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# **Using Collaborative Blended Learning to Develop Literacy Skills: The Case of First Year EFL Degree Students at University of Algiers 2**

A Thesis submitted to the Department of English in candidacy for the Degree of  
Doctorate in Applied Linguistics and TEFL

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*2020/2021*

## **DECLARATION**

I hereby declare that this thesis is my own work, and it has not been previously submitted by another person or accepted for the qualification of any other degree of a university or other institution. I also certify that the content of the thesis is the result of my own investigation, except where due acknowledgement or reference has been made.

**Ms. Loubna SEBBAH**

**Date: 23/06/2021**

## **DEDICATION**

*To my loving parents, Yahia and Lyakout, whose unlimited support, love and care have strengthened me and enlightened my life*

*To my dear brother, Raouf*

*To all my friends and loved ones*

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## Abstract

Twenty-first century pedagogy has led to the emergence of a variety of novel approaches that aim to foster learner-centeredness, promote the use of technology and develop students' language skills in general and literacy skills in particular. The latter are typically described as highly complex cognitive skills that require explicit strategy instruction and innovative pedagogical approaches to be upgraded. However, despite the Algerian higher education reform, blended learning has not yet gained acclamation in the Algerian university. The ultimate objective of the present doctoral research is to suggest an instructional framework for developing students' literacy skills. It first examines the impact of collaborative blended learning (CBL), which consists of the use of collaborative strategic reading (CSR) and collaborative writing (CW) in class and online learning outside class, on developing students' reading and writing ability and on raising their awareness of the reading and writing processes. It then explores the students' perceptions or views about using such a learning methodology to develop their literacy skills. To this end, a quasi-experimental study involving a mixed-methods design was conducted with 100 subjects enrolled in the department of English at the University of Algiers 2, Algeria in the academic year 2017-2018. The findings, which emerged from the analysis of the test, questionnaires and focus group interview data, demonstrate that the use of CBL proved to be quite effective in developing the students' reading and writing ability and raising their awareness of the reading and writing processes in L2. Moreover, the students revealed positive views of CBL as this promoted peer-mediated learning, fostered iterative scaffolding and feedback, encouraged group work, and provided them with the opportunity to practise literacy skills in and beyond the classroom. Thus, CBL, which was inspired by sociocultural theory tenets, helped to mediate students' learning, scaffold their reading and writing ability and increase their collaboration. This pedagogical framework assumes a paradigm shift from traditional to twenty-first century learning and can be beneficial for English language education in Algeria

**Keywords:** Collaborative blended learning; English in higher education; literacy skills; mediation; scaffolding

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## List of Abbreviations and Acronyms:

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- **AF:** Absolute Frequency
- **BL:** Blended Learning
- **CBL:** Collaborative Blended Learning
- **CSR:** Collaborative Strategic Reading
- **CTR:** Control
- **CW:** Collaborative Writing
- **DF :** Degree of Freedom
- **EFL:** English as a Foreign Language
- **EXP:** Experimental
- **ICTs:** Information and Communication Technologies
- **L2:** Second Language; Foreign Language
- **LMD :** Licence, Master, Doctorate
- **M:** Mean
- **Max:** Maximum
- **Min:** Minimum
- **MOODLE:** Modular Object-oriented Dynamic Learning Environment
- **N:** Number of participants
- **SCORM:** Sharable Content Object Reference Model
- **SD :** Standard Deviation
- **ZPD :** Zone of Proximal Development

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# List of Symbols and Images:

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## Chapter Four

$\bar{x}$ : Mean

$\Sigma$ : Sum of values

$x_i$ : All of the x-values

$\Sigma D$ : Sum of the differences

$\Sigma D^2$ : Sum of the squared differences

$(\Sigma D)^2$ : Sum of the differences, squared

$(\Sigma A)^2$ : Sum of data set A (EXP subjects' scores), squared

$(\Sigma B)^2$ : Sum of data set B (CTR subjects' scores), squared

$\mu_A$ : Mean of data set A

$\mu_B$ : Mean of data set B

$\Sigma A^2$ : Sum of the squares of data set A

$\Sigma B^2$ : Sum of the squares of data set B

$n^A$ : Number of items in data set A

$n^B$ : Number of items in data set B

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# **GENERAL INTRODUCTION**

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## **General Introduction**

With the advent of internet communication technologies, variegated pedagogical approaches have been advanced to set an optimal learning environment for both teachers and students and to meet the objectives of the Algerian University which call for learner-centeredness and active learning. Set in the context of higher education reform in Algeria, blended learning is one of the instructional approaches that can match the LMD system (Licence-Master-Doctorate) objectives through offering a plethora of advantages for developing students' learning outcomes. Its greatest advantage is that it coalesces dual learning contexts, namely face-to-face instruction and online learning, to enable students to extend the period of learning beyond the classroom. Besides, it can help teachers design materials that are tailored to their students' needs and learning styles (Marsh, 2012). Flexibility also seems to be highly emphasized in blended learning through enabling students to have more choice and control over their learning process (in class, at home or elsewhere) unlike the traditional learning environment where students have to attend classes at a fixed date and time (Graham, 2006). In addition, blended learning is based on social networking and collaboration, a very popular and deeply- rooted means of communication among young people today. This can foster student interaction and immerse them in the learning cycle through a process of negotiation, social interaction and exchange of feedback, thereby stressing collaboration over competitiveness. This is why technology can be viewed as a vital tool in the service of learning and students are challenged to use this tool to become producers of knowledge rather than passive recipients and consumers of knowledge.

### **Statement of the Problem:**

One of the innovations that were introduced in the University of Algiers 2 is the LMD system which aims to emphasize the use of technology for learning, foster learner-centeredness and promote the use of innovative pedagogical approaches in the teaching-learning process. However, the type of instruction that is done at the University of Algiers 2 does not always meet the objectives of this higher education system since the instruction provided to EFL students is

still done in a rather traditional way which lacks the use of online learning to supplement and extend students' learning beyond the classroom. It is also a fact that time constraints, large classes and limited opportunities for interaction in the classroom can make literacy skills (also called reading and writing skills) quite challenging for the students to master. Literacy skills, which have been described as highly cognitively demanding skills, are essential at any educational level and for any subject, especially at university because of the type of instruction and evaluation. They also require different interwoven processes to be upgraded. In this perspective, students need an explicit and innovative strategy instruction and opportunities in which they can practise reading and writing in an extensive way. Moreover, they need a learning atmosphere that develops their lower and higher order thinking skills which are necessary for this globalized world.

It is often suggested that success in higher education requires up-to-date instructional approaches that match the transforming world and reinforce the use of technology to gather information, solve problems, and communicate ideas. Therefore, one may suggest that for EFL instruction to be effective within the Algerian university context, literacy skills learning needs to be reconceptualized to meet the changing profile of students and increase their learning, thereby meeting the objectives of the LMD reform. For example, in many places around the world, students communicate through multiple modes. They watch videos to expand and improve their speaking skills, read multimodal texts such as E-books and picture books to improve their vocabulary knowledge and writing skill, produce different PowerPoint slides, write and send emails, participate in online forums, and exchange learning resources. Hence, it can be said that the multimodal nature of learning is considered as part of their everyday life. This signals the importance to bridge the gap between traditional ways of teaching or learning reading and writing and the resources that spark innovation.

Using Collaborative Blended Learning (henceforth, CBL) to develop students' literacy skills in higher education can be crucial. Since it is part of twenty- first century pedagogy, it matches students' twenty first century needs,

and provides them with various modalities and affordances to help them enhance their reading and writing abilities. CBL seems to meet quite adequately the requirements of the globalized epoch.

The basic premise in CBL is collaboration. Shifting the focus from individual efforts to group work and from independence to community has been highly emphasized in the literature. When students engage in collaborative learning, they have the opportunity to internalize learning strategies, negotiate meaning with peers, present and defend their ideas, exchange feedback, and actively engage in constructing knowledge (Vygotsky, 1978). Thus, collaborative learning marks a major shift from the traditional teacher-centered context to a more learner-centered milieu, leading to a vital development of true understanding. Being grounded in Sociocultural Theory, collaborative learning allows students to externalize what they know in interaction and internalize certain skills where knowledge becomes fine-tuned. However, teachers often have insufficient time for class practice and for catering to individual learners' problems. Therefore, integrating collaborative learning can help in matching different levels and learning styles so that students can scaffold one another and connect with more advanced students.

Based on these assumptions, the rationale for combining collaborative learning to face-to-face instruction in the present research is that it can improve interaction and group dynamics, promote students' interdependence, support dialogic talks and raise students' awareness of reading and writing processes.

The present study draws on Socio-Cultural Theory. It focuses on the use of mediation by technology and collaboration. By adopting a Vygotskian socio-cultural perspective, I would like to argue that mediation by technology and collaboration is essential in the learning process for this can alter the entire flow and structure of mental functions and help students gain a deeper understanding of reading and writing skills.

The objective of the current research is threefold:

- (1) To use collaborative blended learning (CBL) as a methodology to enhance students' reading and writing abilities;

(2) To investigate the impact of CBL on raising students' awareness of reading and writing processes; and

(3) To evaluate the effectiveness of CBL through exploring students' perceptions or views about CBL to develop their reading and writing skills.

The use of CBL in return would raise students' awareness of the benefits of technology in enhancing their literacy skills by facilitating the process of learning through scaffolding, collaboration, and mediation. It would widen teachers' vista towards modifying, organizing and developing English language curricula with diverse instructions, techniques and activities based on CBL.

### **Significance of the Study:**

The Algerian educational system, like many others, is experiencing a move towards innovations that are shaped by global perspectives. More and more learners around the world are highly, even hyper, connected to internet technologies and use them to solve all types of everyday problems, and Algeria is no exception. Given this fact, it was felt appropriate to inquire into this issue and examine the use of collaborative blended learning by students at university. CBL can meet the demands of twenty-first-century education and the changing profile of students. It can also enhance students' literacy skills, foster collaboration and scaffolding, and the use of educational technologies may promote student-centered learning and produce a meaningful learning environment. Therefore, the present research is significant insofar as it may bring a change in classroom literacy practices for both teachers and students. Such study may encourage the use of collaborative and online learning for its benefits with respect to EFL students' literacy skills and academic success. This research can also contribute to the knowledge base of pre-service teachers in Algeria as more teachers may opt for CBL as a classroom practice; CBL can raise teachers' awareness of adopting CBL to teach reading and writing skills through revisiting their pedagogical content knowledge to cope with the demands of this globalized epoch. This will increase teachers' understanding that literacy learning through blended learning is a social practice which is fostered by mediation, collaboration and scaffolding, and results in successful learning.

## **Research Questions and Hypotheses:**

The present study aims at answering the following research questions:

Question 1: Does collaborative blended learning (CBL) enhance students' ability to read and write effectively?

Question 2: Does engaging in CBL raise students' awareness of reading and writing processes?

Question 3: What are the students' perceptions of using CBL to develop their reading and writing skills?

In an attempt to answer these questions, three research hypotheses are formulated:

Hypothesis 1: The use of CBL enhances students' ability to read and write effectively.

Hypothesis 2: The use of CBL raises students' awareness of the processes of reading and writing.

Hypothesis 3: Students have positive perceptions of CBL to develop their reading and writing skills.

## **Research Design and Procedure:**

This research is prompted by the desire to investigate how first year EFL students use CBL for developing their literacy skills at the University of Algiers 2. The study is quasi-experimental and is conducted in the second semester of the academic year 2017-2018. Moreover, mixed-methods approach is adopted to collect both quantitative and qualitative data. As Huh and Hu (2006) rightly remark: "Applying mixed methods in a single study seems effective to investigate the impact of computer technology use on language learning, allowing researchers to include both numerical and psychological aspects" (p.19). Also a multi-methods approach can lead to a more comprehensive and thorough understanding of the phenomenon under scrutiny through triangulating results and validating their interpretation (Cohen et al, 2007). Finally, a mixed-

methods approach can be useful to understand the contradictions that might occur between quantitative results and qualitative findings.

This research is cross sectional as it is done within a specified time frame. The sample population for this study involves 100 subjects divided into two groups: 50 experimental subjects and 50 control subjects enrolled in the Department of English of the Faculty of Foreign Languages at the University of Algiers 2 –Abou El Kacem Saadallah.

### **Research Variables:**

The independent variable is “collaborative blended learning” and the three dependent variables are “literacy skills development”, “awareness of reading and writing processes”, and “student perceptions or views about using CBL”.

### **Research Tools:**

The research tools that will be used in this study involve a reading and writing test, three questionnaires, and a focus group interview.

