrective feedback has scrutinized the fine line between direct and indirect feedback and their ability in promoting learners' metacognitive awareness. Nevertheless, AWE systems provide only two forms of indirect feedback: generic and specific (Woodworth & Barkaoui, 2020). When a category of error is found, generic feedback displays the same message without providing any specific recommendations for corrections. For instance, whenever Pro Writing Aid finds a fragment, it conveys the same message: "This sentence may be a fragment. Contrarily, specific feedback adds some textual elements to provide a specific advice. For instance, Pro Writing Aid incorporates the original text in its comments when it finds a "confusing" word error and suggests other alternatives instead. Despite the fact that both sorts of feedback can direct the learner's attention to the mistake and offer metalinguistic explanations, without supplementary scaffolding, students may find such input upsetting, particularly if they are unable to comprehend or fix the problem. Even while students may revise their work, not understanding feedback could result in internalized alterations. (Storch, 2010). If the options presented by the AWE system's feedback are above a particular learner's developmental level, they might not be taken advantage of. Teachers are therefore counseled to moderate AWE feedback by providing precise, particular, and explicit recommendations on how to enhance writing and scaffolding classroom instruction to address in gaps in students' linguistic and metalinguistic expertise.

Second, teachers can increase AWE by considering the social and communicative components of writing. AWE systems evaluate student essays in reference to proxies

for writing traits, without taking into account the potential effects of the text on human audiences in situations where they might actually read it.

Thirdly, educators can better control the expectations of their students by selecting when and how to apply AWE by being fully and critically aware of the limitations and opportunities offered by the technology. This will allow the educators to better manage the expectations of their students . However, learners may still find value in erroneous written feedback from AWE systems if they are made aware of these limits and instructed on how to evaluate and apply such feedback in conjunction with teachers' mediation of AWE input. Moreover, if students are taught how to evaluate and use feedback from AWE systems, it can help them pay more attention to the writing and revising processes (Lavolette et al., 2015). Grimes and Warschauer, 2010 (P.31) argued that inaccurate feedback is even more common as "maleducative when it is presented as authoritative and when no human expertise is available to override dubious scores and feedback". In cases of erroneous feedback and error codes from AWE systems, the instructor can help learners overcome self-doubt and go forward with proper procedures for double-checking errors and the feedback received. Finally, combining either teacher or peer feedback with AWE feedback can be beneficial for teachers and learners alike. As it was reported in our study, peer feedback may suffer from many limitations such as students' low proficiency level, being reluctant to provide feedback for some socio-cultural reasons. As for the teacher's feedback, Lee (2004) observed that teachers frequently rely on error codes and direct/indirect feedback, with few provisions for oral or written metalinguistic input. Metalinguistic feedback, such as that provided by AWE, has been found to aid learners in developing an understanding of grammatical and linguistic rules, despite the mixed views regarding the efficacy of direct and indirect feedback. (Shintani and Ellis, 2013)

Additionally, research on teacher corrective feedback indicates that it might be erratic, ad haphazard, vague, inaccurate, intense, or delayed (Abel et al., 2018; Lee, 2008; Truscott, 1996 cited in Woodworth and Barkaoui, 2020). AWE, on the other hand, exhibits high consistency and is unaffected by factors that can skew human

feedback and judgment, including fatigue, halo effects (where one's evaluation of one aspect of writing is influenced by their evaluation of other aspects), stereotyping (where one's opinions about a particular group affect their evaluation of individuals in that group), and other sources of bias (T. Wang and Jiang, 2015). Therefore, combining teacher corrective feedback with AWE is thought to fit better learners' needs and knowledge level, revisit and build on earlier learning.

8.5 Blockchain Basics and How it Can Serve for the Overall Learning Process

8.5.1 Blockchain Basics

According to the US National Institute of Standardization and Technology (NIST), Blockchain is defined as: Distributed digital ledgers of cryptographically signed transactions are grouped into blocks, each block is cryptographically linked to the previous one (making it tamper clear) after validation and undergoing a consensus decision. As new blocks are added, older blocks become more difficult to modify (creating tamper resistance). New blocks are replicated across copies of the ledger within the network, and any conflicts are resolved automatically using established rules (Antwi et al., 2021; *National Institute of Standardization and Technology (NIST), Computer Security Resource Center*, (accessed on 11 Nov. 2019)).

The entire blockchain is stored in each miner (as a single unit) for synchronization instead of storing individual blocks. Figure 8.1 summarizes the structure of the blocks.

Block Components

Joshi et al., 2018 described the structure of the block as:

- Data: This is the application data held in the distributed database blocks. The block can hold any type of data and is thus application-independent. Further, the block can hold multiple data units from diverse types of applications. Each data unit in the block is called a 'message' or a 'transaction'.

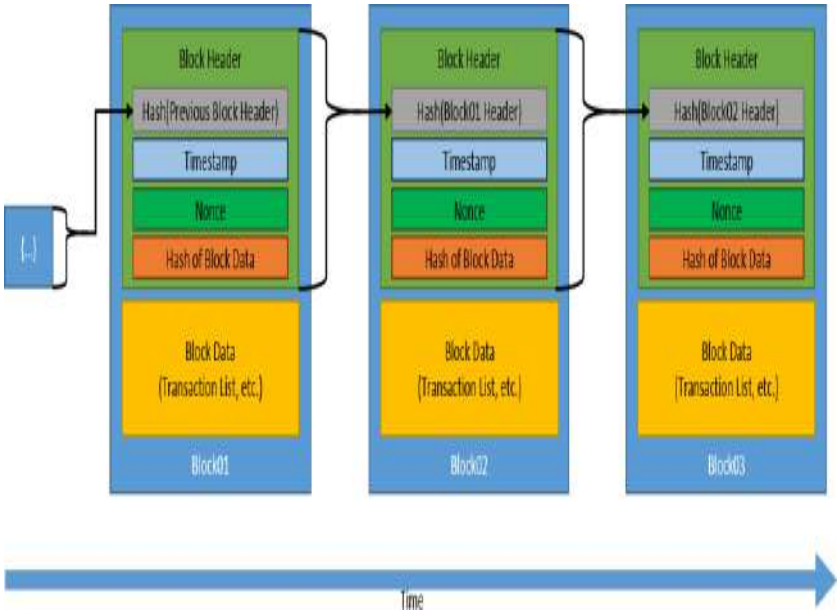

Figure 8.1: General Chain of Blocks.

- Hash: In a single block, three types of hash values exist: the hash value of the previous block (which is used to chain the blocks), the root hash representing all transactions stored in the block, and the hash value of the current block at the time it is committed to the chain.

- Timestamp: The timestamp at which the block was added to the chain.

- Other information: This includes information such as the software version used by the miner and the current difficulty level. An essential information element called a 'nonce' is used for block validation and the consensus algorithm.

Types of Blockchains

Types of blockchains are defined according to how miners join the Blockchain network. Joshi et al., 2018 classified Blockchain networks as follows.

- Public Blockchain (permission less): This type of Blockchain is publicly accessible without permissions or restrictions, eliminating the limitations of a central authority. Any node running the mining software (such as GETH for Ethereum Blockchain) can take part and start adding blocks, executing

the consensus algorithm, voting to discard blocks, and obtaining access to any unencrypted information stored in the blocks.

- Private Blockchain (permissioned): This type of Blockchain is a permission-based platform established by a group of firms, individual firms, or divisions within a firm in which data can be accessed by users that are part of the mining group and properly authenticated.

- Consortium Blockchain: The consortium Blockchain is a hybrid between the no single trusted entity model of public Blockchain and the single, highly trustable entity model of private Blockchain. It is perceived as a partially decentralized Blockchain.

Transaction Lifecycle

The life-cycle of transactions varies depending on the type of Blockchain. For example, in Ethereum, Weber et al., 2017 summarized the transaction life-cycle as follows.

- The sender prepares its transaction with the application data and sends it to its local miner. The sender signs the transaction with its private key, which is validated by the local miner.

- The local miner generates a transaction ID and broadcasts the ID to the pool of miners. This transaction ID is a hash value of the hashed transaction.

- The miners maintain a pool of queued transactions. This queue is generally sorted based on the fees (called gas) paid by senders to process their transactions. Miners prefer to pick transactions with higher incentives (higher gas).

- Once a miner picks a certain number of queued transactions, it builds a block to include them. Next, the miner attempts to solve a crypto-puzzle to be elected to broadcast the block (This is called the consensus algorithm

and varies based on the type of Blockchain. Ethereum uses a proof of work (POW) algorithm for consensus that is based on solving crypto-puzzles).

- Upon successful puzzle resolution, the miner posts the block in the Blockchain and waits for confirmation from other miners on the block that it is committed to the main chain. Ethereum considers the presence of 12 proceeding blocks after the committed block as confirmation.

Blockchain Consensus

Yaga et al., 2019 described consensus as the process that determines which user publishes the next block. Different models of consensus are used in Blockchains. These vary between CPU-intensive models, which is suitable for permissionless Blockchains for additional security, and low CPU models, which is suitable for permissioned Blockchains that assume a level of trust between miners. Some commonly-used consensus models are listed by Yaga et al., 2019. The following sections describe the different models used in Blockchain for reaching consensus.

- *Proof of Work (POW):* In the POW model, a complex crypto-puzzle is published to all miners in the Blockchain. The first miner that solves the puzzle is granted permission to publish its blocks. The miner has to submit the solved puzzle as a "proof", which is validated by other miners, and then the block is accepted. The difficulty of the puzzle varies and is continuously adjusted to maintain an average block committing time (e.g., 10 minutes in Bitcoin). Accordingly, POW is considered highly CPU-intensive and is usually used in permissionless Blockchains to reduce attackers' interests in participating.

- *Proof of Stack (POS):* The POS model uses the amount of stack that miners invest in the system as an indication of their genuine intention and disinterest in compromising the Blockchain. The actual stack of the Blockchain varies based on its type, but cryptocurrency is generally used. The miners invest in the cryptocurrency of the Blockchain, which is unusable expect for being

a measure of their trust. This model is currently being evaluated in permissionless Blockchains as it eliminates the high computational requirements of the POW model.

- *Proof of Authority (POA):* The POA model is based on maintaining a level of trust between miners and is used only in permissioned Blockchains. This level of trust is established through proven identities, which are verified by Blockchain members (e.g., authorized documents). During Blockchain runtime, the reputation of miners varies depending on their behavior, a number of accepted blocks, and other factors. Miners with a better reputation will be awarded more slots to publish blocks, while it will not award malicious miners sufficient slots to publish blocks.

- *Round Robin Consensus:* Similar to the POA model, round robin consensus is limited to permissioned Blockchains. In this model, miners are awarded equal slots to submit blocks. An advantage of this model is that it guarantees that no miner can create a majority of blocks without the need for complex computation for validation.

8.5.2 Blockchain for Learning

Despite the fact that blockchain technology was first used in the field of economics, it is not exclusive to it. In this section, we highlight that the field of education also can benefit from blockchain technologies. In education, blockchain can be used in setting digital personal language knowledge Identity, creating versatile language tests, the design and assessment of language courses, or the development of methods for monitoring language learning progress. In addition, , blockchain can contribute to the establishment of a digital language knowledge identity by compiling a record of the credentials (certificates, scores, training, etc.), official (educational institutions) or informal (online services, apps, MOOCs, etc.), that a learner has earned. To make this record accessible to any institution or company with an interest, it may be recorded in a public blockchain. According to Sayers

(2016), a school or product validation system that provides access to data regarding how a school or product affects students' language competency might be developed using blockchain as a reliable base.

There is currently a lack of research on blockchain applications for language learning. However, there are a few important research initiatives. A blockchain-based online language learning system was suggested by Sun et al. (2021) to accurately and fairly track students' English learning progress. The system can manage students and learning materials and employs smart contracts to perform four functions: record students' learning behavior, calculate students' final scores, record students' final scores, and query results. The authors claim that such a system can relieve teachers of time-consuming and complex assignments while also providing trustworthy feedback on students' conduct. Min and Bin (2022) investigated the use of blockchain in course design and evaluation in Chinese institutions in their study. They discovered that redesigning online courses based on blockchain technology can increase the quality of teaching and the trust of various parties in online education by implementing an experimental course based on blockchain technology. Wu (2020) presented an English Online Education Platform based on Genetic Algorithm and Blockchain Technology, with the goal of increasing work efficiency, improving examination fairness and flexibility, and making examination work standardized and paperless. In order to save examiners and teachers from the conventional heavy examination work, the system manages examinations, an item bank, test papers, and a marking function. Furthermore, the system takes into account the examination syllabus, difficulty level, and content while producing English language tests. In a similar endeavor, we suggested a trusted online-learning framework aiming to secure online learning platforms (LMSs) and, thus, to ensure the expected standard of teaching and fairness of assessment and to promote students' and teachers' motivation through blockchain reward methods (Cheriguene et al, 2022).

8.5.3 Advantages of Incorporating Blockchain Technology to the Online Education Process

Several new applications emerged along with Blockchain, including educational applications, with the following advantages:

- Online resources are available in a reliable, secured and trusted environment for all users at anytime and from anywhere.

- Reliable, verifiable and trusted support for students' achievements, grades and transcripts. Blockchain-based framework insures the data remains unchanged.

- The reward system would enable teachers to be more active and to work more.

- Robust and trusted verification of students' achievements and grades which are stored and available in the Blockchain platform. This will ease and speed up recruitment or registrations to other degrees.