### **Procedure:**

This quasi-experiment, which is conducted at the University of Algiers 2 during the second semester of the academic year 2017-2018, investigates the use of CBL to develop students’ literacy skills. In the pre-treatment phase, a reading and writing pretest is administered to the control and experimental subjects. In addition to the test, a first questionnaire about identifying students’ characteristics (i.e. their profile, learning needs and learning styles) is administered to the experimental subjects only to help the researcher design an e-course using MOODLE platform for the students to use outside the classroom. A second questionnaire about students’ awareness of reading and writing processes is administered twice before and after the testing phase to both experimental and control subjects. The objective of the second questionnaire is to determine the experimental and control subjects’ awareness of the reading and writing processes and the strategies that need to be applied before, during and after reading and writing tasks.

In the treatment phase, the experimental subjects are exposed to collaborative learning, inside the classroom, and online-learning, outside the classroom. The online platform, or more precisely the e-course, is designed by the researcher using MoodleCloud. Being grounded in the Vygotskian view of learning, it can be said that use of technology is considered as a mediational tool which can scaffold students' learning beyond the classroom (Vygotsky, 1978).

In the post-treatment phase, a reading and writing posttest is administered to both experimental and control subjects. In addition to the test, the second questionnaire about awareness of reading and writing processes is administered again to both subjects in order to track any changes that may occur in the participants' answers.

In order to evaluate the effectiveness of CBL on developing students' literacy skills, a third questionnaire is administered to the experimental subjects only. To gain a deeper understanding of students' perceptions, a focus group interview is conducted with ten (10) subjects from the experimental group to find out their perceptions or views of CBL for their reading and writing skills development. The different research instruments that are used in the present study are piloted before their final use.

### **Structure of the Thesis:**

The thesis consists of two parts. Part one is devoted to "Theoretical Considerations" and is divided into three chapters. Chapter One is entitled "Blended Learning in English Language Education". It first tries to define blended learning by setting its development and clarifying related terminology and key concepts. Based on an account of blended learning, its potential to support deep learning and answer students' needs and learning styles will be discussed. Moreover, reviewing the different models for designing a blended learning course will be highlighted. Finally, assessment in blended learning and teacher's and students' roles in the blend will be presented along with the advantages and challenges of adopting blended learning in the learning process.

Chapter Two is entitled “Developing Literacy Skills with a Collaborative Blended Learning Framework”. It begins by laying out the theoretical dimensions of literacy skills, stressing the different strategies that students need to employ in order to achieve successful reading comprehension and good writing production. With a particular reference to sociocultural theory, the roles of collaboration and technology are highlighted through looking at how collaborative blended learning contributes to the development of students’ literacy skills. Hence, the collaborative blended learning framework will be discussed through focusing on its main strategies, namely collaborative strategic reading and collaborative writing, as part of face-to-face instruction, and online learning which will be used beyond the classroom.

Chapter Three is entitled “The Place of Scaffolding, Mediation and Collaboration in Literacy Skills Development”. It first provides an overview of sociocultural theory and learning development. Then it discusses the significance of scaffolding, mediation and collaboration in developing students’ literacy skills. Finally, methods for measuring students’ perceptions are discussed.

Part Two of the thesis deals with “Empirical Research”. It includes three chapters: chapter four, five, and six. Chapter four is called “Research Design and Procedure”. It first describes the research methodology used for the present study including the sample, research design and procedure. It moves to presenting the different research tools used for the study which include a test to find out to whether collaborative blended learning enhances students’ reading and writing ability; three (3) questionnaires to identify students’ characteristics, to investigate the impact of CBL on raising students’ awareness of reading and writing processes and to explore students’ perceptions of using CBL; and a focus group interview addressed to the experimental subjects to unravel their perceptions of using CBL to develop their literacy skills. Then it explains the two methods of analysis. The first method consists of quantitative method to analyze the results obtained from the test and questionnaires. The second involves qualitative method used to analyze the results obtained from the focus group interview.

The aforementioned chapter is followed by Chapter five entitled “Data analysis and presentation of results”. Chapter six is named “Discussion of results”. Chapter Five provides an analysis of the findings obtained from the different research instruments (the reading and writing test, three questionnaires, and focus group interview). Chapter Six discusses the main results of the research and brings answers to the research questions. Based on the findings of the study, it attempts to suggest an instructional framework to teaching literacy skills at university level. The thesis ends up with a general conclusion that consists of a summary of the research findings, limitations, and pedagogical recommendations which provide some suggestions for enhancing students’ literacy skills in higher education through the use of collaborative blended learning to develop literacy skills.

**Operational Definitions:**

For concepts to carry meaning within a research study, they need to be defined in a clear way, or more precisely, be operationalized as constructs (Kalanda, 2005). Concepts can be defined either in a conceptual or operational manner to describe and explain specific contexts in a manner that is related to the study (ibid). The constructs that are used in the present study are explained below:

**Blended learning:** It “is viewed as a pedagogical approach that combines the effectiveness and socialisation opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment” (Dziuban et al., 2004, p. 6). It combines the advantages of face-to-face instruction and technology-enhanced learning.

**Literacy skills:** in the present study, literacy skills are used synonymously with reading and writing skills, and they mean learning how to read and learning how to write.

**Collaboration:** it is a construction of shared understanding through interaction with others, where the participants are committed to or engaged on shared goals and problem solving (Storch, 2013). In the present study, collaboration is

concerned with the way students interact, negotiate meaning, and construct knowledge. It emphasizes the exchange of feedback, scaffolding, and the mediating role of learning tools.

**Mediation:** Lantolf and Thorne (2006) listed three types of mediation: mediation by regulation, mediation by self, and mediation by artifacts (e.g., computers, technology and multimedia). Taking into account the Vygotskian perspective and considering the taxonomy of mediation provided by Lantolf and Thorne (2006), this study focuses on mediation by regulation and by artifacts.

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**PART ONE:**  
**THEORETICAL**  
**CONSIDERATIONS**

**CHAPTER 1:**

**BLENDED LEARNING IN**  
**ENGLISH LANGUAGE**  
**EDUCATION**

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## **Part One: Theoretical Considerations**

### **Chapter 1: Blended Learning in English Language Education**

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## **Introduction**

This chapter aims at exploring the research literature related to blended learning in English language education. It first defines blended learning by setting its development and clarifying related terminology and key concepts. It, then, focuses on the relationship between blended learning, learning styles and collaborative learning with an emphasis on the pedagogic potential of merging dual learning environments for the purpose of increasing students' learning. In addition, different models for designing blended learning courses will be presented along with highlighting the main pedagogical features of each model. This chapter will consider how blended learning can help accomplish the optimal language learning environment for students by examining factors that can help teachers in choosing the suitable blend for their students. Finally, it presents the role of assessment in a blended learning context in addition to clarifying both teacher's and students' roles in the blend. The chapter ends with highlighting the advantages and challenges of blended learning.

### **1.1. Defining Blended Learning:**

Recently, Blended Learning has garnered much attention among scholars, for it is considered as an innovative pedagogical approach that can be applicable to different language skills. The popularity of this approach led researchers to have abounded definitions; yet there appears to be some agreement that Blended Learning, in its simplest, refers to the combination of face-to-face learning with online learning (Marsh, 2012). It was also claimed that different terms such as hybrid, mixed mode and flexible learning can be used synonymously with blended learning to refer to the combination of various instructional methods in the teaching-learning process (Stacey & Gerbic, 2009). However, a distinction between web-enhanced, blended learning, hybrid learning and fully online learning was drawn. Smith and Kurthen (2007) cited in Gruba and Hinkelman (2012, p. 4) attempt to clarify the terminology in table 1.1 below:

<b>Term</b>	<b>Definition</b>
Web-enhanced	Subjects that make use of a minimal amount of online materials, such as posting a syllabus and course announcements.
Blended	Subjects that utilize some significant online activities in otherwise face-to-face learning, but less than 45 per cent.
Hybrid	Subjects in which online activities replace 45–80 per cent of face-to-face class meetings.
Fully online	Subjects in which 80 per cent or more of learning materials are conducted online.

**Table 1.1. Taxonomy of terms related to blended learning (Smith & Kurthen, 2007 as cited in Grub & Hinkelman, 2012)**

Hybrid learning, for instance, considers online learning as the fundamental learning environment for students; however, blended learning courses are related to the combination of classroom and online learning (Snart, 2010). In this respect, Stacey and Gerbic (2009) claim that “blended learning can be placed somewhere between fully online and fully face-to-face courses and one of the definitional issues is where this might be on such a continuum” (p. 2).

In a narrower sense, starting from a Vygotskian perspective which states that learning occurs both in formal and in informal educational settings, blended learning hinges on meshing two learning contexts namely: face-to-face learning as a fundamental constituent and online learning as a supplementary learning context (Stacey & Gerbic, 2009). Thus, online learning is considered as an informal educational context while face-to-face learning is perceived as a formal learning environment. The learning process can be supported by incorporating educational technologies for the purpose of increasing students’ learning. This view is consistent with the definition of blended learning provided by Singh (2003) in which he states that “the concept of blended learning is rooted in the idea that learning is not just a one-time event—learning is a continuous process. Blending provides various benefits over using any single learning delivery medium alone.”(p. 6). Singh’s definition highlights the pedagogic potential of using different delivery methods and pinpoints the importance of extending

learning hours beyond classroom education. His definition rhymes with that of Banados (2006) who defines blended learning as:

A combination of technology and classroom instruction in a flexible approach to learning that recognises the benefits of delivering some training and assessment online but also uses other modes to make up a complete training programme which can improve learning outcomes and/or save costs. (p. 534)

Blended learning modes can encompass the use of online learning platforms, collaborative learning, self-paced materials, data show and PowerPoint presentations (Singh, 2003). These modes are meant to enhance students' engagement and build opportunities for social interaction beyond the classroom as Dziuban et al. (2004) hold the view that "Blended learning is viewed as a pedagogical approach that combines the effectiveness and socialisation opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment" (p. 6).

In order for blended learning environments to be successful, face-to-face learning needs to be supplemented with an online learning platform that includes online activities, synchronous chat, asynchronous discussions, and e-mail threaded discussion. Integrating these online tools in the learning process can enhance teacher-led instruction, ease intercommunication, make learning more accessible, and provide flexible learning opportunities for students (Martyn, 2003). This combination can provide students with adequate feedback, scaffolding and support of the teacher whose main role is placing the students at the heart of the learning process in order to hone their engagement and improve their academic success. Starting from these definitions and perspectives, it can be concluded that blended learning optimizes opportunities for students to increase their learning outcomes and social inclusion through matching different learning styles, integrating motivating materials, innovative delivery and dual learning environments.

Moreover, the incorporation of blended learning in higher education is related to six reasons. These involve varying pedagogical approaches, focusing

on social interaction to improve the teaching of large groups, facilitating the access to knowledge, promoting personal agency in terms of learner autonomy and choice, cost effectiveness, and ease of revision (Osguthorpe & Graham, 2003). However, Graham et al., as cited in Stracke (2007, p. 59), summarized these points to include three reasons namely improved pedagogy, increased flexibility, and increased cost effectiveness. Improved pedagogy is viewed as the main impetus for implementing a blended learning approach in higher education by highlighting an emphasis on the need for adopting eclectic methods or assistive strategies and implementing technology to improve teaching practices and sustain students' learning through taking into account their learning styles and needs (Beetham & Sharpe, 2007; Sharma & Barrett, 2007). Thus, the integration of blended learning in higher education was supported since it copes with this globalized epoch in a way that leads to improving teaching practices, exploiting ICT facilities, exploring new approaches to learning and teaching, and helping students achieve good learning outcomes (Graham, 2006; Snart, 2010). Therefore, blended learning, in the current study, refers to the notion that blended learning is about (a) combining educational technologies (Bersin et al., 2003; Singh, 2003) and (b) Integrating online and face-to-face learning (Marsh, 2012)

## **1.2. Online learning: The MOODLE platform**

Online learning can be broadly defined as “the use of new multimedia technologies and the internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration” (The European Commission, 2001 cited in Soliman, 2014, p. 753). In terms of its narrow definition, Stassen and Poe (2002) have remarked that,

The term online learning (or, as it is sometimes called, distance learning) includes a number of computer-assisted instruction methods ... Online teaching and learning is faculty-delivered instruction via the Internet. Online instruction includes real-time (synchronous) and anytime, anywhere (asynchronous) interactions. (p.5)

Recently, the objective of online learning is to create a learner-centered atmosphere to support self-paced and flexible learning that makes students more autonomous and interactive. In this regard, Ehlers (2013) purports that:

E-learning 2.0 emphasizes the metaphor of —participation— learning is perceived as an interlinked, social process in which Web 2.0 tools are used to develop learning results through collaboration and communication, compile one’s own learning environment and comprehend the entire internet as a learning resource – not only the given material for a class.