- Blockchain platforms are decentralised and provide a quicker recovery in case of an IT disaster (technological or natural causes)

- Strong authentication: Blockchain solves most of the authentication issues. Within a blockchain-based authentication environment, there would be no way to fake an ID, passport, credit card number, grades, etc. Even if a hacker was able to access the data/credentials via the data owner, he wouldn't be able to copy it, change or remove it. It would be impossible to add a new data to the chain without the majority of nodes verifying its validity.

- The blockchain reliable and secure environment will promote the public acceptance of online distance learning.

8.5.4 Open Challenges Facing the Incorporation of Blockchain Technology to the Online Education Process

Even though, Blockchain-based architecture has solved many issues related to e-learning, there are still few open challenges. First, it is important to understand the limitations and boundaries of the security measures offered in Blockchain-based solutions. For example, the it cannot stop the learners from sharing their logins with other malicious user, or from uploading a malware. Indeed, in traditional education, students will have access via the trusted institution network (e.g. for enrollement, exams ...etc) which follows the IT security policy. However, using an e-learning solution implies that the institution needs to implement and enforce a remote access policy to secure the learners and the institution.

Second, online assessment and marking are still a big challenge in the design of e-learning platforms, especially in the case of big classes. Artificial intelligent could be used for online camera monitoring of learners, and assisting tutors in marking.

Finally, blockchain scalability and privacy issues need to be taken into account. For scalability, few researches suggested combining Blockchain with cloud-computing and AI solutions to increase the efficiency of the service delivery. Privacy is another issue because data is shared between all Blockchain participants.It is also likely that in some areas centralised web options will remain even as the decentralised web develops

8.6 Recommendations for Further Studies

Based on the humble findings of this study, some recommendations are suggested. First, it is worth noting that blended learning has to be viewed as an approach rather than a method as it includes theoretical principles of cognitivism, constructivism, and social situated learning. Thus, implementing this approach demands meticulous consideration of and a careful planning. Second, the use of the platform Edmodo in a blended approach appears to be the of the most appropriate tools for teaching writing to university students particularly in an EFL context as it offers several benefits that can cater for the deficiencies of traditional teaching

method. Yet, deciding on the right blend is context-dependent in the sense that what fits a particular group of students might not fit another one. In this study, the blended learning was useful in a noticeable manner for students who are usually shy and inactive in the classroom. Third, technology is a tool and not an end, so face-to-face interaction with the teacher remains necessary and beneficial. Fourth, decent training in ICTs tools for education is suggested for teacher staff if they are meant to develop efficient blended learning courses, for it is an intricate task that demands technical expertise as well as good management skills. Finally, despite being a source of controversy in literature, AWF tools proved to be effective in correcting students' papers thanks to its trait of metalinguistic explanation. Once impaired with peer or teahers' feedback, AWF can be even more effective. The researcher suggests the following study recommendations for further research:

1. A research which investigates the effectiveness of Edmodo in other English skills and sub-skills such as civilization, literature or the reading skill.

2. A research that tests the effect of collaborative online writing platforms such as Google Docs or Zoho Writer on students' group work and their writing achievement.

3. A research that explores the impact of e-assessment tools such as Kahoot on promoting learner's written performance.

4. A research that investigates the effectiveness of blended learning in achieving the 21st skills namely the 4C's (Collaboration, communication, critical thinking, creativity).

5. A research that explores teachers' attitude and perceptions in using Edmodo in EFL learning.

6. A research that compares teacher corrective feedback to automated feedback with investigating which form of feedback students take into consideration while revising or editing a piece of writing.

8.7 Conclusion

At the end of this chapter, we remind that the merge of technologies in EFL instruction is not a panacea as it comes with both benefits and limitations as it was displayed in this chapter. At the end technology is a tool and never an end. The researcher reminds also that the use of multimedia into writing instruction is not going yield instant outcomes. However, if such techniques are maintained over a good period of time, they will result in satisfying learning results. As the researcher finds from this small-scale experimental study, instructors can benefit from their students' expertise in using social based networks to help them develop stronger writing skills in a multimedia-supported environment. At the end , the researcher suggests that the implementation of blended learning requires collaborative efforts from curriculum designers, university professors, supervisors, instructors, students, and the local community.

Chapter 9

General Conclusion

Rapid technological advancements have ushered in the information age that has been characterized by the exponential rise and simple accessibility of a vast amount of information. It also prompted calls for curriculum reform and the teaching of information management and critical thinking as practitioners were urged to reconsider their teaching methods mainly after the outbreak of Covid 19. As students struggle with processing data, making efforts to fathom of the vast amounts of information, they should be equipped with the necessary skills to help them make sense of their learning operation. Utilizing the psychosocial constructivist theory is one method that could be used to achieve the latter.

Constructivist pedagogies are based on the idea that learning is greatly improved when people build their own knowledge. The learner is a crucial agent in the educational process. Every learner therefore has a greater capacity for learning when learning is shaped by the social environment. The zone of proximal development refers to this range of a learner's potentials (ZPD). Learning in the (ZPD) is a combined activity where the teacher monitors both the student's abilities with support and the objectives of the learning design sequence. As a result, teachers can help students enhance their language and topic knowledge in a variety of ways using an interactive sociocultural approach. One method that is particularly in accordance with the Socio-Cultural perspective of the theory (SCT) is known as scaffolding. To define it , scaffolding refers to the operation of advancing students' understanding gradually so they can become more independent in their knowledge

quest operation. Yet, the fundamental concept behind learning scaffolds is not recent as it dates back to the late 1950s.

In an analogy to the way scaffolding is constructed to adjust the needed level in a building and then uninstalled once the building is complete, educators engage in scaffolding by offering the required level and ample assistance that responds to the students' needs. Hence, scaffolding in constructing knowledge is reached when learners are taken to places that they would be unable to reach without an extra intervention. Scaffolding enables the construction of new knowledge, rectifies false conceptions, and helps in recalling knowledge that has been forgotten. As such, learners are actively stimulated by this framework in the ZPD.

The present work is a part of Phd research that sought to report on the use of Edmodo, an online interactive platform, to implement scaffolding strategies in accomplishing writing tasks for third year pre service teachers at the Ens of Laghouat. The aim of this empirical study was to explore the effectiveness of scaffolding strategies in an online setting and correlate them with the learners' writing achievement. The study employed a pre-experimental research design based on scaffolding strategies suggested by Holton and Clark's (2006) which gives emphasis on expert scaffolding (the teacher's) ,reciprocal (peer reviewing) and self scaffolding. The context of the study was in the Teachers' Higher College where the researcher works as an assistant teacher in Laghouat District. The study involved the participation of 50 participants that were engaged in a selected range of online tasks synchronously and asynchronously during the academic year 2021/2022.

In order to reach our objectives the following research questions were formulated:

1. Would a combination of traditional teaching and online learning help in scaffolding students' writing skills?

2. Is there a noticeable difference in writing skills between the high and low autonomous EFL students utilizing Edmodo in a blended learning context?

3. Can time restraints, issues with the writing process, and feedback be resolved by a blended learning writing course?

4. Does the combination of the pro writing aid and peer editing help third year students at the ENS of Laghouat in reducing language errors?

5. What is the omnipresent, secure, and safe backup solution to support the overall learning process during emergency cases like Covid 19.

In order to attain satisfying answer to our research questions, our research design has been divided into two complementary phases. The first phase (a period of six weeks) aimed at answering the first three research questions while the second phase (four weeks) aimed at answering the forth research questions. Each phase has been explained and elaborated on in a separate chapter. At the end of this study, we reached the following conclusions:

- Using pre/test and a likert scale questionnaire, the results emanating from the first phase of our research approved the use of the platform Edmodo as a blended learning tool. Thanks to its appealing characteristics, Edmodo made it simple for students to communicate and collaborate with their online peers and teachers. Such findings have much in common with the results of the previous case studies (Miftah & Raya, 2018; Purnawarman et al., 2016; Shams-Abadi et al., 2015; Fauzi, 2015), mainly in relation to student performance in writing classes. Results showed also that there was a significant difference in the mean essay writing scores before and after the introduction of BL. For the majority of the participants, the overall writing performance of the writing essay administered at the end of the study was higher than that administered beforehand. The remarkable difference in the writing scores might be due to the teachers' use of extra writing tasks as all the online activities are additional ones related to the same topics tackled the classroom.

- To question the stagnation of the minority of students who did not make a remarkable progress during the blended learning experiment, the researcher

adopted an autonomy checklist from the study of Sujannah et al. (2020). Results demonstrated that there exist a bond between students' performance and their autonomy level as the high autonomous learners made far more progress that the low autonomous learners. Such findings go in accordance with many previous research that attempted to investigate the correlation between students' writing abilities in a blended learning setting and their autonomy level (Sujannah et al. 2020, Abdel-Haq & Ali , 2020). Although in a hybrid learning setting the high autonomous EFL students outperformed the low autonomous ones in terms of writing skills, this did not imply that teachers could not instruct the low autonomous EFL students using this method. Since blended learning encourages students to be independent, self-regulated learners, numerous studies contend that its use could raise autonomy levels (Sujannah et al. ,2020).

- In order to answer our third research question, an evaluative likert scale questionnaire was developed. The evaluation form revealed that the hyprid writing course was satisfactory in a range of aspects. The most significant components of blended learning, according to the students, were material delivery, active participation, a reduction in writing anxiety, and increased student-teacher interaction.

- In the second phase, we attempted to review the feedback provided by both peer and the pro writing aid. It was found that peer feedback addressed local error errors while AWE feedback addressed surface errors. Still, an in-depth review of the student papers revealed that the AWE system had missed some error categories notably article and preposition. Nevertheless, while peer or teacher feedback may be helpful in this regard, AWE commentary tended to draw attention to rather than fix student mistakes. Although the efficiency of such indirect feedback on learning has been debated in research, this procedure can assist students become more conscious of their errors (Ferris, 2002). Additionally, there were substantially more marginal remarks in the

AWE. In a quantitative analytic review of the students' papers before and after the use of pro writing aid and peer feedback, it was found that Pem students (less skilled than Pes) had achieved higher sores in the "Grammar" aspect leading to the conclusion that automated feedback software can be more useful to students who still struggle with language mechanics. In the same line of thought, we found that high skilled learners may provide more thorough corrective feedback while commenting on their peers' writing, including difficulties lexical usage or inappropriate translation that typically fall outside the purview of AWE feedback routines. The evaluation of two types of feedback on L2 student writing suggests that combining the two types of feedback in educational settings may be even more advantageous

In this research, we aimed also at introducing blockchain technology that is considered as a promising trend in the growing digital education. Blockchain technology, which is seen as a part of the fourth industrial revolution after the development of the steam engine, electricity, and information technology, has been used in numerous fields, including banking, law, and health. In the section on recommendations, we suggested using blockchain technology to address certain issues pertaining to education, with a focus on its potential educational applications. Within this section, we also introduced the characteristics and merits of blockchain technology followed by skimming some of the actual blockchain applications for education.

References

Adams, R., Alwi, N. A. N. M., & Newton, J. (2015). Task complexity effects on the complexity and accuracy of writing via text chat. *Journal of second language writing*, *29*, 64–81.

Aguilera-Hermida, A. P. (2020). College students' use and acceptance of emergency online learning due to covid-19. *International Journal of Educational Research Open*, *1*, 100011.

Ahluwalia, G., Gupta, D., & Aggarwal, D. (2011). The use of blogs in english language learning: A study of student perceptions. *Profile Issues in TeachersProfessional Development*, *13*(2), 29–41.

Alied, N. A., Alkubaidi, M. A., & Bahanshal, D. A. (2022). The use of blogs on efl students' writing and engagement in a saudi private school. *Journal of Education and Learning*, *11*(4).

Al-Kathiri, F. (2015). Beyond the classroom walls: Edmodo in saudi secondary school efl instruction, attitudes and challenges. *English Language Teaching*, *8*(1), 189–204.

Alshumaimeri, Y. (2011). The effects of wikis on foreign language students writing performance. *Procedia-Social and Behavioral Sciences*, *28*, 755–763.

Amiryousefi, M. (2016). The differential effects of two types of task repetition on the complexity, accuracy, and fluency in computer-mediated l2 written production: A focus on computer anxiety. *Computer Assisted Language Learning*, *29*(5), 1052–1068.

Amiryousefi, M. (2017). The differential effects of collaborative vs. individual prewriting planning on computer-mediated l2 writing: Transferability of task-based linguistic skills in focus. *Computer Assisted Language Learning*, *30*(8), 766–786.

An, Y.-J., & Williams, K. (2010). Teaching with web 2.0 technologies: Benefits, barriers and lessons learned. *International Journal of Instructional Technology and Distance Learning*, *7*(3), 41–48.

Andujar, A. (2016). Benefits of mobile instant messaging to develop esl writing. *System*, *62*, 63–76.

Antwi, M., Adnane, A., Ahmad, F., Hussain, R., Habib ur Rehman, M., & Kerrache, C. A. (2021). The case of hyperledger fabric as a blockchain solution

for healthcare applications. *Blockchain: Research and Applications*, *2*(1), 100012. https://doi.org/https://doi.org/10.1016/j.bcra.2021.100012

Anurugwo, A. O. (2020). Ict tools for promoting self-paced learning among sandwich students in a nigerian university. *European Journal of Open Education and E-learning Studies*, *5*(1).

Ariyanto, M. S. A., Mukminatien, N., & Tresnadewi, S. (2019). Students' and teacher's perceptions towards the implementation of prowritingaid and teacher feedback. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, *4*(10), 1353–1363.

Arneil, S., & Holmes, M. (1998). Hot potatoes. victoria, british columbia: Inivercity of victoria and half-baked software.

Arnold, N., Ducate, L., & Kost, C. (2012). Collaboration or cooperation? analyzing group dynamics and revision processes in wikis. *Calico Journal*, *29*(3), 431–448.

Arslan, R. Ş., & Şahin-Kızıl, A. (2010). How can the use of blog software facilitate the writing process of english language learners? *Computer assisted language learning*, *23*(3), 183–197.

Aslan, E., & Ciftci, H. (2019). Synthesizing research on learner perceptions of cmc use in efl/esl writing. *calico journal*, *36*(2).

Attali, Y., & Burstein, J. (2006). Automated essay scoring with e-rater® v. 2. *The Journal of Technology, Learning and Assessment*, *4*(3).

Aydın, Z., & Yıldız, S. (2014). Using wikis to promote collaborative efl writing. *Language Learning and Technology*.

Ayoub, J. (2019). Effective use of zoom sessions (a synchronous learning strategy) to foster success and motivation of lebanese university students in bekaa: A case study. *Journal of Letters, Nature, and Science]. Available at https://www. awraqthaqafya. com/601*.

Azzioui, A. (2009). Teaching writing through the process approach.

Babo, R., Rodrigues, A. C., Lopes, C. T., de Oliveira, P. C., Queiros, R., & Pinto, M. (2012). Differences in internet and lms usage a case study in higher education. In *Higher education institutions and learning management systems: Adoption and standardization* (pp. 247–270). IGI Global.

Bacha, N. (2003). English across academic and professional communities: A study of efl learners' needs at the lebanese american university. *AAICU Journal*, *2*, 29.

Balasubramanian, K., Jaykumar, V., & Fukey, L. N. (2014). A study on "student preference towards the use of edmodo as a learning platform to create responsible learning environment". *Procedia-Social and Behavioral Sciences*, *144*, 416–422.

Ballouk, R., Mansour, V., Dalziel, B., McDonald, J., & Hegazi, I. (2022). Medical students' self-regulation of learning in a blended learning environment: A systematic scoping review. *Medical education online*, *27*(1), 2029336.

Barnes, M. (2017). Encouraging communication through the use of educational social media tools. In *Multiculturalism and technology-enhanced language learning* (pp. 1–12). IGI Global.

Barrot, J. S. (2021). Using automated written corrective feedback in the writing classrooms: Effects on l2 writing accuracy. *Computer Assisted Language Learning*, 1–24.

Bath, D., & Bourke, J. (2010). *Getting started with blended learning*. GIHE.

Bean, J. C. (2014). Engaging ideas: The professor's guide to integrating writing, critical thinking, and active learning in the classroom. *FAMILY MEDICINE*, *46*(2), 143.

Beatty, K. (2013). *Teaching and researching: Computer-assisted language learning*. Routledge.

Beatty, R. W., Huselid, M. A., & Schneier, C. E. (2003). New hr metrics:: Scoring on the business scorecard. *Organizational Dynamics*, *32*(2), 107–121.

Beauvois, M. (1998). Conversations in slow motion: Computer-mediated communication in the foreign language classroom. *Canadian Modern Language Review*, *54*(2), 198–217.

Benati, A. (2017). The role of input and output tasks in grammar instruction: Theoretical, empirical and pedagogical considerations. *Studies in Second Language Learning and Teaching*, *7*(3), 377–396.

Bereiter, C., & Scardamalia, M. (2013). *The psychology of written composition*. Routledge.

Berg, E. C. (1999). The effects of trained peer response on esl students' revision types and writing quality. *Journal of second language writing*, *8*(3), 215–241.

Bersin, J. (2004). *The blended learning book: Best practices, proven methodologies, and lessons learned*. John Wiley & Sons.

Birjandi, P., & Jazebi, S. (2014). A comparative analysis of teachers' scaffolding practices. *International Journal of Language and Linguistics*, *2*(3), 154–164.

Blake, R. J., & Zyzik, E. C. (2003). Who's helping whom?: Learner/heritage-speakers' networked discussions in spanish. *Applied linguistics*, *24*(4), 519–544.

Boblett, N. (2012). Scaffolding: Defining the metaphor. *Studies in Applied Linguistics and TESOL*, *12*(2).

Bonk, C. J. (2009). *The world is open: How web technology is revolutionizing education*. Association for the Advancement of Computing in Education (AACE).

Bonk, C. J., & Graham, C. R. (2012). *The handbook of blended learning: Global perspectives, local designs*. John Wiley; Sons.

Bouarab-Dahmani, F., & Tahi, R. (2015). New horizons on education inspired by information and communication technologies. *Procedia-social and behavioral sciences*, *174*, 602–608.

Boughey, C. (1997). Learning to write by writing to learn: A group-work approach. *ELT journal*, *51*(2), 126–134.

Bouguebs, R. (2019). Adopting a flipped efl learning classroom in higher education: Knowledge and practices. *Dr Nadia Idri, Faculty of Arts and Languages, University of Bejaia, Algeria*, 55.

Bouhadiba, F. (2000). Elt and cross cultural communication. *Imago*, *3*, 95–110.

BOUTLIDJA, R. (n.d.). Hybrid teaching during the corona pandemic period at the algerian university.

Braine, G. (2001). A study of english as a foreign language (efl) writers on a local-area network (lan) and in traditional classes. *Computers and Composition*, *18*(3), 275–292.

Bransford, J. D., Brown, A. L., Cocking, R. R., et al. (2000). *How people learn* (Vol. 11). Washington, DC: National academy press.

Bridwell, L. S. (1985). Revising and computing. case studies of student writers. *The acquisition of written language. Revision and response*, 172–194.

Brinton, D. M. (2001). The use of media in language teaching. *Teaching English as a second or foreign language. Boston*.

Brooks, N. (1964). Language and language teaching.

Buran, A., & Evseeva, A. (2015). Prospects of blended learning implementation at technical university. *Procedia-Social and Behavioral Sciences*, *206*, 177–182.

Burston, J. (2001). Computer-mediated feedback in composition correction. *CALICO Journal*, 37–50.

Bush, M. D., & Crotty, J. (1991). Interactive videodisc in language teaching. *Modern technology in foreign language education: applications and projects*, 75–96.

Byrne, D. (1979). *Teaching writing skills*. Longman.

Cahyono, B. Y., & Mutiaraningrum, I. (2016). Indonesian efl teachers' familiarity with and opinion on the internet-based teaching of writing. *English Language Teaching*, *9*(1), 199–208.

Cakici, D. (2017). An investigation of learner autonomy in turkish efl context. *International Journal of Higher Education*, *6*(2), 89–99.

Cameron, B. (2003). The effectiveness of simulation in a hybrid and online networking course. *TechTrends*, *47*(5), 18.

Caraivan, L. (2011). Blended learning: From concept to implementation. *Euromentor Journal*, *2*(4), 1.

Castells, M., et al. (1999). *Information technology, globalization and social development* (Vol. 114). UNRISD Geneva.

Cerioli, M., Ribaudo, M., & Rui, M. (2012). Lms adoption at the university of genova: Ten years after. In *Higher education institutions and learning management systems: Adoption and standardization* (pp. 271–291). IGI Global.

Chambers, L. (2011). Composition and revision in computer-based written assessment. *Research Notes*, *43*, 25–32.

Chang, C.-F. (2012). Peer review via three modes in an efl writing course. *Computers and Composition*, *29*(1), 63–78.

Chapelle, C. (2010). Evaluating computer technology for language learning. *mailed to: teslontario@ telus. net or mailed on*.

Chapelle, C. A. (2001). *Computer applications in second language acquisition*. Cambridge University Press.

Chelli, S. (2013). Developing students' writing abilities by the use of self assessment through portfolios.

Chen, C.-F. E., & Cheng, W.-Y. E. C. (2008). Beyond the design of automated writing evaluation: Pedagogical practices and perceived learning effectiveness in efl writing classes. *Language Learning and Technology*, *12*(2), 94–112.

Chen, T. (2016). Technology-supported peer feedback in esl/efl writing classes: A research synthesis. *Computer Assisted Language Learning*, *29*(2), 365–397.

Chen, X.-B. (2013). Tablets for informal language learning: Student usage and attitudes. *Language learning and technology*, *17*(1), 20–36.

Chen, Y., Carger, C. L., & Smith, T. J. (2017). Mobile-assisted narrative writing practice for young english language learners from a funds of knowledge approach. *Language Learning and Technology*, *21*(1), 28–41.

Cheng, G. (2017). The impact of online automated feedback on students' reflective journal writing in an efl course. *The Internet and Higher Education*, *34*, 18–27.

Cheung, W. S., & Hew, K. F. (2011). Design and evaluation of two blended learning approaches: Lessons learned. *Australasian Journal of Educational Technology*, *27*(8).

Cho, H. (2017). Synchronous web-based collaborative writing: Factors mediating interaction among second-language writers. *Journal of Second Language Writing*, *36*, 37–51.

Ciftci, H., & Kocoglu, Z. (2012). Effects of peer e-feedback on turkish efl students' writing performance. *Journal of Educational Computing Research*, *46*(1), 61–84.

Çiftçi, H., & Aslan, E. (2019). Computer-mediated communication in the l2 writing process: A review of studies between 2000 and 2017. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, *9*(2), 19–36.

Clark, R. C., & Mayer, R. E. (2016). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning*. john Wiley; sons.

Cohen, L., & Manion, L. (1994). Research methods in education fourth edition. *New York: Croom Helm Ltd*.

Cotos, E. (2011). Potential of automated writing evaluation feedback. *Calico Journal*, *28*(2), 420–459.

Crafton, R. E. (1996). Promises, promises: Computer-assisted revision and basic writers. *Computers and Composition*, *13*(3), 317–326.

Crystal, D. (n.d.). *The cambridge encyclopedia of language* (Vol. 2). Cambridge University Press Cambridge.

Cuban, L. (1993). Computers meet classroom: Classroom wins. *Teachers college record*, *95*(2), 185–210.

Curry, M. J., & Hewings, A. (2003). Approaches to teaching writing.

Dakhmouche, L., & Abderrahim, F. (2019). *Developing the composition skills of english as a foreign language university learners through blended learning* (Doctoral dissertation). Mentouri university of constantine.

Darwish, A., & Lakhtaria, K. I. (2011). The impact of the new web 2.0 technologies in communication, development, and revolutions of societies. *Journal of advances in information technology*, *2*(4), 204–216.

Davies, G., Otto, S. E., & Rüschoff, B. (2013). Historical perspectives on call. *Contemporary computer-assisted language learning*, 19–38.

De Silva, R. (2015). Writing strategy instruction: Its impact on writing in a second language for academic purposes. *Language Teaching Research*, *19*(3), 301–323.

Defilippi, M. T. A., Miller, K. L., & Ramirez-Avila, M. R. (2020). Collaboration to improve descriptive writing facilitated by padlet: An english as a foreign language (efl) action research study. *AtoZ: novas práticas em informação e conhecimento*, *9*.

del Campo Adrian, M. E. (2012). Evaluating psychoeducational support integrated into an e-learning scenario: Support model and impact on ict practices. *International Journal of Developmental and Educational Psychology: INFAD. Revista de Psicologia*, *2*(1), 155–164.

Demetriadis, S. N., Papadopoulos, P. M., Stamelos, I. G., & Fischer, F. (2008). The effect of scaffolding students' context-generating cognitive activity in technology-enhanced case-based learning. *Computers and Education*, *51*(2), 939–954.

Demouy, V., & Kukulska-Hulme, A. (2010). On the spot: Using mobile devices for listening and speaking practice on a french language programme. *Open Learning: The Journal of Open, Distance and e-Learning*, *25*(3), 217–232.

Denning, J. (2000). *Guide to education research for journalists*. The Hechinger Institute on Education; the Media at Teachers College, Columbia University.

DeVoss, D., Eidman-Aadahl, E., & Hicks, T. (2010). National writing project: Because digital writing matters.

Dib, N. (2021). Athe effect of scaffolding instruction on students' writing skills. *Revue EL-Bahith en Sciences Humaines et Sociales*, *13*(2), 543–549.

DiGiovanni, E., & Nagaswami, G. (2001). Online peer review: An alternative to face-to-face? *ELT journal*, *55*(3), 263–272.

Dikli, S. (2006). An overview of automated scoring of essays. *The Journal of Technology, Learning and Assessment*, *5*(1).

Dikli, S., & Bleyle, S. (2014). Automated essay scoring feedback for second language writers: How does it compare to instructor feedback? *Assessing writing*, *22*, 1–17.

Dizon, G., & Thanyawatpokin, B. (2018). Web 2.0 tools in the efl classroom: Comparing the effects of facebook and blogs on l2 writing and interaction. *The EuroCALL Review*, *26*(1), 29–42.

Doo, M. Y., Bonk, C., & Heo, H. (2020). A meta-analysis of scaffolding effects in online learning in higher education. *International Review of Research in Open and Distributed Learning*, *21*(3), 60–80.

Doolan, D. C., Mehigan, T. J., Tabirca, S., & Pitt, I. (2012). Cross platform m-learning for the classroom of tomorrow. In *Wireless technologies: Concepts, methodologies, tools and applications* (pp. 2042–2059). IGI Global.

Dudeney, G., Hockly, N., et al. (2007). How to teach english with technology.

Durant, E., & Trachy, A. (2017). Digital diploma debuts at mit. using bitcoin's blockchain technology, the institute has become one of the first universities to issue recipientowned virtual credentials.