(p.28)

Considering Ehlers’s (2013) definition, it can be said that much of the theory underlying online learning is rooted in Vygotsky’s sociocultural theory in which interaction and collaboration are considered as the main tenets for improving student learning (Wertsch, 1985). Hence, online materials shifted from simple screen-based texts to multimodal input which consists of videos, graphics, sounds, animation and interactive tasks to create a friendly-user learning process which is built on students’ intrinsic motivation and collaboration (Hsu et al., 2009). Multimedia resources are interlinked in a way to permit students to link and check a variety of sources. As an illustration, students can do reading assignments, read grammatical explanations, check spelling mistakes, involve in collaborative writing assignments, consult online dictionaries, and use emails and chatting systems to mediate conversations between students. This learning-centered approach “supports collaborative work, thereby allowing users to develop the skills of working in teams” (Mason & Rennie, 2007, p.199).

The emergence of online learning offered opportunities for students to publish their texts or share extra resources with their peers through relying on forums or blogs. They can also search various files around the world to locate and access authentic materials specifically tailored to their interests and needs. Along the same vein, different virtual libraries, collaborative projects, electronic discussion forums and online learning platforms can be accessed to maximize

students' learning and scaffold their language skills (Hsu et al., 2009). Thus, varied learning platforms have emerged to help students study beyond the classroom, among which the MOODLE platform.

Online learning encompasses a plethora of educational platforms that are dedicated to enhance students' learning and supplement their face-to-face courses. Among these educational platforms we mention the MOODLE platform. Moodle is an acronym that stands for Modular Object-Oriented Dynamic Learning Environment (Benta et al., 2014) and contains a wide range of configurable features which are categorized into modules and resources that are used for academic purposes. Thus, its flexibility allows the teacher to tailor learning materials to his/her students' needs and accommodate their different learning styles. According to Belhadj (2016), MOODLE tools include:

- **Chat:** This activity allows students to get involved into text-based, real-time synchronous discussions. These text-based discussions improve students' writing as they discuss and exchange ideas with their peers which may lead to develop learner autonomy. It is used also as a scaffolding tool to guide students and answer their inquiries.
- **Choice:** The choice activity permits a teacher to give multiple choice questions to students to test their understanding. It helps to propel students' thinking via a survey. Students will have the opportunity to get feedback and evaluate their performance.
- **External Tools:** these external tools enable students to have access to other websites than the actual online platform. When students consult other websites, they can have the opportunity to find new activities or learning materials that may improve their learning.
- **Forum:** students can participate in forums to exchange resources, discuss ideas and negotiate meaning through asynchronous discussions i.e. discussions that take place over an extended period of time. As students

engage into asynchronous discussions, they are likely to develop their self-confidence and self-esteem.

- **Glossary:** it helps students to save a list of definitions, expand their vocabulary, and information. They can also brainstorm ideas collaboratively for writing activities.
- **Lesson:** the teacher can rely on lesson activity to deliver content and activities in an enjoyable way. The lesson can include videos, interactive quizzes, chat to ask questions, images and writing.
- **Quiz:** quizzes involve various types of questions such as short-answer questions, vocabulary question, matching, multiple choice questions, reading quizzes and essay writing which are related to a certain topic or lesson. A time limit can be set and the students can access the quiz independently and receive feedback immediately. The questions can also be shuffled.
- **SCORM Package:** SCORM stands for Sharable Content Object Reference Model. It is a collection of files which is presented over some Web pages. It gives the opportunity to show and present content in a multimodal way. It can be accessed by students at any time and they will be able to watch, read and listen to the content material which will improve their language skills, answer different learning styles, and encourage them to work autonomously.
- **Workshop:** students can review and assess each other's submissions or work. Hence, students can submit any digital content, such as Word documents and can also type text directly into a field using the text editor. This activity helps students upgrade their writing skills.
- **Wiki:** this activity enables students to add and edit an online content through collaborative writing. Engaging into wiki activity impels students to engage in peer-assessment.

- **Book:** in this activity, the teacher can either upload a book to the online platform or create a multi-page resource which may involve media files.
- **File:** The file module allows the teacher to create a file as a course resource. It could be used to share PowerPoint presentations, e-books, and Word documents.
- **Page:** A page can incorporate and group different modes such as texts, images, and videos in order to clarify the course syllabus or lesson to students and give them the opportunity to learn through varied modes.

Moreover, MOODLE is based on customizable site design and layout, ensures secured authentication, saves students' enrollment and participation and has regular security updates (Belhadj, 2016). In short, its flexible and ubiquitous nature allows students to have access to various resources, to use the tools to check their understanding and manipulate resources to suit their interests and needs (Maier & Warren, 2000). In addition, students have the possibility to study individually or collaboratively with peers to negotiate meaning and assess their progress and understanding.

### **1.3. The place of blended learning, learning styles and collaborative learning in education:**

It is undeniable that students possess different learning styles and preferences. Since these differences are crucial in the learning process, blended learning provides dual learning environments that are based on differentiated instruction which takes into account students' heterogeneity and learning needs. Thus, varying different learning contexts, resources, and materials will enable students to transfer and apply knowledge to different learning situations (Thorne, 2003; Marsh, 2012), and immersing students in their own learning process can raise their awareness of their individual differences (Hartman, 1995).

Known as VAK or VAKT, this theory is considered to be one of the conventional learning theories that deals with learning styles (Mackay, 2007;

Reid, 1995). According to this theory, students' learning styles encompass visual (V), auditory (A), kinesthetic (K) and tactile (T). First, visual learners make up 70 percent of the population (Bersin, 2004), and they learn best by visualizing through relying on written language, pictures, videos, PowerPoint presentations and diagrams. According to Silverman (2003), visual learners tend to focus on the use of the right hemisphere of the brain that is based on capturing and synthesizing visual movements, thereby transforming linguistic information into a visual representation. Visual learners can be active in the learning process, especially when they are presented with visual aids that can help them understand what is being taught. As a result, West (1997) argues: "visually oriented tools and processes might prove to be especially fruitful for many different kinds of students with different talents and different brains" (p. 42 quoted in Witte et al., 2011, p. 552). The majority of web-based resources are targeted towards the visual learning style. They can contain videos, diagrams, colors, and pictures to grab students' attention and help them understand the task better.

Second, auditory learners, who represent 20 percent of the population, rely on listening to pick up information and learn better through involving in group discussion, taking notes and listening to verbal explanation (Gavan, 2012). Online and collaborative learning can cater for the auditory learning style since they can involve sounds, dialoguing, and chat. Third, kinesthetic learners are referred to as activity-based learners, and they learn best by doing and experiencing (Zapalska & Brozik, 2006). In order to fit the kinesthetic learning style, learning materials need to be creative and should contain movements and visuals. Fourth, the tactile learning style is another form of activity-based learning that focuses on touching and feeling objects to remember information (Mackay, 2007). Therefore, online activities that require working with technological tools can help tactile students learn best.

Blended learning creates new learning experiences for the students since it mingles different learning contexts, mainly face-to-face and online, where

learning becomes a “process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 38). Involving students into new learning experiences may ease the process of learning development and acquisition through giving them the opportunity to exploit varied learning styles and identify their needs. For example, while some students prefer to learn by conversing and exchange of ideas with peers, others may prefer to learn individually or by discovery. In this vein, to boost student learning in higher education, the main emphasis needs to be put on catering for different learning styles to enable students to fully engage in deep learning where a variety of learning materials and methods are incorporated to best enhance their learning outcomes.

According to Tomlinson and Imbeau (2013), in blended learning, adapting to different learning styles can be achieved through focusing on four components namely: content, process, product, and affect. First, content is referred to as the necessary input or knowledge that needs to be learnt to accomplish learning goals. Content can be adapted or adjusted to answer students’ learning needs, and learning resources can be tailored to fit students’ learning styles. Second, process is determining how students will approach the learning resources or content through varying learning methods such as class learning, collaborative learning and personalized tasks. Third, product is about applying the knowledge learnt through solving some learning activities or tasks which are considered as assessment tools by which the students’ performance is tested and adequate feedback and scaffolding are provided (Santangelo & Tomlinson, 2009). Fourth, affect can be perceived as determining students’ perceptions of the learning environment. These perceptions can revolve around whether all students interact with each other, engage in active learning and involve in in-depth group discussion (Tomlinson, 2001). Therefore, Thorne (2003) rightly remarks that blended learning “suggests an elegant solution to the challenges of tailoring learning and development to the needs of individuals” (p.16). It can be inferred

that blended learning is not a one size fits all approach but an eclectic approach that merges different learning styles and learning modes.

Since learning is no longer considered as an isolated activity, the main objective of blended learning is to enhance social learning with a particular focus on teacher-student interaction, collaboration and the integration of dual learning contexts (Marsh, 2012). It gives prime importance to the role played by peers, the teacher and the context (with its tools) in scaffolding and increasing student learning. As students work in meaningful groups and continuously rely on technological tools to consolidate their learning, constructive feedback can be provided regularly and peer-mediated learning can be fostered to help students engage in deep and active learning in and outside the classroom. In this respect, the social perspective remains the fundamental condition in the learning process (Hart, 2014). As noted by Graham (2006), learning in the twenty first century needs to be perceived as a collaborative and a network-based act where both face-to-face instruction and e-learning are combined to extend student learning and help them assess their progress successfully. Hence, blended learning can develop student learning and forge meaningful communication which hinges on collaboration, scaffolding and mediation (Quinlan, 2018).

#### **1.4. Designing a blended learning course: Some models**

Well-designed and well-implemented blended learning courses can lead to meaningful learning. This can be achieved by combining and integrating information technologies along with sound learning materials in the teaching-learning process. This idea is reflected in Neumeier's (2005, pp.164-165 quoted in Marsh, 2012, p. 6) claim which states that "the most important aim of a blended learning design is to find the most effective and efficient combination of learning modes for the individual learning subjects, contexts, and objectives." When it comes to designing blended learning courses, there are no direct criteria to follow; thus, "the focus is not to choose "*the right*" or "*the best*," "*the innovative*" as opposed to "*the traditional*"; but to create a learning environment

that works as a whole” (Neumeier, 2005, pp.164-165 quoted in Marsh, 2012, p.6: italics in original). And “effective designs will evolve only through cycles of practice, evaluation and reflection” (Beetham & Sharpe, 2007, p. 8). In this respect, the design of any blended learning course is dependent on careful planning, feedback from the participants, and how they perceive it. However, there are certain factors that underpin a successful blended learning design which include creativity, complementary materials and support (Marsh, 2012). The first factor i.e. creativity is discussed below.

- **Creativity:**

It is believed that students learn better when they are presented with meaningful solutions which provide them with purposeful learning experiences. This summons creativity. The latter is considered as one of the cornerstones that sustains the learning process. Undoubtedly, “creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns” (de Bono, 1995, p. 63). In this context, Torrance (1995) defines creativity as:

- **Fluency:** Generating new ideas;
- **Flexibility:** Using things differently and innovatively;
- **Originality:** thinking of innovative things; and
- **Elaboration:** Considering details.

Creativity can be introduced in blended learning through reshaping and creating stimulated learning contexts that reinforce collaboration, inquiry, divergent thinking, and active participation and interaction. These can be accomplished through setting and incorporating different learning modes, resources, information technologies and discussion boards. Therefore, students will have the opportunity to have access to a wide range of learning activities that can consolidate their learning which allow them to have chances for formative discussions that may help them exchange feedback, reflect and assess their progress with peers. The second factor named complementary materials is discussed below.

- **Complementary materials:**

It is worth mentioning that it is vital for the various resources of the blend (related to face-to-face and online learning) to complement each other because any mismatch may create ambiguity on the part of the students and augment the workload of the teacher. As noted by Marsh (2012), to provide complementary materials, student' needs, learning styles, learning objectives and the available resources need to be identified and blended with face-to-face sessions. These components or resources need to match and support the students' learning styles and needs in order to be valuable and beneficial. Learning materials need to be meaningful and should be in accordance with the pre-set goals and objectives. In general, students need academic, affective and technical support in order to ensure skills development in a blended learning environment.

- **Support:**

It is undeniable that providing students with adequate support plays a crucial role for guiding and facilitating learning for students. In an online context, students need to be provided with different discussion boards such as forums to enable them to ask questions about any difficulties that they may encounter in their learning. By relying on a learning platform that encourages asynchronous or synchronous discussions where students are empowered to respond to their peers' questions, students can maintain group interaction and collaboration through consulting their peers' support (Arar, 2015; Lamri, 2015; Belhadj, 2016). This would enhance students' self-confidence and satisfaction and raise their awareness of seeking information beyond formal educational settings. In addition, it highlights the fact that the teacher is not the only provider of knowledge as blended learning puts the emphasis on the potentials of learner-centeredness and the importance of creating a sense of community and peer-support over teacher-reliance.