Eaton, S. (2010). Global trends in language learning in the twenty-first century. calgary, canada.

Ebadi, S., & Rahimi, M. (2017). Exploring the impact of online peer-editing using google docs on efl learners' academic writing skills: A mixed methods study. *Computer Assisted Language Learning*, *30*(8), 787–815.

Egbert, J. (2004). A study of flow theory in the foreign language classroom. *Canadian modern language review*, *60*(5), 549–586.

Egbert, J. (2005). Call essentials: Principles and practice in call classrooms. alexandria, va: Teachers of english to speakers of other languages.

Ekmekçi, E. (2016). Integrating edmodo into foreign language classes as an assessment tool. *Participatory Educational Research*, *3*(4), 1–11.

El Ebyary, K., & Windeatt, S. (2010). The impact of computer-based feedback on students' written work. *International Journal of English Studies*, *10*(2), 121–142.

Ellis, R., Loewen, S., & Erlam, R. (2006). Implicit and explicit corrective feedback and the acquisition of l2 grammar. *Studies in second language acquisition*, *28*(2), 339–368.

El-Mowafy, A., Kuhn, M., & Snow, T. (2013). Blended learning in higher education: Current and future challenges in surveying education. *Issues in Educational Research*, *23*(2), 132–150.

Elola, I., & Oskoz, A. (2016). Supporting second language writing using multimodal feedback. *Foreign Language Annals*, *49*(1), 58–74.

Englert, C. S., Wu, X., & Zhao, Y. (2005). Cognitive tools for writing: Scaffolding the performance of students through technology. *Learning Disabilities Research and Practice*, *20*(3), 184–198.

Eyman, D., & Reilly, C. (2006). Revising with word processing/technology/document design.

Farivar, A., & Rahimi, A. (2015). The impact of call on iranian efl learners' autonomy. *Procedia-Social and Behavioral Sciences*, *192*, 644–649.

Fauzi, A. (2017). The effect of edmodo on students' writing skill in recount text. *International Journal of Pedagogy and Teacher Education*, *1*(2), 73–79.

Fellner, T., & Apple, M. (2006). Developing writing fluency and lexical complexity with blogs. *The jalt call Journal*, *2*(1), 15–26.

FLOWEand, L., & Hayes, J. (1980). Identifying the organization of writing processes. *a Gregg, LW*.

Flower, L., & Hayes, J. R. (1980). The cognition of discovery: Defining a rhetorical problem. *College composition and communication*, *31*(1), 21–32.

Foroutan, M., Noordin, N., & Hamzah, M. S. G. B. (2013). Use of e-mail dialogue journal in enhancing writing performance. *Asian Social Science*, *9*(7), 208.

Fullan, M. G. (1993). Why teachers must become change agents. *Educational leadership*, *50*, 12–12.

Gamper, J., & Knapp, J. (2002). A review of intelligent call systems. *Computer Assisted Language Learning*, *15*(4), 329–342.

García Aretio, L. (2004). Blended learning,¿ enseñanza y aprendizaje integrados?

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The internet and higher education*, *7*(2), 95–105.

Garrison, K. (2009). An empirical analysis of using text-to-speech software to revise first-year college students' essays. *Computers and composition*, *26*(4), 288–301.

GASMI, M., et al. (2017). *Moodle-based peer review as a tool to enhance and improve efl learners' writing performance: The case of third lmd english department students–laghouat university* (Doctoral dissertation).

Ge, Z.-g. (2011). Exploring e-learners' perceptions of net-based peer-reviewed english writing. *International Journal of Computer-Supported Collaborative Learning*, *6*(1), 75–91.

Gee, J. P. (2005). Semiotic social spaces and affinity spaces. beyond communities of practice language power and social context. *Beyond communities of practice. Language, power and social context*, 214–232.

Geta, M., & Olango, M. (2016). The impact of blended learning in developing students' writing skills: Hawassa university in focus. *African Educational Research Journal*, *4*(2), 49–68.

GHOUALI, K., & BENMOUSSAT, S. (2020). Moodle in the algerian efl classroom: Practical considerations. *Human Science Journal*, *31*(2), 899–910.

Ghounane, N. (2020). Moodle or social networks: What alternative refuge is appropriate to algerian efl students to learn during covid-19 pandemic. *Arab World English Journal (AWEJ) Volume*, *11*.

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).

González-Lloret, M. (2003). Designing task-based call to promote interaction: En busca de esmeraldas. *Language Learning & Technology*, *7*(1), 86–104.

Grabe, W., & Kaplan, R. (1996). Theory and practice of writing. london and new york.

Grabe, W., & Kaplan, R. B. (2014). *Theory and practice of writing: An applied linguistic perspective*. Routledge.

Graham, S. (1999). The role of text production skills in writing development: A special issue-i. *Learning Disability Quarterly*, *22*(2), 75–77.

Griffin, P., & Care, E. (2014). *Assessment and teaching of 21st century skills: Methods and approach*. Springer.

Griffith, P. (2014). Impacts of online technology use in second language writing: A review of the literature. *Reading Improvement*, *51*(3), 303–312.

Grimes, D., & Warschauer, M. (2010). Utility in a fallible tool: A multi-site case study of automated writing evaluation. *The Journal of Technology, Learning and Assessment*, *8*(6).

Gromik, N. A. (2012). Cell phone video recording feature as a language learning tool: A case study. *Computers and education*, *58*(1), 223–230.

Guemide, B., & Maouche, S. (2021). Assessment of online learning in algerian universities during covid-19. *Kut University College Journal for Humanitarian Science*, *2*, 490–515.

Hafner, C. A. (2013). Digital composition in a second or foreign language. *Tesol Quarterly*, *47*(4), 830–834.

Halverson, L. R., Spring, K. J., Huyett, S., Henrie, C. R., & Graham, C. R. (2017). Blended learning research in higher education and k-12 settings. *Learning, design, and technology*, 1–30.

Hamzaoui, H. (2006). An exploration into the strategies used for essay writing across three languages: The case of efl university students. *Unpublished Doctorate Thesis: University of Tlemcen*.

Hamzaoui-Elachachi, H. (2010). Development of a writing curriculum for academic purposes at tertiary level: The case of algerian efl university students. *ESP world*, *1*(27), 1–9.

Hankins, S. N. (2015). *The effects of ed modo on student achievement in middle school*. St. Thomas University.

Hariharasudan, A., & Kot, S. (2018). A scoping review on digital english and education 4.0 for industry 4.0. *Social sciences*, *7*(11), 227.

Harraqi, M. (2017). Review of aida walqui's scaffolding instruction for english language learners: A conceptual framework. *American Journal of Arts and Design*, *2*(3), 84–88.

Harris, J. (1993). *Introducing writing.* Penguin English.

Hartman, H. (2002). Scaffolding and cooperative learning. *Human learning and instruction*, 23–69.

Hasan, M., & Rezaul Karim, M. (2019). Scaffolding effects on writing acquisition skills in efl context. *Arab World English Journal (AWEJ) Volume*, *10*.

Hasselgren, A., Kralevska, K., Gligoroski, D., Pedersen, S. A., & Faxvaag, A. (2020). Blockchain in healthcare and health sciences—a scoping review. *International Journal of Medical Informatics*, *134*, 104040.

Hawkridge, D. (1989). Machine-mediated learning in third-world schools? *Machine-mediated learning*, *3*(4), 319–28.

Hedge, T. (1988). *Writing*. Oxford University Press.

Hegelheimer, V., & Fisher, D. (2006). Grammar, writing, and technology: A sample technology-supported approach to teaching grammar and improving writing for esl learners. *CALICO journal*, 257–279.

Herrington, J., Herrington, A., Mantei, J., Olney, I., & Ferry, B. (2009). New technologies, new pedagogies. *Mobile learning in higher education*, *2*(1), 2–6.

Hesse-Biber, S. N., & Leavy, P. (2011). Focus group interviews. *The practice of qualitative research*, 163–192.

Hibert, A. I. (2019). Metacognitive processes and self-regulation in the use of automated writing evaluation programs. *European Conference on Technology Enhanced Learning*, 655–658.

Hirvela, A. (2007). Computer-mediated communication and the linking of students, text, and author on an esl writing course listserv. *Computers and Composition*, *24*(1), 36–55.

Hogue, A., & Oshima, A. (1999). *Writing academic english*. Longman.

Holec, H. (1979). *Autonomy and foreign language learning*. ERIC.

Holton, D., & Clarke, D. (2006). Scaffolding and metacognition. *International journal of mathematical education in science and technology*, *37*(2), 127–143.

Horowitz, D. (1986). Essay examination prompts and the teaching of academic writing. *English for Specific Purposes*, *5*(2), 107–120.

Hricko, M. (2008). Blogs. In *Encyclopedia of information technology curriculum integration* (pp. 81–92). IGI Global.

Huang, L. (2021). From feedback to revision–how can collaborative peer feedback make a difference? *2021 Tenth International Conference of Educational Innovation through Technology (EITT)*, 228–232.

Huff, R. K. (1983). Teaching revision: A model of the drafting process. *College English*, *45*(8), 800–816.

Hussin, S., Abdullah, M. Y., Ismail, N., & Yoke, S. K. (2015). The effects of cmc applications on esl writing anxiety among postgraduate students. *English Language Teaching*, *8*(9), 167–172.

Hyland, K. (2003). Writing and teaching writing. *Second language writing*, 1–30.

Hyland, K. (2016). Methods and methodologies in second language writing research. *System*, *59*, 116–125.

Hyland, K. (2019). *Second language writing*. Cambridge university press.

Hyland, K., & Hyland, F. (2006). Feedback on second language students' writing. *Language teaching*, *39*(2), 83–101.

Jayaron, J., & Abidin, M. J. Z. (2016). A pedagogical perspective on promoting english as a foreign language writing through online forum discussions. *English language teaching*, *9*(2), 84–101.

Jiang, L., & Yu, S. (2022). Appropriating automated feedback in l2 writing: Experiences of chinese efl student writers. *Computer Assisted Language Learning*, *35*(7), 1329–1353.

Jirgensons, M., & Kapenieks, J. (2018). Blockchain and the future of digital learning credential assessment and management. *Journal of teacher education for sustainability*, *20*(1), 145–156.

Jonassen, D. (2000). Toward a design theory of problem solving. educationaltechnology research and development 48 (4): 63-85.

Joseph, J. (2012). The barriers of using education technology for optimizing the educational experience of learners. *Procedia-Social and Behavioral Sciences*, *64*, 427–436.

Joshi, A. P., Han, M., & Wang, Y. (2018). A survey on security and privacy issues of blockchain technology. *Mathematical foundations of computing*, *1*(2), 121.

Kadri, S., & Hamada, H. (n.d.). *The effect of blended learning on efl learners' motivation and academic writing abilities* (Doctoral dissertation). Université Frères Mentouri-Constantine 1.

Kaur, M. (2013). Blended learning-its challenges and future. *Procedia-social and behavioral sciences*, *93*, 612–617.

Kennedy, C., & Levy, M. (2008). L'italiano al telefonino: Using sms to support beginners' language learning1. *ReCALL*, *20*(3), 315–330.

Khamkhien, A. (2012). Computer assisted language learning and english language teaching in thailand: Overview. *Mediterranean Journal of Social Sciences*, *3*(1), 55–55.

Kim, W. (2007). Towards a definition and methodology for blended learning. *The proceedings of workshop on blended learning*, 1–8.

Kirkman, J., & Turk, C. (2002). *Effective writing: Improving scientific, technical and business communication*. Routledge.

Kızıl, A. Ş., & Kilimci, A. (2014). Recurrent phrases in turkish efl learners' spoken interlanguage: A corpus-driven structural and functional analysis. *Journal of Language and Linguistic Studies*, *10*(1), 195–210.

Koltovskaia, S. (2020). Student engagement with automated written corrective feedback (awcf) provided by grammarly: A multiple case study. *Assessing Writing*, *44*, 100450.

Kongchan, C. (2008). How a non-digital-native teacher makes use of edmodo. *5th Intenational Conference ICT for language learning*.

Krasnova, T., & Ananjev, A. (2015). Students' perception of learning in the online discussion environment. *Mediterranean Journal of Social Sciences*, *6*(6 S1), 202–202.

Krasnova, T., & Vanushin, I. (2016). Blended learning perception among undergraduate engineering students. *International Journal of Emerging Technologies in Learning (iJET)*, *11*(01), 54–56.

Kress, G. (2013). Multimodal discourse analysis. In *The routledge handbook of discourse analysis* (pp. 61–76). Routledge.

Krishnamurthy, S. (2005). A demonstration of the futility of using microsoft word's spelling and grammar check.

Kroll, B. (1990). *Second language writing* (Vol. 10). Cambridge: Cambridge University Press.

Kujur, P., & Chhetri, B. (2015). Evolution of world wide web: Journey from web 1.0 to web 4.0. *International Journal of Computer Science and Technology*, *6*(1), 134–138.

Kukulska-Hulme, A., & Shield, L. (2008). An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL*, *20*(3), 271–289.

Kuteeva, M. (2011). Wikis and academic writing: Changing the writer–reader relationship. *English for Specific Purposes*, *30*(1), 44–57.

Lai, C., & Li, G. (2011). Technology and task-based language teaching: A critical review. *CALICO journal*, *28*(2), 498–521.

Lam, T. Y., & Dongol, B. (2020). A blockchain-enabled e-learning platform. *Interactive learning environments*, 1–23.

Latchem, C., & Jung, I. (2009). *Distance and blended learning in asia*. Routledge.

Lavolette, E., Polio, C., & Kahng, J. (2015). The accuracy of computer-assisted feedback and students' responses to it. *Language, Learning & Technology*, *19*(2).

Leacock, C., Chodorow, M., Gamon, M., & Tetreault, J. (2010). Automated grammatical error detection for language learners. *Synthesis lectures on human language technologies*, *3*(1), 1–134.

Lee, M.-K. (2015). Peer feedback in second language writing: Investigating junior secondary students' perspectives on inter-feedback and intra-feedback. *System*, *55*, 1–10.

Leng, K. T. P. (2014). An analysis of written feedback on esl students' writing. *Procedia-Social and Behavioral Sciences*, *123*, 389–397.

Li, J., Link, S., & Hegelheimer, V. (2015). Rethinking the role of automated writing evaluation (awe) feedback in esl writing instruction. *Journal of Second Language Writing*, *27*, 1–18.

Li, M., & Li, J. (2017). Online peer review using turnitin in first-year writing classes. *Computers and Composition*, *46*, 21–38.

Li, M., & Storch, N. (2017). Second language writing in the age of cmc: Affordances, multimodality, and collaboration.

Li, M., & Zhu, W. (2013). Patterns of computer-mediated interaction in small writing groups using wikis. *Computer Assisted Language Learning*, *26*(1), 61–82.

Li, Y. (2000). Linguistic characteristics of esl writing in task-based e-mail activities. *System*, *28*(2), 229–245.

Li, Z., Dursun, A., & Hegelheimer, V. (2017). Technology and l2 writing. *The handbook of technology and second language teaching and learning*, 77–92.

Liang, M.-y. (2006). Exploring interactions in text chat rooms. *IADIS International Conference WWW/Internet 2006*, 43–47.

Lier, L. (1996). Van. interaction in the language curriculum. awareness, autonomyandauthenticity.

Lier, L. v. (2007). Action-based teaching, autonomy and identity. *International Journal of Innovation in Language Learning and Teaching*, *1*(1), 46–65.

Lim, C. P., & Tay, L. Y. (2003). Information and communication technologies (ict) in an elementary school: Students' engagement in higher order thinking. *Journal of Educational Multimedia and Hypermedia*, *12*(4), 425–451.

Lin, H. (2015a). Computer-mediated communication (cmc) in l2 oral proficiency development: A meta-analysis. *ReCALL*, *27*(3), 261–287.

Lin, H. (2015b). A meta-synthesis of empirical research on the effectiveness of computer-mediated communication (cmc) in sla. *Language Learning and Technology*, *19*(2), 85–117.

Lin, M. H. (2014). Effects of classroom blogging on esl student writers: An empirical reassessment. *The Asia-Pacific Education Researcher*, *23*(3), 577–590.

Lin, M. H. (2015). Learner-centered blogging: A preliminary investigation of efl student writers' experience. *Journal of Educational Technology and Society*, *18*(4), 446–458.

Lin, M. H., Li, J.-J., Hung, P. Y., & Huang, H.-W. (2014). Blogging a journal: Changing students' writing skills and perceptions. *ELT journal*, *68*(4), 422–431.

Lin, M.-H., Lin, C.-Y., & Hsu, P.-Y. (2011). The unrealistic claims for the effects of classroom blogging on english as a second language, students' writing performance. *British Journal of Educational Technology*, *42*(6), E148–E151.

Lin, W.-C., Huang, H.-T., & Liou, H.-C. (2013). The effects of text-based scmc on sla: A meta analysis. *Language Learning and Technology*, *17*(2), 123–142.

Liou, H.-C., & Peng, Z.-Y. (2009). Training effects on computer-mediated peer review. *System*, *37*(3), 514–525.

Littlejohn, A., & Pegler, C. (2007). *Preparing for blended e-learning*. Routledge.

Liu, M. (2013). Blended learning in a university efl writing course: Description and evaluation. *Journal of Language Teaching and Research*, *4*(2).

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*, 226–246.

Luke, C. L. (2006). Fostering learner autonomy in a technology-enhanced, inquiry-based foreign language classroom. *Foreign Language Annals*, *39*(1), 71–86.

Luo, Y., Liu, Y., et al. (2017). Comparison between peer feedback and automated feedback in college english writing: A case study. *Open Journal of Modern Linguistics*, *7*(04), 197.

Lynch, R., & Dembo, M. (2004). The relationship between self-regulation and online learning in a blended learning context. *International Review of Research in Open and Distributed Learning*, *5*(2), 1–16.

Ma'azi, H., & Janfeshan, K. (2018). The effect of edmodo social learning network on iranian efl learners writing skill. *Cogent Education*, *5*(1), 1536312.

MacArthur, C. A., Schwartz, S. S., & Graham, S. (1991). Effects of a reciprocal peer revision strategy in special education classrooms. *Learning Disabilities Research and Practice*.

Mahini, F., Forushan, Z. J.-A., & Haghani, F. (2012). The importance of teacher's role in technology-based education. *Procedia-Social and Behavioral Sciences*, *46*, 1614–1618.

Mahiri, J. (2011). *Digital tools in urban schools: Mediating a remix of learning*. University of Michigan Press.

Manca, S., & Ranieri, M. (2016). Facebook and the others. potentials and obstacles of social media for teaching in higher education. *Computers and Education*, *95*, 216–230.

Masita, D. D. (2016). Efl students'ability in performing autonomous learning and their writing proficiency across cognitive styles. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, *1*(6), 1204–1215.

Masoumzadeh, E., & Ardebil, I. (2016). The relationship between iranian efl learners autonomy, commitment and writing ability. *International Journal of Educational Investigations*, *3*(7), 96–105.

McLoughlin, C., & Lee, M. J. (2008). The three p's of pedagogy for the networked society: Personalization, participation, and productivity. *International journal of teaching and learning in higher education*, *20*(1), 10–27.

Means, B. (2010). Technology and education change: Focus on student learning. *Journal of research on technology in education*, *42*(3), 285–307.

Miftah, M. Z., & Raya, I. P. (2018). Utilization of edmodo as an online tool in efl writing class to increase students' writing ability. *Register Journal*, *11*(1), 37–58.

Mikalauskaite, G. (n.d.). The future of education – a shift towards blended and lifelong learning [Accessed: 2022-08-26].

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.

Mohammadi, M., Bagheri, M., Jafari, P., & Bazrafkan, L. (2020). Motivating medical students for social accountability in medical schools. *Journal of Advances in Medical Education & Professionalism*, *8*(2), 90.

Montague, N. (1995). The process oriented approach to teaching writing to second language learners. *New York State Association for Bilingual Education Journal*, *10*(2), 13–24.

Morris, F. (2005). Child-to-child interaction and corrective feedback in a computer mediated l2 class. *Language Learning and Technology*, *9*(1), 29–45.

Motteram, G. (2010). A context-based approach to web 2.0 and language education. In *Web technologies: Concepts, methodologies, tools, and applications* (pp. 1141–1158). IGI Global.

Moussaoui, S. (2012). An investigation of the effects of peer evaluation in enhancing algerian student's writing autonomy and positive affect. *Procedia-Social and Behavioral Sciences*, *69*, 1775–1784.

Mulligan, C., & Garofalo, R. (2011). A collaborative writing approach: Methodology and student assessment. *The Language Teacher*, *35*(3), 5–10.

Murray, J. H., Morgenstern, D., & Furstenberg, G. (1989). The athena language learning project: Design issues for the next generation of computer-based language learning tools. *Modern Technology in Foreign Language Education*, 97–118.

Myers, S. (1997). Teaching writing as a process and teaching sentence-level syntax: Reformulation as esl composition feedback. *TESL-EJ*, *2*(4), 1–16.

Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system. *Decentralized Business Review*, 21260.

National institute of standardization and technology (nist), computer security resource center [https://csrc.nist.gov/Glossary]. ((accessed on 11 Nov. 2019)).

Nepomuceno, M. M. (2011). Writing online: Using blogs as an alternative writing activity in tertiary esl classes. *TESOL journal*, *5*(2), 92–105.

Norberg, A., Dziuban, C. D., & Moskal, P. D. (2011). A time-based blended learning model. *On the Horizon*.

Nunan, D. (1991). Methods in second language classroom-oriented research: A critical review. *Studies in second language acquisition*, *13*(2), 249–274.

Nunan, D., David, N., & Swan, M. (1992). *Research methods in language learning*. Cambridge university press.

Odriozola-González, P., Planchuelo-Gómez, Á., Irurtia, M. J., & de Luis-García, R. (2020). Psychological effects of the covid-19 outbreak and lockdown among students and workers of a spanish university. *Psychiatry research*, *290*, 113108.

OECD., K. (2018). *Oecd science, technology and innovation outlook 2018*. OECD Publishing Paris.

Oliver, R. (2002). The role of ict in higher education for the 21st century: Ict as a change agent for education. *Retrieved April*, *14*, 2007.

Olsen, S. (1980). Foreign language departments and computer-assisted instruction: A survey. *The Modern Language Journal*, *64*(3), 341–349.

O'malley, J. M., O'Malley, M. J., Chamot, A. U., & O'Malley, J. M. (1990). *Learning strategies in second language acquisition*. Cambridge university press.

Otto, T. B., Campos, A., Souza, M. A. d., Martins, D., & Bock, E. (2017). Online posture feedback system aiming at human comfort. *International Conference on Applied Human Factors and Ergonomics*, 924–935.

Ourghi, R. (2002). The implications of critical reflection and discourse awareness for educational change. *Unpublished Doctoral Thesis). AbouBakrBelkaid University, Tlemcen*.

Özdemir, E., & Aydın, S. (2015). The effects of blogging on efl writing achievement. *Procedia-social and behavioral sciences*, *199*, 372–380.

Palermo, C., & Wilson, J. (2020). Implementing automated writing evaluation in different instructional contexts: A mixed-methods study. *Journal of Writing Research*, *12*(1), 63–108.

Parson, G. (1985). Hand in hand: The writing process and the microcomputer. two revolutions in the teaching of writing. a manual for secondary teachers.

Pham, V. P. H., Luong, T. K., Thi Thuy Oanh, T., & Quang Giao, N. (2022). Should peer e-comments replace traditional peer comments? *Pham, VPH, Luong, TKP, Tran, TTO, Nguyen, QG (2020). Should Peer E-Comments Replace Traditional Peer Comments*, 295–314.

Pica, T. (2005). Classroom learning, teaching, and research: A task-based perspective. *The modern language journal*, *89*(3), 339–352.

Pienemann, M. (2015). An outline of processability theory and its relationship to other approaches to sla. *Language Learning*, *65*(1), 123–151.

Prensky, M. (2001). Digital natives, digital immigrants part 2: Do they really think differently? *On the horizon*.

Purnawarman, P., Susilawati, S., & Sundayana, W. (2016). The use of edmodo in teaching writing in a blended learning setting. *Indonesian Journal of Applied Linguistics*, *5*(2), 242–252.

Radia, B. (2019a). Blended learning impact on efl readers' ability to summarize and respond to narrative texts. *Revue de Traduction et Langues Volume 18Numéro*, *1*, 29–50.

Radia, B. (2019b). Approaching a reading course via moodle-based blended learning: Efl learners' insights. *Modern Journal of Language Teaching Methods (MJLTM)*, *9*(11), 0–0.

Rahimi, M., & Pourshahbaz, S. (2018a). English as a foreign language teachers' tpack: Emerging research and opportunities: Emerging research and opportunities.

Rahimi, M., & Pourshahbaz, S. (2018b). The technological pedagogical content knowledge of efl teachers (efl tpack). In *Encyclopedia of information science and technology, fourth edition* (pp. 7659–7670). IGI Global.

Raimes, A. (1983). *Techniques in teaching writing.* ERIC.

Ramey, K. (2013). What is technology-meaning of technology and its use. *Canton Fair*.

Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2021). An approach for scaffolding students peer-learning self-regulation strategy in the online component of blended learning. *IEEE Access*, *9*, 30721–30738.

Rashtchi, M. (2019). Scaffolding argumentative essay writing via reader-response approach: A case study. *Asian-Pacific Journal of Second and Foreign Language Education*, *4*(1), 1–17.

Razali, N. (2016). The importance and efforts in using technology to improve language teaching and learning and the teacher as readiness for integrating ict in the classroom in malaysian education. *Journal of Education and Social Sciences*, *5*(2), 227–230.

Regueria, N. R., & Rodriguez, J. R. (2015). The digital textbook underanalysis: A case study. *Danish University Colleges*, 186.

Reinders, H., & Hubbard, P. (2013). Call and learner autonomy: Affordances and constraints. *Contemporary computer assisted language learning*, 359–375.

Reynolds, T. H., & Bonk, C. J. (1996). Facilitating college writers' revisions within a generative-evaluative computerized prompting framework. *Computers and Composition*, *13*(1), 93–108.

Richards, J. C., et al. (2001). *Curriculum development in language teaching*. Cambridge university press.

Richards, J. C., & Schmidt, R. W. (2013). *Longman dictionary of language teaching and applied linguistics*. Routledge.

Richards, J. C., Richards, J. C., & Renandya, W. A. (2002). *Methodology in language teaching: An anthology of current practice*. Cambridge university press.

Rivers, D. J. (2009). Utilizing the quick response (qr) code within a japanese efl environment. *The Jalt CALL Journal*, *5*(2), 15–28.

Rivers, W. M., & Temperley, M. S. (1978). *A practical guide to the teaching of english as a second or foreign language.* ERIC.

Rodrigues, D. (1985). Computers and basic writers. *College Composition and Communication*, *36*(3), 336–339.