In 2000, Ellis advocated the fact that the learning process springs out not through interaction but in interaction. Hence, the interplay between activities, the teacher and students can have a direct bearing on sustaining the flow of learning

development. Interaction in the classroom context plays a pivotal role in mediating students and supporting them to achieve their goals (This point will be introduced in chapter 3). This interaction can also be transferred to informal educational settings such as online learning through the use of synchronous and asynchronous tools where students can participate freely and get involved in meaningful discussions.

To support the factors stated by Marsh (2012), Huang et al. (2006) confirm that blended learning is characterized by three features namely flexibility, support and enrichment. Flexibility provides opportunities to modify learning resources so that they match the students' learning styles and interests. Support, as mentioned earlier, is crucial in assisting students in terms of learning difficulties and learning diversity through merging dual learning contexts which are based on individualization, self-paced learning and collaboration. Blended learning is also based on enrichment which is central in improving teaching and learning practices. It maintains course management activities such as communication, evaluation, submission, grading and feedback (Belhadj, 2016), thereby encouraging learner-centeredness.

Blended learning design process is dynamic and interactive in nature since it goes through specific steps from careful planning to designing the suitable blend that matches students' needs and learning styles. This is fostered by technology to ease and improve the learning process and not just to embellish content. In this vein, instructors need to be knowledgeable about the different design processes and steps of blended learning in order to benefit from its creative opportunities. This idea is reflected in Marsh's claim which states that teachers should:

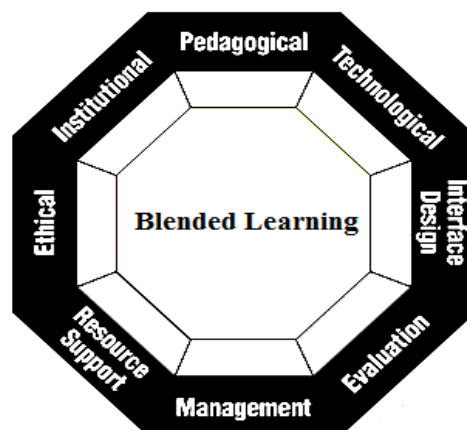
- Plan the blend carefully; consider the learning outcomes, the technology available, and the institutional constraints.
- Build in flexibility and be prepared to adapt to students' needs.
- Build in time in the early stages of the course to introduce students to the technology and learning approach.

(Marsh, 2012, p.9)

To design an online learning course which can supplement face-to-face instruction, teachers can rely on design models that can be adapted to students' needs and learning styles. To achieve this aim, there are various blended learning design models that are applied by many instructors to ease the process of implementing blended learning in EFL classrooms. The design models depend heavily on the pre-set objectives and the materials used. In this regard, there are four models that are currently used by different instructors namely: Khan's Octagonal Framework (2005), Huang and Wang model (2006), Al-Fiky Blended Learning Model (2011), and Hack's instructional blended learning model (2016).

- **Khan's Octagonal Framework (2005):**

Khan (2005) presents an Octagonal framework for blended learning design. As noted by Singh (2003), Khan's octagonal model encompasses three main dimensions: instructional, pedagogical and technological. Besides, it involves Interface design, Evaluation, Management, Resource support, and Ethics (Singh, 2003). However, this model does not take into account the teaching/learning process only, but it extends to cover the overall context within which blended learning will be applied. The figure below illustrates the different dimensions of Khan's model (2005):



**Figure 1.1: Khan's Octagonal Framework for designing a blended learning course**

The dimensions presented in Khan's octagonal framework need to be taken into consideration in the design of blended learning in order to accomplish effective learning (Khan, 2005); these consist of eight aspects:

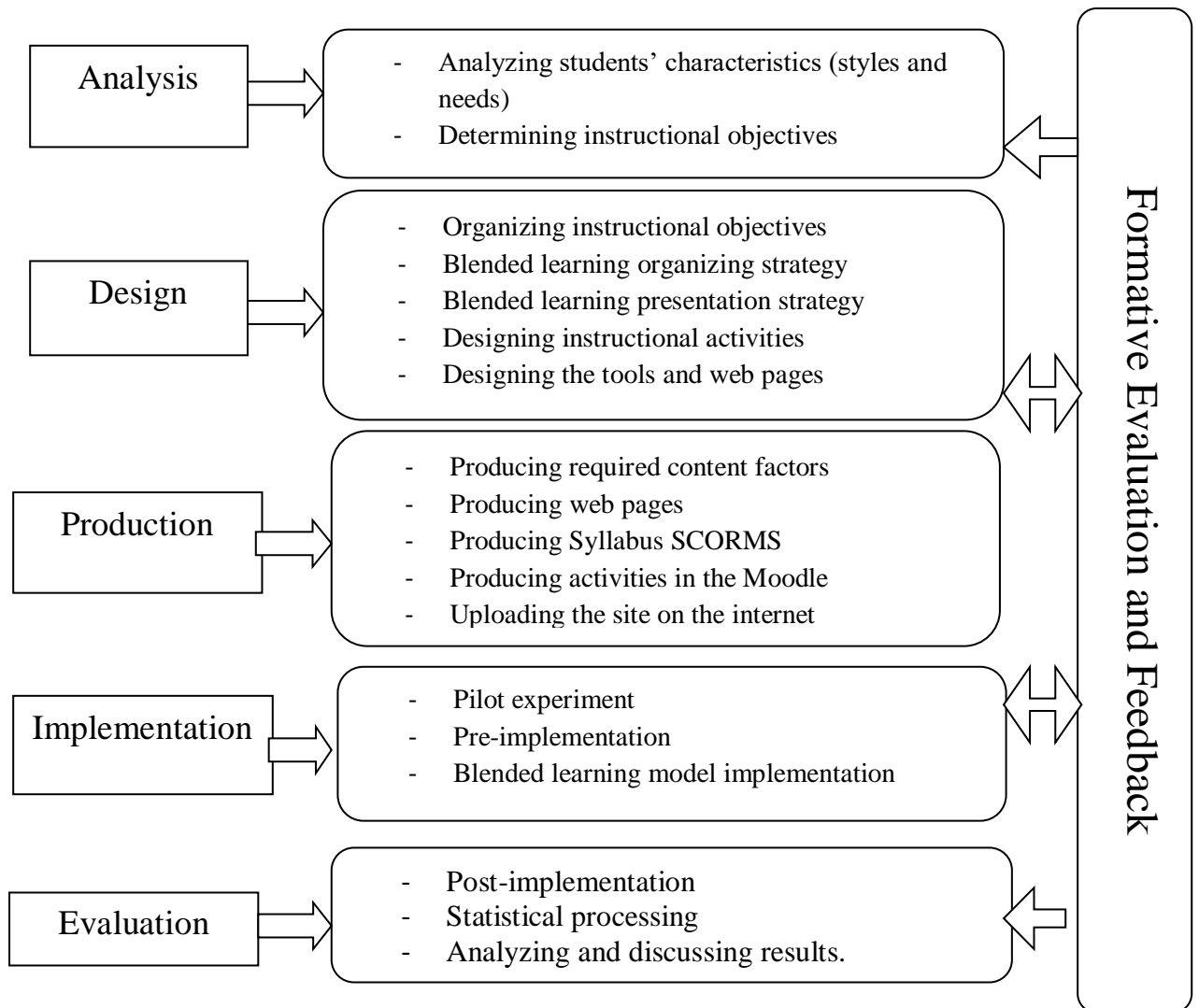
- **Institutional:** encompasses administrative concerns and academic administration.
- **Pedagogical:** involves instructional and content design, goal analysis, audience analysis
- **Technological:** deals with infrastructure
- **Interface design** deals with look and feel
- **Evaluation:** consists of evaluation of materials and learners
- **Management:** deals with regular updates
- **Resource support:** entails materials, hours, money, and technical counseling.
- **Ethical:** is about geographical diversity people, time zones, accessibility, and legal issues

- **Huang's Model (2006):**

As noted by Huang et al., (2006), the design of blended learning covers three stages namely: pre-analysis, activity and resource design and instructional assessment design. The first stage, pre-analysis encompasses: (1) learners' prior knowledge assessment, learning styles and strategies, and (2) context characteristics analysis. The second stage, named activity and resource design, includes the selection of various materials and resources that are concomitant with the learning context. These comprise learning units or activities, delivery strategy, and technical support. The third stage, named instructional assessment design, focuses on the evaluation of the learning process, organization of learning activities and examination of curriculum knowledge.

- **Al-Fiky Blended Learning Model (2011):**

Unlike Huang's model (2006), Al-Fiky Blended learning model (2011) is composed of five stages which are analysis stage, design stage, production stage, implementation stage, and evaluation stage; each stage comprises a number of steps and criteria (See figure 1.2 below).



**Figure 1.2: Al-Fiky Blended Learning Model (2011)**

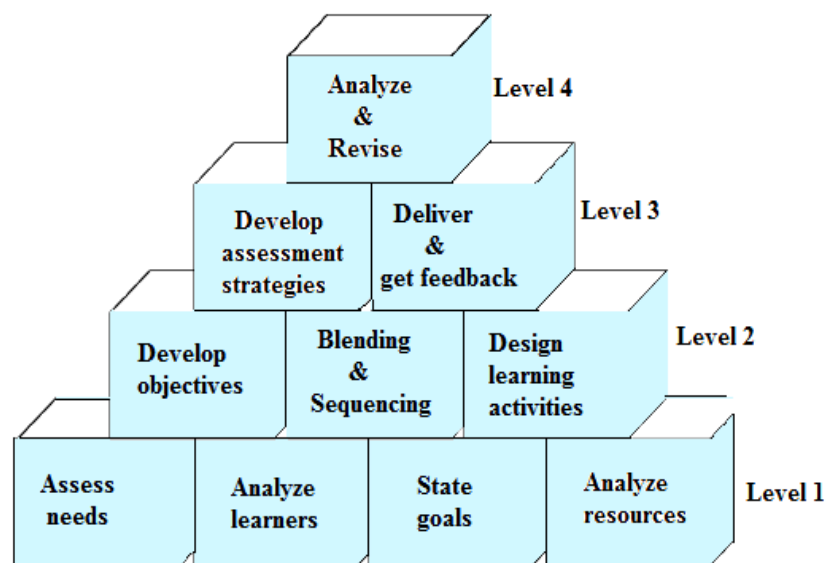
The analysis phase allows the instructor to analyze and examine students' learning styles, needs and objectives in order to ensure that the design phase will be effective. In the second phase, named design, the instructor starts by organizing and setting objectives, the different contexts and the multimodal delivery modes that will be used in the teaching-learning process. In the production phase, the online context will be available for students along with the various activities and quizzes. The implementation phase is meant to check the effectiveness of blended learning materials before being implemented as the website created needs to be piloted in order to check and unveil any possible inconsistencies or mismatch. Finally, the evaluation phase is based on assessing

and evaluating the usefulness of the online course through analyzing and discussing the results obtained from the study. However, this model is related solely to hybrid or fully online learning and does not take into account the face-to-face courses and how they should be blended with online learning.

- **Hack's Instructional design model for blended learning (2016):**

Following a linear progression, Hack's model for designing a blended learning course in higher education consists of four levels. The first level involves assessing students' needs, analyzing learners in terms of profile and learning styles, stating goals and analyzing resources. The second level focuses on developing objectives, blending and sequencing and designing learning activities. The third level of the model is based on developing assessment strategies, delivery and getting feedback. Finally, the fourth level is about analyzing and revising the e-course in order to ensure its validity and practicality.

With regard to the first level of the model (See figure 1.3 below), assessing students' needs plays a pivotal role in identifying the learning deficiencies that students may encounter. The purpose behind identifying and analyzing students' needs is to ensure that the designed blended learning course will answer these needs and increase students' learning. Moreover, analyzing students consists of determining their profile in relation to technology use and exploring their learning styles in order to take them into consideration in the design process, thereby placing the student at the heart of the learning process. In order to make the blended learning course explicit in terms of what is to be learned, establishing goals is crucial to meet the needs of the students and to inform them about the expected learning outcomes. The final step of the first level of the model is about analyzing resources in terms of learning materials, activities and the allotted time for each activity. The rationale for analyzing resources is to match them to students' characteristics and to make sound decisions regarding the development of objectives and assessment strategies.