Rosa, J. P. O. D., & Vital, R. A. D. (2016). The use of facebook in argumentative writing: Towards an instructional design model. *AsTEN Journal of Teacher Education*, *1*(2).

Rybushkina, S., & Krasnova, T. (2015). Key factors to use blended learning in teaching foreign languages in russian engineering universities. *Edulearn15 Proceedings*, 6886–6892.

Sachs, R., & Polio, C. (2007). Learners'uses of two types of written feedback on a l2 writing revision task. *Studies in Second Language Acquisition*, *29*(1), 67–100.

Sadeghi, A. R., & Ghorbani, S. (2017). The impact of ted-vodcast on iranian efl learners' academic oral proficiency. In *Multiculturalism and technology-enhanced language learning* (pp. 80–96). IGI Global.

Sadler, R., Dooly, M., Thomas, M., Reinders, H., & Warschauer, M. (2013). Language learning in virtual worlds: Research and practice. *Contemporary computer-assisted language learning*, 159–182.

Salavatizadeh, M., & Tahriri, A. (2020). The effect of blended online automated feedback and teacher feedback on efl learners' essay writing ability and perception. *Teaching English as a Second Language (Formerly Journal of Teaching Language Skills)*, *39*(3.2), 181–225.

Sandberg, J., Maris, M., & De Geus, K. (2011). Mobile english learning: An evidence-based study with fifth graders. *Computers and Education*, *57*(1), 1334–1347.

Sauro, S. (2012). L2 performance in text-chat and spoken discourse. *System*, *40*(3), 335–348.

Scardamalia, M., & Bereiter, C. (1994). Computer support for knowledge-building communities. *The journal of the learning sciences*, *3*(3), 265–283.

Schoonen, R., Gelderen, A. v., Glopper, K. d., Hulstijn, J., Simis, A., Snellings, P., & Stevenson, M. (2003). First language and second language writing: The role of linguistic knowledge, speed of processing, and metacognitive knowledge. *Language learning*, *53*(1), 165–202.

Schultz, J. M., Warschauer, M., & Kern, R. (2000). Computers and collaborative writing. *Network-based language teaching: Concepts and practice*, 121–150.

Seliem, S., & Ahmed, A. (2009). Missing: Electronic feedback in egyptian efl essay writing classes. *Online Submission*.

Selwyn, N. (2011). In praise of pessimism-the need for negativity in educational technology. *British Journal of Educational Technology*, *42*(5), 713–718.

Selwyn, N. (2016). *Education and technology: Key issues and debates*. Bloomsbury Publishing.

Sethy, S. S. (2008). Distance education in the age of globalization: An overwhelming desire towards blended learning. *Turkish Online Journal of Distance Education*, *9*(3), 29–44.

Shams-Abadi, B. B., Ahmadi, S. D., & Mehrdad, A. G. (2015a). The effect of edmodo on efl learners' writing performance. *International Journal of Educational Investigations*, *2*(2), 88–97.

Shams-Abadi, B. B., Ahmadi, S. D., & Mehrdad, A. G. (2015b). The effect of edmodo on efl learners' writing performance. *International Journal of Educational Investigations*, *2*(2), 88–97.

Shang, H.-F. (2022). Exploring online peer feedback and automated corrective feedback on efl writing performance. *Interactive Learning Environments*, *30*(1), 4–16.

Shariffuddin, S. A., Shaaidi, W. R. W., & Hashim, S. M. (2017). Social networks as instructional tools beyond a classroom. *International Journal of Advanced and Applied Sciences*, *4*(12), 185–192.

Sharma, P., & Barrett, B. (2008). *Blended learning: Using technology in and beyond the language classroom*. Macmillan.

Sheet, M. M. (2019). Investigating the effectiveness of blended learning programs on developing the writing skills of university students.

Shermis, M. D., Raymat, M. V., & Barrera, F. (2003). Assessing writing through the curriculum with automated essay scoring.

Shintani, N. (2016). The effects of computer-mediated synchronous and asynchronous direct corrective feedback on writing: A case study. *Computer Assisted Language Learning*, *29*(3), 517–538.

Shintani, N., & Ellis, R. (2013). The comparative effect of direct written corrective feedback and metalinguistic explanation on learners' explicit and implicit knowledge of the english indefinite article. *Journal of second language writing*, *22*(3), 286–306.

Silva, T. (1990). Second language composition instruction: Developments, issues, and directions in esl. *Second language writing: Research insights for the classroom*, *11*, 23.

Sim, J., & Wright, C. (2000). *Research in health care: Concepts, designs and methods*. Nelson Thornes.

Singh, H., Reed, C., et al. (2001). A white paper: Achieving success with blended learning. *Centra software*, *1*, 1–11.

Smart, K. L., & Cappel, J. J. (2006). Students' perceptions of online learning: A comparative study. *Journal of Information Technology Education: Research*, *5*(1), 201–219.

Snodin, N. S. (2013). The effects of blended learning with a cms on the development of autonomous learning: A case study of different degrees of autonomy achieved by individual learners. *Computers & Education*, *61*, 209–216.

Spiliotopoulos, V. (2011). Towards a technology-enhanced university education. In *Blended learning across disciplines: Models for implementation* (pp. 1–16). IGI Global.

Staker, H., & Horn, M. B. (2013). Blended learning in the k–12 education sector. In *Blended learning* (pp. 309–325). Routledge.

Stanley, J. (1992). Coaching student writers to be effective peer evaluators. *Journal of second language writing*, *1*(3), 217–233.

Starkey, L. B. (2004). *How to write great essays*. LearningExpress.

Storch, N., & Wigglesworth, G. (2010). Learners'processing, uptake, and retention of corrective feedback on writing: Case studies. *Studies in second language acquisition*, *32*(2), 303–334.

Strauss, V. (2016). Teacher: A one-size-fits-all approach to instruction is stifling our classrooms. *The Washington Post*.

Strobl, C. (2014). Affordances of web 2.0 technologies for collaborative advanced writing in a foreign language. *Calico Journal*, *31*(1), 1–18.

Subhi, T. (1999). Attitudes toward computers of gifted students and their teachers. *High Ability Studies*, *10*(1), 69–84.

Sujannah, W. D., Cahyono, B. Y., & Astuti, U. P. (2020). Effect of blended learning using google classroom on writing ability of efl students across autonomy levels. *Teaching English with Technology*, *20*(2), 82–97.

Sun, Y.-C., & Chang, Y.-j. (2012). Blogging to learn: Becoming efl academic writers through collaborative dialogues. *Language Learning and Technology*, *16*(1), 43–61.

Svensson, P. (2003). Virtual worlds as arenas for. *Language learning online: Towards best practice*, *3*, 123.

Tafazoli, D., María, E. G., & Abril, C. A. H. (2019). Intelligent language tutoring system: Integrating intelligent computer-assisted language learning into language education. *International Journal of Information and Communication Technology Education (IJICTE)*, *15*(3), 60–74.

Tajeddin, Z., Alemi, M., & Kamrani, Z. (2020). Functions and strategies of teachers' discursive scaffolding in english-medium content-based instruction. *Iranian Journal of Language Teaching Research*, *8*(3 (Special Issue)), 1–24.

Thomas, M. (2009). *Handbook of research on web 2.0 and second language learning*. IGI Global.

Thongmak, M. (2013). Social network system in classroom: Antecedents of edmodo© adoption. *Journal of E-learning and Higher Education*, *2013*(1), 1–15.

Tinio, V. L., et al. (2003). Ict in education.

Tolosa, C., East, M., & Villers, H. (2013). Online peer feedback in beginners' writing tasks: Lessons learned. *IALLT Journal of Language Learning Technologies*, *43*(1), 1–24.

Tomlinson, B., & Whittaker, C. (2013). Blended learning in english language teaching. *London: British Council*.

Tribble, C. (1996). Writing oxford university press.

Turnbull, D., Chugh, R., & Luck, J. (2021). The use of case study design in learning management system research: A label of convenience? *International Journal of Qualitative Methods*, *20*, 16094069211004148.

Tuzi, F. (2004). The impact of e-feedback on the revisions of l2 writers in an academic writing course. *Computers and composition*, *21*(2), 217–235.

Valenti, S., Neri, F., & Cucchiarelli, A. (2003). An overview of current research on automated essay grading. *Journal of Information Technology Education: Research*, *2*(1), 319–330.

Vallarino, M., Iacono, S., Zolezzi, D., & Vercelli, G. V. (2022). Online peer instruction on moodle to foster students' engagement at the time of covid-19 pandemic. *IEEE Transactions on Education*.

Van den Bergh, H., & Rijlaarsdam, G. (2007). The dynamics of idea generation during writing: An online study. *Studies in writing*, *20*, 125.

Van der Pol, J., Van den Berg, B., Admiraal, W. F., & Simons, P. R.-J. (2008). The nature, reception, and use of online peer feedback in higher education. *Computers and Education*, *51*(4), 1804–1817.

Vinagre, M., & Muñoz, B. (2011). Computer-mediated corrective feedback and language accuracy in telecollaborative exchanges. *Language Learning and Technology*, *15*(1), 72–103.

Vurdien, R. (2012). Enhancing writing skills through blogs in an efl class. *The EUROCALL Review*, *20*(1), 156–159.

Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.

Walqui, A. (2006). Scaffolding instruction for english language learners: A conceptual framework. *International journal of bilingual education and bilingualism*, *9*(2), 159–180.

Wang, T., & Jiang, L. (2015). Studies on written corrective feedback: Theoretical perspectives, empirical evidence, and future directions. *English Language Teaching*, *8*(1), 110–120.

Wang, Y.-J., Shang, H.-F., & Briody, P. (2013). Exploring the impact of using automated writing evaluation in english as a foreign language university students' writing. *Computer Assisted Language Learning*, *26*(3), 234–257.

Wang, Y.-C. (2014). Using wikis to facilitate interaction and collaboration among efl learners: A social constructivist approach to language teaching. *System*, *42*, 383–390.

Ware, P., & O'Dowd, R. (2008). Peer feedback on language form in telecollaboration. *Language Learning and Technology*, *12*(1), 43–63.

Warschauer, M., & Grimes, D. (2008). Automated writing assessment in the classroom. *Pedagogies: An International Journal*, *3*(1), 22–36.

Warschauer, M., & Healey, D. (1998). Computers and language learning: An overview. *Language teaching*, *31*(2), 57–71.

Warschauer, M., Kern, R., et al. (2000). *Network-based language teaching: Concepts and practice*. Cambridge university press.

Warschauer, M., & Ware, P. (2006). Automated writing evaluation: Defining the classroom research agenda. *Language teaching research*, *10*(2), 157–180.

Weber, I., Gramoli, V., Ponomarev, A., Staples, M., Holz, R., Tran, A. B., & Rimba, P. (2017). On availability for blockchain-based systems. *2017 IEEE 36th Symposium on Reliable Distributed Systems (SRDS)*, 64–73.

Weigle, S. C. (2002). *Assessing writing*. Cambridge University Press.

Weir, C. J., & Roberts, J. (1994). Evaluation in elt.

White, C., & Reinders, H. (2010). The theory and practice of technology in materials development and task design. Cambridge University Press.

White, R., & Arndt, V. (1991). *Process writing*. Longman London.

Wichadee, S. (2013). Peer feedback on facebook: The use of social networking websites to develop writing ability of undergraduate students. *Turkish Online Journal of Distance Education*, *14*(4), 260–270.

Wichadee, S. (2017). A development of the blended learning model using edmodo for maximizing students' oral proficiency and motivation. *International Journal of Emerging Technologies in Learning (Online)*, *12*(2), 137.

Wilder, H., & Mongillo, G. (2007). Improving expository writing skills of preservice teachers in an online environment. *Contemporary Issues in Technology and Teacher Education*, *7*(1), 476–489.

Williams, J. D. (2014). *Preparing to teach writing: Research, theory, and practice*. Routledge.

Woodworth, J., & Barkaoui, K. (2020). Perspectives on using automated writing evaluation systems to provide written corrective feedback in the esl classroom. *TESL Canada Journal*, *37*(2), 234–247.

Wu, W.-C. V., Petit, E., & Chen, C.-H. (2015). Efl writing revision with blind expert and peer review using a cmc open forum. *Computer Assisted Language Learning*, *28*(1), 58–80.

Xu, Q., & Peng, H. (2017). Investigating mobile-assisted oral feedback in teaching chinese as a second language. *Computer Assisted Language Learning*, *30*(3-4), 173–182.

Yaga, D., Mell, P., Roby, N., & Scarfone, K. (2019). Blockchain technology overview. *arXiv preprint arXiv:1906.11078*.

Yang, T. (2019). Ict technologies standards and protocols for active distribution network. In *Smart power distribution systems* (pp. 205–230). Elsevier.

Yang, Y. (2010). Computer-assisted foreign language teaching: Theory and practice. *Journal of Language Teaching and Research*, *1*(6), 909.

Yang, Y.-F. (2012). Blended learning for college students with english reading difficulties. *Computer Assisted Language Learning*, *25*(5), 393–410.

Yao, C. (2017). A case study on the factors affecting chinese adult students' english acquisition in a blended learning environment. *International Journal of Continuing Engineering Education and Life Long Learning*, *27*(1-2), 22–44.

Yaqoob, S., Khan, M. M., Talib, R., Butt, A. D., Saleem, S., Arif, F., & Nadeem, A. (2019). Use of blockchain in healthcare: A systematic literature review. *International Journal of Advanced Computer Science and Applications*, *10*(5).