**Figure 1.3. New instructional design model for blended higher education (Hack, 2016)**

As far as the second level is concerned, developing objectives helps students assess their progress. Objectives are specific statements that inform the student about the information that will be acquired and the desired result that will be accomplished as a result of the instruction they undergo. Once the objectives are stated, the e-course needs to be blended and sequenced with face-to-face learning. On the one hand, blending means how to integrate online learning in face-to-face learning. This can be done through relying on several models that can be adopted by the teacher for blending online learning with face-to-face learning. These models, which are discussed in details in the next section, involve flipped learning model, station rotation model, flex model, self-blend model and the enriched virtual model. On the other hand, sequencing is about ordering content in terms of what is to be learned first, thereby guiding students in the learning process and helping them achieve learning objectives. Finally, after achieving the previous steps, the next step focuses on designing learning activities in relation to the stated objectives and content in order to select the suitable teaching strategies and delivery methods. According to Hack (2016), activities need to be divided into two categories: activities related to lower thinking skills and activities related to higher order thinking skills. Lower order thinking skills activities can take the form of independent reading,

demonstrations, slide presentations, video presentations, Web quests, think pair share and wiki Creation; however, higher order thinking skills activities, which aim at engaging students in active and deep learning, can encompass problem-based learning, collaborative learning and cognitive mapping activities (Hack, 2016).

The third level of the model highlights the importance of developing assessment strategies and delivery and getting feedback. Developing assessment strategies is crucial in blended learning since it helps in determining how students will be assessed, thus improving the effectiveness of the instruction. In blended learning, assessment can take two forms namely: formative and summative methods. While formative assessment focuses on regular evaluation of the students' performance and seeks to scaffold students' learning and provide them with adequate feedback, summative assessment is likely to occur at the end of the instruction to measure students' overall achievement (Hack, 2016). Delivery will take place when students engage in blended learning course, and it paves the way to get feedback from the students to ensure practicality and usefulness of the online and face-to-face components. According to Hack (2016), exploring students' perceptions of using the blended learning course can contribute to evaluating the effectiveness of the course. And this can be achieved through administering quantitative and qualitative methods of inquiry such as questionnaire and interview. Consequently, fostering continuous communication strategies between the teacher and students can unveil some aspects related to a blended learning course, such as content and activities, which need further adjustments.

The fourth level of the model hinges on analyzing and revising the blended learning course (i.e. its online and face-to-face components). If the teacher notices that the blended learning components need further modification, he/ she will have to revise it according to the feedback provided by the students in order to ensure that the blended course will be effective and increase students' learning. This model will be used in the present study since it follows a

systematic progression for designing blended learning courses, moving from identifying students' learning styles and needs to the way they should learn and be assessed in both face-to-face and online learning. Unlike the previously mentioned models which focused only on designing an online learning course, Hack's model (2016) considers both face-to-face instruction and online learning and how they should be blended together to provide an inclusive and meaningful learning environment for the students. The next section discusses the models of blended learning that are used to blend face-to-face instruction with online learning.

### **1.5. Models of blended learning to blend face-to-face learning with online learning:**

While the previous models were about designing a blended learning course which involves face-to-face session and online learning, the models that are presented in this section are adopted to blend or organize face-to-face learning with online activities. Hence, online learning and face-to-face learning can be blended together through implementing one of these four models namely: Flipped learning model, Flex model, Self-blend model and the Enriched Virtual model. The flipped learning model is discussed in the next section.

#### **1.5.1. Flipped learning model:**

Considered as a student-oriented context, flipped learning gives prime importance to active and deep learning in class while passive learning is done outside class through online learning. For Ogden et al.(2014), flipped learning is “a pedagogical design that replaces what typically takes place during a face-to-face lecture (passive transfer of knowledge) with engaging activities and assigns the lecture as homework for students to complete autonomously outside of class” (p. 49). It aims at leveraging opportunities for students to benefit from class time. Hamdan et al. (2013) purport that flipped learning focuses on “active learning opportunities in the classroom by shifting direct instructions outside of the larger group learning space” (p. 6). Thus, class time is devoted to doing learning activities and working collaboratively with peers, and online learning is meant to

provide supplementary learning activities that reinforce students' understanding and practice.

Flipped learning hinges on Bloom's revised digital taxonomy where higher order thinking skills (applying, analyzing, evaluating and creating) are practiced in class through meaningful activities and purposeful group discussion, and lower order thinking skills (remembering, understanding, and some application) are executed outside class through online videos, demonstrations and online quizzes (Anderson et al., 2001). Therefore, flipped learning carries various pedagogical potentials since it empowers students to study at their own pace through supporting flexible learning, helps them benefit from the advantages of having dual learning contexts where feedback and scaffolding are taken into account in the learning process, and assesses students regularly and consolidates their learning (Kharat et al., 2015). The next section explains the Flex Model of blended learning.

### **1.5.2. Flex model:**

The flex model of blended learning considers online learning as the only mode for learning. Instruction is delivered mainly by the internet where the students need to be online in order to do activities and interact with the teacher. Yet, face-to-face learning is reduced to a minimum and can be provided only to the students who need further support. This can be achieved through "a flexible and adaptive as-needed basis through activities such as small-group instruction, group projects, and individual tutoring" (Staker & Horn, 2012, p. 12). Self-Blend Model is explained in the subsequent section.

### **1.5.3. Self-blend model:**

Self-blend model provides students with the opportunity to select what courses they need to take online, and what courses they want to study in class. Students can have access to the e-course either in the classroom or off-site. Hence, "Students self-blend some individual online courses and take other courses at a brick-and-mortar campus with face-to-face teachers" (Staker &

Horn, 2012, p.14). Another model of blended learning, named the enriched virtual model, is discussed in the next section.

#### **1.5.4. The enriched virtual model:**

The enriched virtual model considers online learning as the backbone of learning. It requires students to complete and do coursework online while face-to-face learning remains optional for students to attend. Staker and Horn (2012) explain, “in Enriched-Virtual programs, students seldom attend the brick-and-mortar campus every weekday” (p. 15).

In the present study, the flipped learning model seems more adequate because it takes into account dual learning contexts namely face-to-face learning and online learning instead of fully online. It also focuses on developing both students’ higher order thinking skills and lower order thinking skills through relying on active learning, hands-on tasks and collaboration. The next section deals with assessment in blended learning.

#### **1.6. Assessment in blended learning:**

Twenty first century pedagogy heightens a need for broadening the concept of assessment to encompass various techniques to address students’ difficulties. In order to track the students’ progress, several assessment tools have been developed and become more prevalent in the teaching and learning process. In blended learning environments, online assessment techniques have become more inclusive in a way that can focus on students’ areas of unusual strengths and raise their awareness of areas that need further consolidation (Robles & Brathen, 2002).

Tracing back to West’s (1997) perspective on incorporating other modes in the learning process, he purported that pedagogical practices need to involve and use the visual-spatial modes of thought (Witte et al., 2011). Teachers need to acknowledge the fact that students vary in terms of learning styles and preferences; hence, it is important to integrate different modes for assessment, particularly the visual and spatial modes to enable students to benefit from the assessment method (West, 1997 cited in Witte et al., 2011). However, in an

online environment, assessment needs to be based on clear objectives since “effective assessment requires clarity of purpose, goals, standards and criteria, achieved through alignment with an engaging and challenging curriculum” (Department of Education and Early Childhood Development, 2011, p. 3). From this perspective, it is crucial to determine what knowledge or skill will be assessed in order to ensure whether the aim behind the assessment is training or education. Oosterhof et al. (2008) explain: “with training, the goal is for learners to be able to perform a particular task, often with a high degree of proficiency and consistency”, and with education, “the goal is to provide learners with a framework for further learning from which unanticipated problems can be solved” (p. 56). Therefore, the choice of assessment is highly pivotal in education since it is purposefully implemented to enhance students’ learning experience and improve their learning outcomes.

It is established that formative assessment should complement rather than replace traditional tests because this type of assessment informs the students about their progress through providing regular constructive feedback (Ellery, 2008). It shows students where they stand in relation to the stated learning objectives and helps them fill the learning gaps that they may encounter. A great deal of work has demonstrated the effectiveness of formative assessment on students’ learning process (Ellery, 2008; van der Kleij et al., 2012). For example, meta-studies analyzing the results obtained from various studies revealed that formative assessments offer “moments of contingency” (Black & Wiliam, 2009, p.10) and inform about students’ weaknesses or gaps in knowledge to adjust teaching and learning practices.

Nowadays, with the advent of online learning, different tools and techniques have been designed and used by instructors to check students’ progress. Several studies have acknowledged the vital role of information and communication technologies (ICTs) in the area of assessment (Schmidt et al., 2011). The introduction of e-assessment in higher education has gained much importance in a way that transforms educational practices to cope with the twenty-first-century pedagogy (Crews & Curtis, 2011). Regarding formative

assessment in the context of online learning, online platforms can provide innovative tools, such as quizzes, assignments, wikis, to help students practise what they learnt beyond classroom learning and control their own learning process. Therefore, teachers “can create quizzes with different question types, randomly generate quizzes from pools of questions, allow students to re-take quizzes multiple times, and have the computer score everything” (Cole & Foster, 2008, p. 95). According to Belhadj (2016) and Blanco and Ginovart (2012), the quiz activity can encompass a wide range of options such as multiple choice questions, essay writing, matching, and true-false. The teacher can create quizzes of various types in order to enable his/her students to check their understanding of the course. The quiz can be attempted multiple times, with the possibility of setting a time limit and shuffling the questions. Each attempt is graded automatically and saved. However, essay writing questions are only corrected by the teacher. As noted by Belhadj, (2016), quizzes can be used:

- As course exams
- As mini tests for reading/writing assignments
- As exam practice using questions from previous exams
- To provide immediate feedback
- For self-assessment

Furthermore, the assignment activity allows the teacher to provide tasks, collect work, and give grades or feedback. It also enables the students to either submit any digital file to the online platform or type a text directly into the text editor. This would remind the students about the completion of any real-life assignments in an offline mode (Cole & Foster, 2008). With regards to submitting assignments, students can submit work individually or as a member of a group, which enables the teacher to review students’ work and provide feedback and comments on their performance. The assignment activity provides an opportunity for the teacher to grade his/ her students’ work using a numerical scale or an advanced grading method such as a rubric. As referring to Cole and Foster (2008, p. 123), online assignments fall into four categories:

- **Uploading a Single File:** This allows each student to upload a single file in any format such as ZIP, Word or PDF file.
- **Offline Activity:** This is useful when the assignment is performed outside of MOODLE. It could be completed on paper for face-to-face sessions. Students can see a description of the assignment, but they cannot upload any files.
- **Online Text:** This allows students to write a text online. The assignment can be graded online and comments or changes can also be provided to the students. The students can also send their essays via email to be corrected by the teacher.
- **Advanced Uploading of Files:** This allows each student to upload one or more files in any format. Different files can be uploaded for each student. A student may describe their submitted files, progress status, or any other important information.

In a study conducted at the University of Glamorgan in the UK, Marriott and Lau (2008) investigated the impact of e-assessment on students' learning outcomes. The findings revealed that the use of e-assessment provided students with other modes to test their understanding. It also contributed to the development of student engagement and motivation for learning. Confirming the study's results, other researchers (e.g. Cole & Foster, 2008; Leung et al., 2008; Draper, 2009) stated that well designed e-assessments, such as quizzes and multiple choice questions, can achieve deeper learning in a way that enhances students' cognitive functioning in terms of critical thinking and analysis skills. When students engage in online assessment, they tend to focus more on understanding and comprehension which may lead to the development of skills and knowledge acquisition. Yet, when they take longer tests, they tend to "recollect facts in order to replicate in their answers" (Leung et al., 2008). Hence, the mere aim of online assessment is to provide immediate feedback as Bajzek et al. (2008) note that e-assessments "provide student and lecturer with richer, more immediate feedback" (p. 1) which, in return, will improve pedagogical practices and learning outcomes. In this context, when feedback is

instant, students will be able to evaluate their own performance which leads them to be critical and successful (Cole & Foster, 2008).

### **1.7. Teacher's role in blended learning:**

Unlike teacher-centered learning contexts where the teacher is considered as the sole provider of knowledge, blended learning environments require other roles for teachers. Since blended learning is based on learner-centeredness, the teacher's role shifts from a mere knowledge provider to a coach, a mentor and information master whose role is to place the students at the heart of the learning process (Pekařová, 2013). This can be achieved by identifying students' needs and learning styles, motivating them, and facilitating their interaction to improve their learning outcomes and raise their willingness to learn (ibid). In essence, teachers need to avoid rehashing the same methods of teaching and need to be updated and autonomous as Bensemmane-Ihaddaden (2016) argues: "The autonomous teacher must be flexible and be able to create new situations never encountered before" (p.162).