Yen, C.-J., & Liu, S. (2009). Learner autonomy as a predictor of course success and final grades in community college online courses. *Journal of Educational Computing Research*, *41*(3), 347–367.

Yim, S., & Warschauer, M. (2017). Web-based collaborative writing in l2 contexts: Methodological insights from text mining. *Language Learning and Technology*, *21*(1), 146–165.

Zaghlool, Z. D. (2020). The impact of using call online writing activities on efl university students' writing achievement. *Theory and Practice in Language Studies*, *10*(2), 141–148.

Zamel, V. (1983). The composing processes of advanced esl students: Six case studies. *TESOL quarterly*, *17*(2), 165–188.

Zhang, Z. V., & Hyland, K. (2018). Student engagement with teacher and automated feedback on l2 writing. *Assessing Writing*, *36*, 90–102.

Zhao, Y. (2003). Recent developments in technology and language learning: A literature review and meta-analysis. *CALICO journal*, 7–27.

Zheng, B., & Warschauer, M. (2017). Epilogue: Second language writing in the age of computer-mediated communication. *Journal of Second Language Writing*, *36*, 61–67.

Ziegler, N. (2016). Synchronous computer-mediated communication and interaction: A meta-analysis. *Studies in Second Language Acquisition*, *38*(3), 553–586.

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary educational psychology*, *25*(1), 82–91.

Appendix A

pre-test/post test.

A.1 Pre-test

A.1.1 Activity One

Combine the following sentences to create coherence by using transition expressions: **In contrast/ nevertheless/ Previously/ Therefore/ For example/ Moreover**

1. I want to study in Italy for a year to learn about art. I enrolled in Italian classes.

2. Learning a foreign language takes a lot of patience and effort. It helps to have a good ear.

3. The college student was told to revise her essay a third time. She whas still made progress with her writing skills.

4. John Steinbeck, a famous American author, wrote many books concerning the human conditions. His novel the Grapes of Wrath dealt with the problems of the Great Depression.

5. Academic writing requires a knowledge of standard grammar, sophisticated vocabulary and proper organization. Email messages use abbreviations, symbols and slang.

6. Nowadays research is often done on the internet. Important is stored in a special film called microfiche.

A.1.2 Activity Two

A/ Put these sentences in the correct order for the introduction to an essay with this title: *Compare two methods of teaching prepositions and explain which one is more successful.*

1. Such language differences make teaching of this area very difficult.

2. Another method takes a cognitive linguistics approach, in which prepositions are studied in relation to spatial relationships.

3. Using prepositions correctly in English is very difficult if English is not a person's first language.

4. The essay which follows gives a brief history of prepositional theory and compares the traditional and cognitive linguistics approaches, arguing that a cognitive linguistics approach helps students to understand the concepts underlying prepositions and so is more effective in helping students to use prepositions correctly.

5. Prepositions are small connecting words that do not necessarily exist in other languages, or may not have exactly the same meanings.

6. One popular teaching method relies on students learning combinations of nouns and prepositions.

A/ Put these sentences in the correct order for the conclusion to an essay with this title: *Compare two methods of teaching prepositions and explain which one is more successful.*

1. Spatial relationships, however, may differ from one language to another, and so this method is not completely effective.

2. By studying spatial relationships, students appear to remember prepositions more accurately than they do using the traditional memorisation method.

3. Nevertheless, the cognitive linguistic approach appears to be useful for many students and it is recommended that researchers study this approach further to see whether it is applicable for students with different language backgrounds and at different levels of language study.

4. This essay has argued that a cognitive linguistics perspective is more effective than simple memorisation in helping students to remember noun and preposition combinations.

A.1.3 Activity Three

The world Health Organization (WHO) declared the corona virus as a global pandemic and since then, the illness it causes known as Covid 19, has spread to nearly every country in the world. Since then, many changes occurred in the globe.

Write a five paragraph essay of how covid 19 changed your country's policy in terms of economy, health care and education.

A.2 Post-test

A.2.1 Activity One

Read the following essay introduction and answer the questions below

Over the last two decades, the demand from consumers for organic foods has increased tremendously. In fact, the popularity of organic foods has exploded significantly with consumers, spending a considerably higher amount of money on them as compared to the amount spent on inorganic foods or Genetically Modified Foods (GMFs). The global market noted an increase in sales of more than 10% between 2014 and 2015. By definition, organic foods are those that are grown without any artificial chemical treatment or any treatment by use of other substances that have been modified genetically, such as hormones and/or antibiotics. The increase in

demand for organic foods is not surprising as several scientific studies proved that they are safer, taster, healthier, and present less risk or environmental pollution.

1. What is the type of this introduction?
2. Pick out the thesis statements and study its effectiveness, justifying your answer?
3. According to the thesis statement, is the author going to compare or contrast?
4. What does the thesis statement suggest about the type of body paragraphs' arrangement?
5. Suggest possible topic sentences that are related to the thesis statement.

A.2.2 Activity Two

Edit the following paragraphs for errors in parallel structure and other sentence problems.

The United States: Melting Pot or Salad Bowl?

The United States counts its population every 10 years, and each census reveals that the racial and ethnic mix is changing dramatically, so by the year 2050, the "average" person in the United States will not be descended from Europeans, but the majority of U.S. residents will trace their ancestry to Africa, Asia, the Hispanic world, the Pacific Islands, or the Middle East. 0nce the United States was a microcosm of European nationalities, today the United States is a microcosm of the world. The United States is no longer considered a "melting pot" society by many of its residents. Instead, many people prefer the term "salad bowl." They use this term to describe U.S. society. U.S. society will

soon be predominantly nonwhite. "Melting pot" implies that the different ethnic groups blend together into one homogeneous mixture, "salad bowl" implies that nationalities, like the ingredients in a mixed green salad, retain their cultural identities.

Earlier generations of immigrants believed that they had to learn English quickly not only to survive but also for success. Now, many immigrant groups do not feel

the same need. Because there are many places in the United States where you can work, shop, get medical care, marry, divorce, and die without knowing English. For example, Chinatown in San Francisco and New York. Also, Los Angeles has many Vietnamese immigrants and immigrants from Mexico. In addition, many immigrant groups want their children to know their own culture. Many Hispanics, for instance, want their children to learn both English and study the Spanish language in school. They are fighting for the right to bilingual education in many communities. In many communities they are in the majority.

A.2.3 Activity Three

Write a well structured, coherent essay about **ONE** of the following topics:

1. Some people think that learning online is more efficient. However, according to others, studying from books is still the preferred method. Which is the best method of learning out of the two?

2. In today's very competitive world, a worker has to possess multiple skills to succeed. Among the skills that a worker should possess, which skill do you think is more important, social skills or good qualifications? Explain the reasons and provide specific examples to support your answer.

Appendix B

Pre experiment questionnaire

This questionnaire is a part of a Phd research work. It aims at gathering information about the students writing experience, their attitude towards it, and what are some ways that could enhance their interest and motivation in the latter. The information you will provide in this questionnaire is vital for the current study. Please take the appropriate answer ✓ or provide explanations/comments wherever required.

We thank you in advance for taking part in this study

Mrs. Cheriguene Anissa

B.1 Section One: The Online Learning Experience

B.1.1 How did you find the distant learning experience? (moodle)

.....

B.1.2 Did you easily get access to your moodle account?

(a) Yes

(b) No

B.1.3 How did you find the lessons?

(a) Well explained

(b) Not so well explained

(c) Both

B.1.4 Did you face any difficulties in understanding your online lessons?

(a) Yes

(b) No

(c) Sometimes

B.2 Section Two: Writing Abilities

B.2.1 How do you describe your writing level?

(a) Good

(b) Average

(c) Below average

B.2.2 You think it is necessary to master the writing skill because

(a) It is a basic skill

(b) It helps in producing different types of texts (Expository, cause and effect..) and genres

(c) It helps in improving the grades of the other modules

(d) It is important to succeed

(e) Other reasons

B.2.3 Is it difficult for you to write in English?

(a) Yes

(b) No

(c) Depends on the topic

B.2.4 If you find difficulty while writing, which of the following aspects do you consider the most problematic?

(a) Finding the appropriate idea

(b) Organizing ideas

(c) Choosing the appropriate mode of essay development

(d) Vocabulary choice

(e) Grammar correctness

(f) Mechanics (Punctuation, spelling, paraphrasing...)

B.2.5 Which stage in the writing process is the hardest for you? (more than one answer is possible)

(a) Planning or brainstorming

(b) Drafting (linking ideas to make up paragraphs, using cohesive devices and so on..)

(c) Revising (checking for unity, coherence)

(d) Finding and correcting errors

B.2.6 How often do you practice writing in the classroom?

(a) Often

(b) Not so often

(c) Sometimes

(d) Rarely

B.2.7 How often do you receive feedback on your written productions from your teacher?

(a) Often

(b) Not so often

(c) Sometimes

(d) Rarely

B.2.8 What kind of teaching material does your teacher of writing use in the classroom?

(a) Printed handouts/textbooks

(b) Printed texts

(c) Videos

(d) Powerpoint presentations

(e) Others

B.2.9 Would you like to be introduced to some desktop or phone applications that will facilitate your writing process?

(a) Yes

(b) No

B.3 Section Three: Learning Preferences

B.3.1 In learning to write, you prefer to

(a) Work individually

(b) Work within a group or a pair in the classroom

(c) Write freely on free topics of your own choice (without teacher's guidance)

(d) Do tasks under the teacher's supervision rather than writing at home

B.3.2 Do you like the topics suggested by your teacher?

(a) Yes

(b) No

(c) Sometimes

If no, please why?

B.3.3 Do you easily learn from:

(a) Things you see in the forms of images, videos, charts, graphic organizers...

(b) Things you hear such as lectures, discussions,..

(c) Things you read and write

(d) Things you can feel, hold, or grasp (such as concrete simulations, and experiences)

B.3.4 During the session of writing you feel:

(a) Engaged

(b) Bored

(c) Depending on the studied topic

B.4 Section Four: Students' acquaintance with ICTs

B.4.1 As a student of FL, do you feel that technological devices (computers, web 0.2, mobiles..and so on) are helpful in your learning process?

(a) Yes

(b) No

B.4.2 Do you think that ICTs' should be incorporated into EFL programs as much as possible in Algerian institutions?

(a) Yes

(b) No

B.4.3 What tools among these do you consider most helpful in your leaning process:

(a) Facebook

(b) Moodle

(c) Youtube

(d) Zoom/Google Meet

(e) Others:.....

Appendix C

Learner Autonomy Checklist (adopted from : Sujannah, Cahyono & Astuti, 2020)

Direction: For each statement, please put a tick (√) in the column showing your attitude towards the statement. The meaning of the options are as follows: SA (Strongly Agree), A(Agree), D (Disagree) and SD (Strongly Disagree)

(A) Evaluation of English teacher's aims

NO	**Statements**	**SA**	**A**	**D**	**SD**
1	I clearly understand the teacher's aims in teaching writing.				
2	It is easy for me to make the teacher's goals in teaching writing into my own goals.				
3	I clearly understand the importance of making the teacher's goals in teaching writing into my own goals as well as studying hard to achieve those goals.				
4	I clearly understand the teacher's intention during the teaching and learning activities in writing.				
5	In class, it is easy for me to keep up with the teacher's pace during the teaching and learning activities in writing.				

(B) Evaluation of establishing study goals

6	When learning writing, I establish practical goals for myself based on my true English level.				
7	I am good at establishing study goals in learning writing based on the requirements outlined by the teacher.				

8	Outside of assignments given by the teacher, I have a clear plan for studying on my own to improve my writing ability.				
9	I am good at adjusting my study plans in learning writing based on my progress.				
10	I am good at creating a practical study schedule in learning writing for myself.				

(C) Evaluation of establishing study plans

(D) Evaluation of learning strategies' implementation

11	I understand the learning strategies to improve my writing ability.				
12	I can consciously employ brainstorming to improve my writing ability.				
13	I can consciously employ clustering to improve my writing ability.				
14	I can consciously employ outlining to improve my writing ability.				

(E) Evaluation of ability to monitor the usage of learning strategies

(F) Evaluation of English learning process

15	I can consciously monitor the use of brainstorming during writing.				
16	I can consciously monitor the use of clustering during writing.				
17	I can consciously monitor the use of outlining during writing.				
18	I am able to find and solve problems in my method of study to improve my writing ability.				
19	I am conscious of whether or not my method of study to improve my writing ability is practical.				
20	If I realize that my method of study to improve my writing ability is impractical, I quickly find a more suitable one.				

21	Outside of class, I practice my writing by writing a blog.				
22	Outside of class, I practice my writing by making a writing journal.				
23	I make an effort to overcome my anxiety that may hinder my writing improvement.				
24	I make an effort to overcome my laziness that may hinder my writing improvement.				
25	I use library to improve my writing ability.				
26	I use internet to improve my writing ability.				
27	I use dictionary to improve my writing ability.				
28	I often learn writing with other people by practicing writing with classmates.				
29	I often learn writing with other people by practicing peer reviewing with classmates.				
30	It is easy for me to put newly learned vocabularies into my writing.				
31	While practicing writing, I am able to realize my own mistakes.				
32	While practicing writing, I am able to correct my own mistakes.				
33	When I discover my mistakes in writing, I understand the underlying reason for making them is because of interference from my mother tongue.				
34	When I discover my mistakes in writing, I understand the underlying reason for making them is because of a lack of familiarity with grammar rules.				
35	I select effective method to improve my writing ability by keeping a writing journal.				
36	I select effective method to improve my writing ability by updating a writing blog.				
37	During the process of completing a certain writing task, I keep in line with my predetermined plan.				
38	During the process of completing a certain writing task, I often check and correct my comprehension of previously studied material.				

Appendix D

Students' Drafts Before and After Automated Assessment and Peer Feedback

Automated Feedback —- Peer Feedback

D.1 Student Draft I

The Computer's Effect on our Lives.

D.1.1 Before edition

The computer changed human life two decades ago Now it is a necessity to use the computer in our daily life activities that are based on such online services and products, With the amenities of the everchanging and improving world of computer technology. The computer has had a significant impact on the way the world is perceived in many ways including communication and education.

To start with,The computer has a detrimental effect on the way people communicate. First, computers can bring people closer together and facilitate contact between them: It helps them stay connected with friends and relatives through emails, chat rooms, and social media for instance before people had to write letters to message one another and that would take weeks or even months. Today one can type an email and send it in under a minute.

Second,Computers play a massive makeover in education in many ways for students, they can search for any information related to their studies in a second. For teachers as well, it can help them to enhance the impact of their lessons.in addition, it helps students to understand new methods of learning, for example, students can use computers for writing their assignments or projects…Etc

To sum up, the computer has become very beneficial both on communication and education sector. As it spread widely in every area, it has become part and parcel of our daily lives. Without computer, the world would have been very boring and unfeeling.

D.1.2 After edition

The computer changed human life two decades ago . Now it is a necessity to use the computer in our daily life activities that are based on such online services and products, with the amenities of the ever-changing and improving world of computer technology. The computer has significantly impacted the way we perceive the world in many ways ,including communication and education.

- Unfocused introduction.
- Hard to follow.
- There's no hook or any background information.
- Incoherent.
- Poor punctuation.
- Unclear thesis.

~~To start with~~, The computer has a detrimental effect on the way people communicate . First, computers can bring people closer together and facilitate contact between them: It helps them stay connected with friends and relatives through emails, chat rooms, and social media. For instance, before people had to write letters to message one another and that would take weeks or even months. Today, one can type an email and send it in within a minute.

- Undeveloped; It needs more supporting sentences and evidence.
- Poor punctuation and word choice.

- There's no concluding sentence.

Second, computers play a massive makeover in education in many ways for students. They can look for any information related to their studies in a second. Moreover, it can help teachers to enhance the impact of their lessons. In addition, it allows also students to understand new methods of learning. For example, students can use computers for writing their assignments or projects ~~...etc~~

Missing paragraph (The impact of computers on people's perception of the world.)

To sum up, the computer has become very beneficial in communication and the education sector. As it spread widely in every area, it has become part and parcel of our daily lives .Without computers, the world would have been very dull and lifeless.

D.2 Student Draft II

" The effects of Computer in our lives "

D.2.1 Before edition

Technology has become essential to our daily routine .There are various types of technological tools such as computers. Computers has affected our life in many ways ; they affected the way we study, the way we spend our time at home and the way we communicate with others.

To begin with ,Computers are among the most valuable resources in classrooms for both teachers and students. It is worth mentioning that computers have revolutionized the teaching profession in multiple ways .First, teachers use computers to record grades ,calculate averages ,manage attendance and access data on students performance or to make online assignments. Second,students also use computers for many purposes because computers provide access to such a huge variety of information while students of the past had to rely on text books .These days information can be found quickly and easily online. And,Assignments can also be completed online.Furthermore, college students who are keen to improve their

qualifications ,skills and knowledge in order to thrive their career prospects need computers to work on it.

Moreover , No one can deny the necessity of having a computer at home .Using computers at home depends on the aim people are using them either to do online business ,listening to songs and podcasts and to watch movies ...etc.Actually, computers at home has many advantages like accessing banking and business services from home .Learning new skills and hobbies.,getting to know the outside world's news and making online friends from all over the world just from home . Besides using computers in classrooms and homes .

Using computers has also affected our communication skills .it is no secret that computer can bring people closer together and facilitate contacts between them using Email, Chatting, Videoconferencing, Mobile Phones and Social Medias. It saves time, efforts and money compared with letters used, before making influence of computers in human life. Accordingly, computer hasten our needs and made them easy to to accomplish from home ,to Classrooms and also to develop our communication skills .Thus ,Computer has become importance element in the life of the individual of all ages and in all fields.

D.2.2 After edition

Technology has become essential to our daily routine .There are various types of technological tools , such as computers. Computers have affected our lives in many ways ; they affected the way we study, the way we spend our time at home and the way we communicate with others.

- Unclear topic sentence.
- Faulty sentences.
- Poor punctuation.
- Misused transition words.
- No concluding sentence.

To begin with , c omputers are among the most valuable classroom resources for both teachers and students. It is worth mentioning that computers have revolutionized the teaching profession in multiple ways .First, teachers use computers to record grades ,calculate averages ,manage attendance and access data on students performance or ~~to~~ make online assignments. Second, students also use computers for many purposes because computers provide access to such a vast variety of information , while students of the past had to rely on text books .These days information can be found quickly and easily online. And, a ssignments can also be completed online. Furthermore, college students who are keen to improve their qualifications ,skills and knowledge ~~in order~~ to thrive their career prospects need computers to work on it .

- Unclear topic sentence.
- Unfocused paragraph, it lacks both unity and coherence.
- Hard to follow.
- Fragments.

Moreover , n o one can deny the necessity of having a computer at home .Using computers at home depends on the aim people are use them either to do online business , listen to songs and podcasts and to watch movies ...etc. Actually, computers at home have many advantages like accessing banking and business services from home .Learning new skills and hobbies ,getting to know the outside world's news and making online friends from all over the world just from home beside s using computers in classrooms and homes .

Using computers have also affected our communication skills . It is no secret that computer can bring people closer together and facilitate contacts between them using Email, Chatting, Videoconferencing, Mobile Phones and Social Medias. It saves time, effort and money compared with letters used, before making influence of computers in human life. Accordingly, compute rs hasten our needs and make them easy to ~~to~~ accomplish from home ,to Classrooms and also to develop our communication skills .Thus ,Computer has become importance element in the lives of individuals of all ages and in all fields

There's no conclusion!

ملخص

أدى تفشي كوفيد-19 إلى حملة عالمية غير مسبوقة نحو التعليم عن بُعد عبر الإنترنت. في معظم الأوساط التعليمية، خضع المعلمون والطلاب لانتقال عشوائي إلى التعليم عبر الإنترنت بموارد و تخطيط محدود. ومع ذلك، على الرغم من التحديات المرتبطة به، فقد أدى تفشي كوفيد-19 إلى ظهور العديد من الفرص لمعلمي اللغة لتجربة تقنيات التعلم عبر الإنترنت وجمع خبرات مفيدة لإدراجهم في نهاية المطاف في تعليم اللغة .نجري في هذا العمل دراسة تجريبية قبلية في فترة ما بعد الكوفيد حيث نحاول وصف نموذج التعلم المدمج المبني على طريقة السنادات (السقالات) التعليمية لتعليم مادة الكتابة باستخدام منصة Edmodo لطلاب السنة الثالثة المنتمين للمدرسة العليا للأساتذة بالأغواط .تعتمد هذه الدراسة على الوصف الثلاثي لنموذج السقالات الذي قدمه هولتون وكلارك (2006) والذي يتمحور حول السقالات المحترفة (مقدمة من طرف الاستاذ) المتبادلة والسقالات الذاتية. لتقديم هذا الأخير في بيئة تعلم مدمجة. تم تصميم مرحلتين لخدمة أغراض الدراسة: تتمحور المرحلة الأولى حول سقالات مقدمة من طرف الاستاذ الباحث , بينما تركز المرحلة الثانية على السقالات المتبادلة والذاتية، وتكمن الاختلافات الرئيسية بين المرحلتين في التوقيت وأدوات البحث والأهداف الفرعية.في المرحلة الأولى التي استمرت ستة أسابيع، اختار الباحث نموذج ADDIE كتصميم تعليمي. وكانت أدوات البحث الرئيسية هي الاستبيان للتجربة القبلية، الاختبارات القبلية والبعدية، قائمة مرجعية، واستبيان على منهج ليكرت. بعد المرحلة الأولى التي أثبتت كفاءة Edmodo كبديل محتمل لتقديم درس تعليمي مدمج، تأتي المرحلة الثانية التي تهدف إلى التحقيق في فعالية دمج الملاحظات أو التعليقات سواء الايجابية أو السلبية بطريقة آلية و مع مراجعة الأقران (التقييم، المراجعة، والتحكيم). في المرحلة الثانية من بحثنا، حاولنا تقديم مساعد كتابي آلي Aid) Writing Pro) كأداة تصحيح، وتوفير تدريب على ملاحظات الأقران وإجراء مقابلة شبه تعليمية مع العينة. كما تم استخدام البيانات الكمية في سياق هذا البحث للتحقق من صحة فرضياتنا. تم استخدام test في المرحلة الأولى لحساب متوسط الاختلافات بين الاختبار القبلي والبعدي، كما تم استخدامه في المرحلة الثانية لتسليط الضوء على الاختلافات بين مسودات الطلاب ومسوداتهم قبل وبعد استخدام Aid Writing Pro ومراجعة الأقران. أشارت النتائج إلى أن استخدام منصة Edmodo لتطبيق التعلم المدمج زاد من قدرات الكتابة لطلاب الذين يتمتعون بدرجة عالية من استقلالية التعلم الخاص) اللغة الإنجليزية كلغة أجنبية(أكثر من طلاب الذين يتمتعون بدرجة منخفضة من الاستقلالية.

ثانيًا، وجد أن دمج التوجيهات بطريقة آلية مع ملاحظات الأقران سيساعد في تحقيق نتائج كتابية أفضل بشكل أساسي للمتعلمين ذوي المهارات المنخفضة. في نهاية هذا العمل، نقترح تطورًا تكنولوجيًا جديدًا يُعرف باسم تقنية سلسلة(blockchain الكتل(على أمل توفير حلول لحل مشاكل تعليمية عديدة.

الكلمات المفتاحية : السقالات , التعليم المدمج, التعبير الكتابي, إدمودو Writing Pro , ,ملاحظات نقدية , سلسلة الكتل.

Résumé

L'épidémie de COVID-19 a entraîné un mouvement mondial sans précédent vers l'apprentissage et l'enseignement des langues à distance en ligne. Dans la plupart des contextes éducatifs, les enseignants et les apprenants ont subi une transition désordonnée vers l'enseignement en ligne avec des ressources et une planification limitées. Pourtant, malgré les défis qui lui sont associés, l'épidémie de Covid 19 a offert aux enseignants en langues de nombreuses opportunités d'expérimenter les technologies d'apprentissage en ligne et d'acquérir une expérience utile pour leur intégration éventuelle dans l'enseignement des langues. Dans le présent travail, nous réalisons une étude pré-expérimentale dans l'ère post-Covid 19 qui tente de décrire un modèle d'apprentissage mixte d'étayage pour enseigner le module de la production écrite en utilisant la plateforme Edmodo aux étudiants de troisième année de l'Ens de Laghouat. Cette étude s'appuie sur la description triangulaire du modèle d'échafaudage présenté par Holton et Clark (2006) qui s'articule autour de l'échafaudage expert, réciproque et autonome. Pour présenter ce dernier dans un contexte d'apprentissage mixte, deux phases ont été conçues pour servir les objectifs de l'étude : La première phase est centrée sur l'échafaudage expert tandis que la seconde phase se concentre sur l'échafaudage réciproque et l'auto-échafaudage. Les principales différences entre les deux phases résident dans le déroulement, les outils de recherche et les sous-objectifs. Dans la première phase, qui a duré six semaines, la recherche a opté pour un modèle ADDIE comme conception pédagogique. Les principaux instruments de recherche étaient un questionnaire de pré-expérimentation, des tests pré/post, une checklist de l'autonomie et un

questionnaire à échelle de likert. Après la première phase qui a prouvé l'efficacité d'Edmodo en tant qu'alternative possible pour dispenser un cours d'apprentissage mixte, vient la deuxième phase qui visait à étudier l'efficacité de l'incorporation du feedback automatisé avec l'évaluation par les pairs. Dans la deuxième phase de notre recherche, nous avons essayé d'introduire l'aide à la rédaction Pro Writing Aid comme outil d'édition, de fournir une formation au feedback par les pairs et de réaliser un entretien semi-instructif avec l'échantillon. Des données quantitatives ont également été utilisées au cours de cette recherche pour valider nos hypothèses. Un t-test apparié a été utilisé dans la première phase pour calculer les différences moyennes entre le pré-test et le post-test. Il a également été utilisé dans la deuxième phase pour mettre en évidence les différences entre les brouillons des étudiants et leurs brouillons avant et après l'utilisation du Pro Writing Aid et l'évaluation par les pairs. Les résultats obtenus ont suggéré que l'utilisation d'Edmodo pour exécuter l'apprentissage mixte a augmenté les capacités d'écriture des étudiants hautement autonomes plus que les étudiants moins autonomes. Deuxièmement, il a été constaté que l'incorporation d'un feedback automatisé avec le feedback des pairs aidera à atteindre de meilleurs résultats d'écriture, principalement pour les apprenants peu qualifiés. A la fin de ce travail, nous suggérons un nouveau développement technologique connu sous le nom de technologie blockchain en espérant fournir des solutions pour résoudre des problèmes d'éducation spécifiques.

Mots-clés : Échafaudage, apprentissage hybride, expression écrite, Edmodo, Pro Writing Aid, Feedback, Blockchain