Moreover, students' learning is best fostered when they are given voice and freedom to choose the learning materials that match their interests, and when they are provided with integrated strategy training such as self or peer evaluation and collaborative strategies. From this perspective, Jones (2007) notes:

In a student-centered classroom, our role is to help and encourage students to develop their skills, but without relinquishing our more traditional role as a source of information, advice, and knowledge. In a student-centered classroom, the teacher and the students are a team working together. (p.25)

According to Jones (2007), the traditional role of the teacher, as information gatherer, complements other roles in order to ensure optimum assistance for students. In learner-centered instruction, decision making is based on students' needs. Thus, teachers need to put a strong emphasis on planning and designing materials that best suit their students' preferred learning styles. In

essence, it is the teacher's responsibility to make learning relevant and meaningful for students in order to hone their engagement and allow them to create, understand, and connect to knowledge (Marsh, 2012). One of the foremost roles of teachers in blended learning environments is facilitating the blend for students through tailoring the online materials according to the students' learning styles and needs to provide a harmonious and complete blend (Arbaugh, 2002). In this regard, teachers need to help their students to be autonomous and active pursuers of knowledge who rely on different learning strategies to achieve good reading and writing outcomes.

Moreover, students need to be presented with conditions that ease knowledge building by making a transition from monologic talks, as one-way transmission of knowledge, to a more dialogic talk which requires students' full engagement and interaction (Chai et al., 2011). In this vein, teachers should be knowledgeable about the different group dynamics to encourage students' participation and collaboration. These dynamics are embedded into collaborative learning which provides much impetus to the various types of grouping including pair, small group and large group work in addition to positive interdependence, individual accountability, social skills and group processing (Johnson & Johnson, 2009). Through teacher's assistance and scaffolding, students will be able to develop mastery and autonomy.

Marsh (2012) provided some tips for teachers to apply in blended learning environments in order to facilitate and boost the use of collaborative blended learning. For example, creating communities of learning practice is essential in enabling peer discussion and exchange of ideas that are relevant to the course in both formal educational settings through pair or group work and in informal educational settings through discussion boards or online learning. In addition, "the teacher has an administrative task in the direction of working with data and providing individual support to students" (Armes, 2012, p. 1). Thus, it is important to support struggling students through providing support to guide their discussion and assist them in identifying their own strengths and weaknesses or

areas that need improvement. The subsequent section discusses the role of students in blended learning.

### **1.8. Students' role in blended learning:**

Students need to adapt and get accustomed to the new learning environment and to the different delivery modes. Students' role in the blend is indispensable since the emphasis of blended learning is mainly on the student. First of all, students need to master time management skills in order to achieve the equilibrium between face-to-face and online activities; hence, the role of the teacher is vital in guiding students to manage their time properly. As noted by Marsh (2012), students can be provided with an overview about the course plan, schedule, the time allocated to both types of activities, and deadlines. This should also encompass an estimate of weekly workload. Raising awareness of time management allows students to work smarter and makes them excel at organizing and planning how to divide time between specific learning activities or tasks.

It has been advocated that independent learning plays a crucial role in sustaining lifelong learning. From this perspective, independent learning can enhance academic achievement, boost students' self-esteem and motivation, promote social interaction and provide teachers with the opportunity to vary tasks and activities for students to create an enjoyable learning atmosphere (Zimmerman, 2002). Therefore, blended learning requires students to be independent and responsible for their own learning process. In Marsh's words, blended learning

offers students the complete flexibility to choose the time they study with no constraints of fixed "classroom" hours. However, this does mean that students will need to get used to working independently, making their own decisions, and taking responsibility for their own learning. (Marsh, 2012, p. 18)

Blended learning encourages a social atmosphere of learning in order to immerse students in the learning process, thereby enhancing students' motivation, engagement and satisfaction. As a result, effective collaborative learning hinges on convergent tasks during which "individual responsibility of all

group members leads to increased learning achievement, regardless of subject or proficiency level of students involved” (Appel, 2006, p. 278). Students need to engage into collaborative learning both in face-to-face and online learning to achieve deeper learning and attain higher level thinking. They may have the chance to engage in what Donato (1994) refers to as collective mutual learning that is based on scaffolding and constructive feedback. As noted by Johnson (2004), “collectively constructed support (scaffolding) provides not only the opportunity for input exchange among learners but also the opportunity to expand the learner’s own knowledge” (p.130). Starting from Johnson’s words, students are required to engage in peer-mediated learning, share files, create discussion threads, and participate in virtual chat. The next section presents the pedagogical merits and challenges of blended learning.

### **1.9. Blended learning advantages and challenges:**

Nowadays, blended learning is transforming higher education through improving educators’ traditional practices to involve new curriculum design and practical applications that spark innovation. The prospect of blended learning to enhance pedagogical practices is based on ample opportunities that foster reflective, free and open communities of inquiry (Garrison & Vaughan, 2008) and authentic and meaningful learning (Oliver et al., 2008).

One of the foremost advantages of blended learning is that it answers a wide range of learning styles and students’ needs due to the incorporation of various tools, materials and assistive strategies. This gain is reflected in Huang et al.’s (2008) claim which postulates that “As learners are diverse in terms of learning styles, learning proficiency, as well as learning ability, blended learning can ...[make] it possible for individualized learning and self-regulated learning to happen (p. 67). According to Oliver et al., (2008), blended learning takes into account students’ heterogeneity, needs and learning styles, especially in designing learning materials and activities to enable them engage in the learning process. Blended learning is also grounded in personalized learning which lessens students’ affective filter and promotes their self-confidence (Ruthven, 2003). It was found that blended learning encourages flexibility of time and place

for both teachers and students, and focuses on a collaborative learning atmosphere and networking opportunities rather than on competitiveness (Sitter et al., 2009).

Learning contexts are designed purposively to meet the needs of the entire spectrum of the varied learning situations found in adult learning environments. Blended learning merges face-to-face instruction and online learning to offer students various interactions during classroom session and beyond. On the one hand, the teacher will have the opportunity to observe, evaluate, and give constructive feedback to his/her students. On the other hand, students will benefit from the embedded tools, materials, and collaboration to reinforce their understanding and application (Stacey & Gerbic, 2009). Thus, blended learning can create a rich social context for students where they can exchange feedback, co-construct knowledge, scaffold each other and engage in deep and active learning (Singh, 2003).

However, blended learning might impose some challenges for students and teachers. Blended learning requires digital skills in order to ensure its usefulness, but there are some teachers or students who lack dealing with technology, especially in handling online platforms. Being unknowledgeable about how to integrate technology to leverage learning opportunities may hinder the process of designing blended learning courses and decrease teaching and learning outcomes, as Torrisi-Steele (2011) argues:

Instructors are faced with the challenge of expanding their knowledge of what tools are available, what are the pedagogic advantages and disadvantages of those tools, how to best integrate those tools within the learning environment they are designing, what infrastructure is available/needed to support the tool use.

(p. 533)

From this perspective, there is a need for technical support and professional training to help instructors achieve the suitable blend for their

students and to sustain self-directed learning and learner independence. Moreover, due consideration needs to be given to the selection and matching of materials, activities and delivery medium to the pre-set objectives in addition to tracking and monitoring students' progress through regular assessment (Gruba & Hinkelman, 2012). According to Wentworth & Middleton (2014), despite the merits of technology in education, its misuse can affect negatively the teaching-learning process. The researchers claim that over-reliance on technology in education may deteriorate students' competencies, dehumanize education, isolate the student from the social context where learning occurs and deepen social inequalities between the ones who possess technological devices and those who do not. Connectivity problems can also hinder the process of online learning (Al-Zumor et al., 2013). To achieve a purposeful blended learning context and to address the negative aspects of technology, Wilkins (2014) suggested that students need to be presented with opportunities for interaction even while learning online, encourage tech-savvy students to produce and create digital contents to develop their digital literacy and foster intercommunication and monitoring. Thus, Instructors need to ensure that their students are able to use technology effectively through modeling and providing technical support for those who lack technological skills.

## **Conclusion**

This chapter has tackled the place of blended learning in English language education. Blended learning is placed at the nexus of face-to-face instruction and online learning. Starting from the assumption that learning is a continuous process, the major aim of blended learning, therefore, is to combine dual learning contexts to increase opportunities for students to maximize their interaction and learning through enabling them to study beyond classroom education. Thus, the implementation of blended learning in higher education is not a linear process since it requires careful steps and considerations on the part of the teacher. Achieving the optimum blend is based on four main cornerstones. The latter encompass the significance of incorporating dual learning contexts, the benefit of

considering students' characteristics, the potential of creating collaborative spaces for students, and flexibility of time and place. The design of blended learning courses is heavily based on the needs and learning styles of the students, learning situations and learning objectives. The diversity of learning contexts and needs encountered in higher education gave birth to the development of various models that can facilitate the design process of blended learning for teachers, and the model that is more suitable for the present study is Hack's Instructional Design Model for Blended Higher Education. Nowadays, with the advent of ICTs, pedagogical practices are moving towards new tendencies that hinge on improving educational assessment and revisiting teacher's and students' roles. In blended learning environment, the teacher, on the one hand, is required to be a counselor, a guide, and a catalyst rather than a direct source of knowledge. On the other hand, students need to be independent and responsible for their own learning specially focusing on literacy skills, essential for achievement in higher education. The next chapter deals with developing students' literacy skills within a collaborative blended learning framework.

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**CHAPTER 2:**  
**DEVELOPING LITERACY SKILLS**  
**WITH A COLLABORATIVE**  
**BLENDED LEARNING**  
**FRAMEWORK**

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**Chapter 2**  
**Developing Literacy Skills with a Collaborative Blended Learning**  
**Framework**

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## **Introduction:**

This chapter addresses the issue of developing literacy skills with a collaborative blended learning framework. It begins by laying out the theoretical dimensions of literacy skills through highlighting the different definitions that underlie reading and writing and stressing the different strategies students employ in order to enhance their reading and writing ability. In this respect, the role of collaborative blended learning (face-to-face collaborative learning instruction and online-learning) will be highlighted through looking at how it contributes to the development of students' reading and writing skills. Besides, the learning activities that will be done in face-to-face learning along with online learning, conceived as a meditational tool, will be explained and clarified. Thus, this chapter suggests that literacy learning is not a solitary individual endeavor but a social act where collaboration and scaffolding contribute to the development of students' reading and writing ability.

### **2.1. Defining reading ability:**

It is a widely held view that reading ability is a complex undertaking since different key processes need to be merged in order to be developed. It requires complex thinking, specific reading strategies, and interaction. In the field of language learning, reading ability represents a crucial aspect in determining students' success in school in general and in higher education in particular (Jarvis & Pastuszka, 2008). Hence, EFL students rarely need to speak the target language in their daily life, yet they may need to read it to have access to information, knowledge and learning resources (Eskey, 2005). Reading ability, as claimed by many researchers (e.g. Nuttal, 1982; Urquhart & Weir, 1998), is not a linear process since it embodies a multitude of processes and can be used interchangeably with reading skills. For Urquhart and Weir (1998), the reading skill is considered as a cognitive ability that allows the reader to interact with the text in order to achieve reading comprehension.

Reading was first defined in terms of an encoding-decoding process as Nuttal (1982) points out: "In reading, the main purpose is the extraction of

meaning from writing. Our business is with the way the reader gets a message from a text” (p. 4). Hence, reading ability was perceived as a decoding activity, or more precisely a combination of decoding and oral comprehension skills, whereby the reader has to decode words and utter them correctly to achieve meaning (Hoover & Gough, 1990 cited in Laraba, 2007).

However, recent research has revealed that understanding what one reads entails more than decoding plus oral language comprehension (Duke & Pearson, 2002). In fact, decoding words cannot guarantee or achieve understanding of a text. According to Hammerberg (2004), as readers get involved in reading more complex texts, their ability to decode and comprehend the text decreases. He further opines: “the construction of meaning is an interactive process, more so than merely decoding the words, saying them aloud in your head, and assuming comprehension ‘happens’ when the words are heard” (Hammerberg, 2004, p. 650). Starting from these claims, the cognitive or psycholinguistic perspective came as a reaction to the idea of mechanical decoding because it fosters the view that language and thought are in constant interaction. In order for the reader to achieve a full understanding of the text, he/she has to grasp and make sense of the text in hand through applying reading strategies and approaching a reading task as a process of pre- while and post reading tasks. This is supported by Goodman’s (1975) perspective which purports that “there is thus an essential interaction between language and thought in reading. The writer encodes thought as language and the reader decodes language as thought” (p. 12 quoted in Piqué & Viera, 1997, p.152).

Research grounded in cognitive theories of reading assumes that successful readers need to have cognitive abilities in order to accomplish text comprehension. Therefore, readers, who show understanding of a text, are likely to establish meaningful connections between texts, their experiences, and prior knowledge. Moreover, through engaging as active processors, readers are able to monitor their understanding through previewing, questioning, reflection, and negotiation of meaning, and they can read selectively in order to achieve their set goals (Anderson & Pearson, 1984). In this regard, it can be said that reading from

a cognitive perspective is perceived as a process of meaning construction as a result of mental operations that students need to undergo.

Furthermore, research on reading has marked a shift from considering reading as a psycholinguistic activity to a more sociocultural activity which highlights the importance of the context in the reading process (Gee, 1992). This view stems from sociocultural theory which suggests that reading encompasses four indispensable elements which consist of the reader, the writer, the text, and the context. As noted by Winch et al. (2010), “the reader, the writer, and the text are involved in the dynamic interplay that is the act of reading” (p. 31). But, this view does not exclude the cognitive strategies that are employed by the reader. From this perspective, the text is not plain; it presents various interwoven aspects such as conveying written language and visual components to be interpreted (Yassine, 2012; Kress, 2010) and which can help in activating students’ background schemata. Since readers construct meaning based on their knowledge of language, text and the context (Winch et al., 2010), they are considered to be active in the process of reading and in constant interaction with the text and social agents (such as peers or tools). The latter can facilitate reading comprehension and make readers active producers of meaning rather than passive recipients of information. Hence, reading is a complex skill to be defined. In fact, it does not solely involve decoding plus oral language, but it is a combination of cognitive processes and sociocultural tenets. It can be said that reading is a more complex process constituting of a meaningful interplay between the reader and his cognitive processes, the text and the context. These definitions led to the emergence of different reading models, which are discussed in the next section.

### **2.1.1. Reading models:**

#### **2.1.1.1. Bottom-up model:**

FL reading can be traced back to Goodman’s influential approach which sees reading as a guessing game (Goodman, 1996). The latter merely falls under the encoding-decoding process whereby a reader reconstructs meaning out of

decoding the writer's words to achieve comprehension (Carrell & Eisterhold, 1983). Decoding print, which includes reading the printed words, is often represented as the lowest level of the bottom-up process while the highest level is related to assigning meaning to the words. Gough (1972), for instance, states "the sequence of processing is from letters to sounds, to words, to sentences, and finally to meaning" (Gough, 1972, p. 58). The reader approaches each letter or grapheme as it is encountered. The latter is linked with the phonemes (the minimal units of meaning in the sound system) of the language which in turn are combined to form words. Meaning is assumed to be originated from the said process. According to this model, readers need to be taught to use the systematic correspondences between written and spoken symbols to be able to construct meaning. However, Smith (1971) questions the usefulness of Gough's view of the reading process, claiming that one of the shortcomings of the bottom-up approach is that it does not take into consideration the fact that "there are at least 166 different grapho-phonetic rules covering the regular spelling-to-sound correspondences of English words and that these are not easy to teach" (Smith, 1971, p. 60). Moreover, the bottom-up model is also related to the identification of the different grammatical forms such as conjunctions, substitution, and lexical forms such as vocabulary and word recognition which can help in decoding skills. Thus, the key premise of the bottom-up approach is that reading is a process of decoding verbal constructions into their aural equivalents.

#### **2.1.1.2. Top down model:**

As a reaction to the bottom-up model, the top-down model stresses the fact that readers generate hypotheses and build inferences out of their prior knowledge (Hudson, 1982). Through predicting, inferring, and focusing on meanings, readers can achieve full focus on the information presented in a text (Grabe, 1991). The top-down model is explained by Goodman (1996) as a process involving "predicting", i.e., anticipation of what is coming next, "sampling", i.e., analyzing and revising the anticipation and "confirming", i.e., making inferences to activating background knowledge. The reader is engaged in

a cognitive interaction with the text where reading strategies are applied to ease and achieve reading comprehension. Central to the top-down processing, Krashen's input hypothesis plays an important role in emphasizing the significance of comprehensible input in helping readers achieve successful reading comprehension. As a result, "input hypothesis is of crucial importance since it attempts to answer a question that is important both theoretically and practically: How do we acquire language?" (Krashen, 1981, p. 32 quoted in Doghonadze, 2017, p. 08). Referring to the input hypothesis, in order for readers to go beyond linguistic competence, the input should be sufficient and comprehensible that is "i+1". In addition, it should reflect students' linguistic level because meaningful input leads to successful second language proficiency (Krashen, 1985 cited in Doghonadze, 2017).

Moreover, Oller (1979 cited in Laraba, 2007) highlights the significance of taking into account the combination of psycholinguistic factors in explaining how students read. He argues that there is a close link between knowledge of the linguistic forms and our knowledge of the world. This psycholinguistic interaction suggests that when a sequence of linguistic elements is predictable, the text will be easily read and processed. In this way, Eskey (1988) opines that there should be an interactive process "in which both of these kinds of processing complement each other, and in which reading by less than proficient non-native speakers is represented by relatively strong bias towards text driven or bottom-up processes" (p. 98). Yet, the reader needs to rely on top-down (starting with making predictions) and bottom-up processes in order to accomplish full understanding of a text. The reading process is believed to start from making predictions (which are rooted in schemata) of the topic being read. Schema, which is defined as a structural network of mental information (Pipia, 2017), plays a crucial role in accomplishing successful reading comprehension because it consists of knowledge of the world that provides information for comprehension, acquisition and memorization (Anderson & Pearson, 1984). In this regard, "to understand comprehension, the reader focuses on the relationship between input (What is in the printed page) and the immediate perception of the

situation that the reader is in” (Pipia, 2017, p. 08). The interaction between the reader’s cognitive and linguistic processes leads to an interactive process between the text and prior knowledge. This is reflected in the interactive model which is discussed in the subsequent section.

### **2.1.1.3. Interactive Model:**

The interaction between top-down and bottom-up processes is related to the interactive model. According to this model, information or meaning is derived from various sources such as lexical, orthographic, syntactic, semantic knowledge, and schemata (Grabe & Stoller, 2013). As Weber (1984 cited in Patricia et al., 1998) argues: “the interactive models...give emphasis to the interrelations between the graphic display in the text, various levels of linguistic knowledge and processes, and various cognitive activities” (p. 113). EFL students can use top-down processing to compensate for the deficiencies in bottom-up reading to achieve meaning out of the text (Grabe & Stoller, 2013). Thus, students can rely mainly on textual clues (hints that are given to help define a difficult word) and anticipate the meaning that is behind the text (Grabe & Stoller, 2013).

Since schema theory is based on cognitive and linguistic factors, we can say that it combines bottom-up and top-down processes. In this context, bottom up processing is activated by the reader when the input is presented. However, top down process (or concept driven) is adopted when the reader is engaged in forming mental structures based on his/her background knowledge. Widdowson (1983) approached schema theory from an applied linguistic point of view, emphasizing two levels of language. These include a systemic level, which involves the phonological, morphological and syntactic elements of the language, and a schematic level, which is related to background knowledge. This classification paved the way to the emergence of different schemata such as content schema, formal schema, mental schema and linguistic schema. Content schema is related mainly to the reader’s knowledge about the topic of the text; however, formal schema refers to the different structures and criteria of a text. These include text genre, types, register, and organization. While linguistic

schemata have to do with cohesion and coherence (Grabe & Stoller, 2013), mental schemata shape the readers' representation and understanding of the text. Yet, this understanding can be hindered if readers are exposed to texts that convey culture-sensitive aspects which may lead to communication breakdowns (Steffensen, 1986).

A number of studies (e.g. Dornyei, 2006; Grabe, 2009; Ahmadi & Hairul, 2012) were conducted to apply the schema theory to understand how readers achieve successful reading comprehension. The findings of these studies pointed to the prominent role of schema in reading since it facilitates the process of reading through merging different cognitive processes such as predicting, previewing, and inferring to achieve meaning-making. Nevertheless, the researchers highlighted the fact that schema alone is not sufficient in achieving understanding because the dynamic and complex nature of reading entails more than using linguistic or background knowledge in determining comprehension. Hence, collaboration with peers and using meditational tools are found to have a direct bearing on developing students' reading skill. The next section is about defining reading from a sociocultural stance.

### **2.1.2. The Reading skill from a Vygotskian perspective:**

From the sociocultural perspective as defined by Vygotsky (1978), the reading skill is perceived as a process of making meaning in transaction with texts and a social activity that is best enhanced by peers and tools (Goodman, 1996). The sociocultural context in which readers practise the reading activity can facilitate the internalization of cognitive strategies as well as help achieving successful comprehension. In the process of reading, students "construct knowledge about the meaning of the text from different sources or 'cue systems'" (Winch et al., 2010, p. 31). These cue systems include scaffolding, mediation and collaboration. Consequently, as noted by Freebody and Luke (1990), meaning is not solely a cognitive act, but it also emerges from the context in which the reading activity occurs.

As noted by Urquhart and Weir (1998), reading skills are text-oriented and arranged unconsciously by the reader and can be developed by the use of reading

strategies which are viewed as reader-oriented and are used consciously to solve reading problems. Besides, reading skills entail a reader to utilize all of his/her developed cognitive capacities (attention, memory), abilities (self-efficacy as a reader, fluency), knowledge (vocabulary, topic knowledge) and different experiences (Freebody & Luke, 1990). They consist of reading for main ideas, reading for details, reading for reference and vocabulary, and reading for inference (Kirmizi, 2010).

However, it is necessary to mention that the text is not solely related to the linguistic level, but also approached from the visual level (Yassine, 2012). The text presents written language and visual components to be taken into account for interpretation or to activate students' background schemata of a certain topic. Therefore, the reader constructs meanings based on his/her knowledge of language, text and the world. The author conveys intentions and purpose to the act of writing, and the sociocultural context affords both cultural tools and advanced partners to facilitate text comprehension through feedback, group discussion and scaffolding (Serafini, 2012). Peers and technological tools are also considered as social agents that contribute to improving the use of reading strategies, enhancing awareness of the reading process and promoting students' reading outcomes. Therefore, the context plays a crucial role in achieving text comprehension because a context which fosters collaboration over individualization can help readers construct meaning of the text as a result of engaging in meaningful interaction with their peers or through mediation by helpful tools (such as technology). According to Vygotsky (1978), students need to have their learning *scaffolded* by more knowledgeable others in order to learn challenging topics.

Reading, as discussed above, is no more perceived as a solitary static activity. It is, in fact, a dynamic, complex and social skill which constitutes an amalgamation of cognitive and social processes. Reading can be described as a socio-cultural act debated between text, reader and context (Winch et al., 2010). It can be said that the reading skill entails the use of cognitive processes in addition to considering the social context in which the reading activity takes

place. Besides, it is a thinking process which involves making sense of the reading activity, connecting the ideas in the text to prior knowledge, and employing reading strategies to achieve understanding. The next section discusses awareness of the reading process, which is also believed to enhance students' reading outcomes.

### **2.1.3. Awareness of the reading process and reading strategies:**

Research has emphasized the fact that skillful readers approach the reading task as a process of pre, while and after reading. The reading process implies the use of reading strategies such as planning, monitoring comprehension, applying thinking aloud, questioning and evaluating the text (Schmitt, 1990; Channa et al., 2015 cited in Doghonadze, 2017). Setting objectives for reading a text is also necessary for students to develop their reading comprehension (Urquhart & Weir, 1998; Schmitt, 1990). Hence, students need to clarify the goals behind the reading which may involve getting information or the gist, reading for details, improving vocabulary or sentence structures, analyzing the usefulness of the text, and answering text-related questions.

Aydin et al. (2011) conducted a comparative study in different schools to examine the reading strategies employed by students from different countries (Finland, Korea, Canada, Australia, New Zealand and Turkey). The findings revealed that skillful readers were able to make implicit knowledge explicit, determine the main idea (s) of the text through analysis of the different parts of the text, and spent more time working on implicit ideas in the text through interpretation, activating prior knowledge and relating what was read to their own experiences. Supporting these findings, Walters (1982), for instance, postulates that:

Good readers utilise the following strategies when encountering a difficulty in a text. First of all, they read the text slowly, pausing to consider what they have read. They then reread the text, looking from one part of the text to other parts in order to

make connections between these different parts, and to make a mental summary of what they have read.

(Walters, 1982, p. 71 quoted in Laraba, 2010, p.143)

Urquhart and Weir (1998) identified five types of reading strategies; these include: browsing, scanning, skimming, search reading, and careful reading. Other researchers (e.g. Schmitt, 1990; Corder-Ponce, 2000) consider summarizing and making inferences as reading strategies. These different reading strategies are described in detail:

**Previewing** aids the reader to activate background schemata of the text. The reader employs previewing strategy to set a purpose for reading. During this step, the use of multimodal input/ delivery or technology may help in activating prior knowledge to make predictions about the text. Besides, the previewing strategy helps the reader to find out how the text is organized.

**Skimming** is a reading strategy that helps students extract general ideas within a specific time frame. It can help students identify the main idea of the text.

**Scanning** is defined as reading selectively to accomplish reading objectives (Khalifa & Weir, 2009). It is employed when the reader is required to look for specific information or details within a text such as looking for names, dates, words, etc.

**Making inferences** requires the reader to read between the lines or to use his/her understanding to infer information that is not stated explicitly in the text.

**Summarizing** is a reading strategy that allows students to discern and synthesize information within a text.

The second aspect of literacy skills, which is writing, is defined and discussed in the section below.

## **2.2. Defining writing ability:**

Writing, which is considered as the other half of literacy, has been perceived from both product and process perspectives as a complex and multifaceted skill. Its complex nature constantly urges theorists and researchers to provide adequate description and explanation, and many forms of enquiry

have been summoned to help explain both how writing works, and how it should be learned and developed. It is undeniable that writing is a communicative act whereby students communicate ideas, information and facts with audience (Harmer, 2004) and an interactive act whereby students engage in both thinking and social interaction. For Badger and White (2000), “writing involves knowledge about language, knowledge of the context in which writing happens and especially the purpose and skills in using language”(pp. 157-158). Moreover, writing is conceived as a creative and a discovery process. This view is embedded in the Expressivist view which is based on the premise that writing is a creative act of discovery in which both process and product are equally important to the writer. In this context, Bello (1997 cited in Khalaf Ibnian, 2011) asserted that writing is a continuous process of discovering how to find the most effective and creative language for communicating thoughts and expressing feelings.

Furthermore, writing enables students to think of ways to organize and convey knowledge through relying on cognitive operations. Taking into account writing as a cognitive act, writing is viewed as a problem-solving activity i.e. how writers approach a writing task as a problem and generate resources to solving it. In this respect, writing embodies a number of cognitive operations that help students generate and produce knowledge in a systematic way (Sinclair, 2010). Consequently, Hedge (2000) argues that writing emerges from employing strategies to manage the composing process, and it encompasses a number of activities such as “setting goals, generating ideas, organizing information, selecting appropriate language, making a draft, reading and reviewing it, then revising and editing” (Hedge, 2000, p. 392).

However, the cognitive aspect alone is not sufficient in helping students generate knowledge; thus, stressing the social aspect of writing is highly pertinent. Writing, “is not an act of an isolated individual but a joint endeavor between writers and readers” (Hyland, 2009, p. 31), co-constructed through active interaction between peers and understanding of rhetorical situations. Recent conceptions perceive writing as a social act, embedded in the different

collaborative work and interaction that students engage in. As a result, writing is the most difficult skill to master because it requires various aspects such as linguistic knowledge, cognitive and socio cultural aspects to produce a composition for the purpose of conveying meaning (Lombana, 2002).

According to Matthews et al. (1985), writing skills fall in different categories which consist of organizational, visual, grammatical and stylistic skills. Organizational skills are concerned with the way information and ideas are organized and sequenced within an essay, and visual skills are about spelling, punctuation and format. Besides, stylistic skills revolve around expressing ideas adequately in a variety of styles, vocabulary and sentence structure. Grammatical skills are about the correct use of tenses, prepositions, articles and subject-verb agreement.

### **2.2.1. Writing from a product-oriented perspective:**

Writing, from a product perspective, means producing correct texts rather than focusing on the process that students undergo while writing. For Pincas (1982), the product approach to writing emphasizes the appropriate use of vocabulary, syntax and cohesive devices, and it is considered as an instructional approach that helps students learn grammatical rules through relying on a model text. In this context, the product approach to writing is a traditional approach that urges students to imitate an analyzed model text (Hyland, 2016), and perceives writing “as mainly concerned with knowledge about the structure of language” (Badger & White, 2000, p.154).

The product approach falls into four phases namely: familiarized writing, controlled writing, guided writing and free writing. As noted by Hyland (2003) and Pincas (1982), familiarized writing focuses on “preparing students for actual writing by demonstrating one or other of the skills that are to be practice” (Pincas, 1982, p.78). Students are required to use a text in order to study certain grammatical forms or vocabulary. This stage aims at preparing students for the type of writing that will be produced. In controlled writing, students are required to practise the different learned structures and vocabulary in order to ease the process of writing through matching, re-ordering, and substituting activities.

In guided writing, students are meant to mimic a model text through guided activities. The latter may consist of completion exercises, reproduction exercises, comprehension exercises and paraphrasing exercises (Pincas, 1982). In the last stage i.e. free writing, students are required to write freely through relying on the learned patterns. However, this approach neglects the processes that students undergo while writing such as planning, editing and revising, which may lead students to committing mistakes (Badger & White, 2000). Therefore, it is important to develop in students awareness of writing as a process and the stages involved in this process. This point is discussed in the next section.

### **2.2.2. Awareness of the writing process:**

In the 2000's, researchers dealing with writing started to take into account the mental processes that writers undergo during writing. Through using protocol analysis, researchers came with the fact that writing involves several sub-skills ranging from knowledge of language to audience (Hyland, 2009). Good writers do not rely solely on the notions of creativity and self expression, but they undertake several mental/ cognitive operations in order to arrive at the final product. As a result, it is not sufficient for writers to have a large repertoire of strategies, but they need to display self-awareness of the process of writing (Hyland, 2003).

Writing, from a cognitive perspective, is perceived as a problem solving, recursive, “exploratory and generative process whereby writers discover and reformulate their ideas as they attempt to approximate meaning” (Zamel, 1983,p. 165 quoted in Hyland, 2011, p. 18). Hence, Silva (1990) points out: “writing is basically a matter of arrangement, of fitting sentences and paragraphs into prescribed patterns. Learning to write then, involves becoming skilled in identifying, internalizing, and executing these patterns” (p. 14). From this perspective, writing is viewed as a thinking process whereby students engage in active thinking and problem solving which lead to meaning construction.

In order to achieve the different cognitive operations, students need to be provided with opportunities to practice the writing skill to develop their abilities

to plan, write, and evaluate their productions (Hyland, 2003). They need to be guided to move from the different stages of writing namely pre-writing, while writing and when revising. Flower and Hayes (1981 cited in Hyland, 2009, p. 21) suggested the following:

- Setting goals
- Planning extensively: it is about defining a rhetorical problem, placing it in a context then exploring its parts, arriving at solutions and finally translating ideas on to the page
- All work can be reviewed, evaluated and revised, even before any text has been produced.
- Planning, drafting, revising and editing are recursive, interactive and potentially simultaneous
- Plans and text are constantly evaluated in a feedback loop
- The whole process is overseen by an executive control called a monitor.

In Hayes and Flowers' model (1980 cited in Hyland, 2003), an attempt was made to classify the different activities that take place during writing and their relationships to the task environment and to the writer's cognitive functioning. They advocated that the writer's long-term memory involves a variety of types of knowledge, encompassing knowledge of the topic, knowledge of the audience, and stored writing plans (writing schemata). In the task environment, Hayes and Flower (1980) drew a distinction between the writing assignment (topic, audience, and motivational elements) and the final text produced. In this perspective, they emphasized four writing processes:

- In the **planning process**, the writing assignment and long-term memory are perceived as input, which leads to producing a mental plan for the topic as output. Starting from the fact that writing is a multifaceted activity, planning involves sub-activities that constitute generating ideas, organizing them, and setting goals.
- The **translation process** aims at transforming the outline to produce a text expressing the planned content. This can be achieved through drafting to perceive a different way of modifying or organizing ideas.

- In **reviewing**, the text produced is open to modifications for the purpose of improving it by correcting errors or proofreading. It is related to rereading, analyzing, and reviewing the written draft.
- The **monitoring** process highlights the metacognitive processes that relate the previously mentioned phases (planning, translating, and reviewing) through checking the final product (in terms of punctuation, spelling, word order and choice) to ensure that there are no inconsistencies that may hinder communication.

These processes, as described by Hayes and Flower (1980), may overlap and make writing a recursive problem solving act where information is developed by a system of function-specific components. The process approach led to the emergence of key assumptions underlying writing. As noted by Olson (1999), approaching writing from a process perspective reinforces the idea that writing is perceived as a series of activities whereby the writer undergoes a recursive process to achieve the final product. It also stresses the fact that writing is a social endeavor rather than a solitary activity where peer revision and feedback can enhance the quality of the written work. Therefore, effective composition instruction needs to focus on guiding and scaffolding students to ameliorate their writing ability through raising their awareness of the writing process (Bloom, 2003).

Researchers investigating the process of writing relied on writers' verbal reports while writing, retrospective interviews, questionnaires, think aloud protocols, and task observation to unveil individuals' differences in employing strategies (Van Den Bergh & Rijlaarsdam, 2001; Petri & Czarl, 2003). According to Van Den Bergh & Rijlaarsdam (2001), it has been found that expert writers employ more effective planning and revising strategies than novice writers. As a result, two types of strategies entitled knowledge-telling and knowledge-transforming were generated to provide an explanation for the strategies used by expert and novice writers. Through engaging in the writing process, skilled writers consider the writing task as a problem solving activity (in terms of information processing). They tend to problematize the writing task through

adopting a knowledge transforming strategy (Bereiter & Scardamalia, 1987 cited in Alamargot & Chanquoy, 2001). According to Bereiter and Scardamalia (1987), this can be achieved through developing purposes or goals related to content and rhetoric which may enable writers to reflect on and evaluate their ideas. On the other hand, novice writers adopt a knowledge telling strategy which focuses more on a simplified approach to writing consisting of prompts that facilitate generating ideas. Hence, students need to engage in various writing tasks and reflect on their own writing to sharpen their writing skill and develop their ability to write effectively. Approaching writing from a process-oriented perspective also highlights the advantage of feedback and revision for developing content, structure, and expression. However, it did not clarify how students make a cognitive shift from knowledge telling to knowledge transforming strategy.

It seems that writing is a multifaceted skill since it mingles different stages and elements (such as experience, background knowledge, planning, and revision). Yet, many scholars overemphasize the psychological aspect and approach writing as a solitary individual endeavor rather than a social act (Hyland, 2009; Badger & White, 2000). Thus, this approach does not bring a full account of the different social factors that may contribute to guiding, creating and developing student's writing skills. It seems pertinent to admit that "students not only need help in learning how to write, but also in understanding how texts are shaped by topic, audience, purpose, and cultural norms" (Hyland, 2003, p. 14). This perspective leads us to consider the writing skill as a social activity that is best reinforced via scaffolding, collaboration and mediation. This Vygotskian perspective is discussed in the subsequent section.

### **2.2.3. The writing skill from a Vygotskian perspective:**

Recently, writing has been approached and researched from a socio-cultural angle in order to help students develop awareness of the writing process. According to Yang (2014) "writing is viewed as a social act" (p. 75) as students' interaction and collaboration play a significant role in generating ideas and assessing writing outcomes. This view is grounded in sociocultural theory which postulates that the learning process is shaped and enhanced when students work

together on a meaningful activity, and when they rely on mediating tools to facilitate the internalization of strategies (Vygotsky, 1978). Students' cognitive development, therefore, springs out of meaningful social interaction as students get scaffolding, mediation and guidance from peers, teachers, or mediating technological tools (Ohta, 2001).

Considering writing as a social activity highlights the importance of combining the writers' different experiences and the impact of the immediate context on how writing should be perceived and approached. This viewpoint moves beyond writers' internal mental processing to consider the physical contexts in which the writing activity takes place and explain the role of the context in developing students' cognition (Flower, 1989 cited in Hyland, 2009). As Prior (1998 quoted in Hyland, 2016) rightly remarks:

Writing happens in moments that are richly equipped with tools (material and semiotic) and populated with others (past, present and future). When seen as situated activity, writing does not stand alone as the discrete act of a writer, but emerges as a confluence of many streams of activity: reading, talking, observing, acting, making, thinking and feeling as well as transcribing words on paper.

(p. xi)

This view of writing as a situated act further posits that writing is a communicative act between the writer and the reader. The writer, hence, is not an isolated individual; he is in a constant interaction with an audience. The success of any text is related to the extent to which writers answer the needs or demands of readers as Nystrand (1989) purports:

The process of writing is a matter of elaborating text in accord with what the writer can reasonably assume that the reader knows and expects, and the process of reading is a matter of predicting text in accord with what the reader assumes about the writer's purpose. More fundamentally, each presupposes the sense-making capabilities of the other. As a result, written

communication is predicated on what the writer/reader each assumes the other will do/has done. (p. 75)

For Nystrand (1989), a text is based on meaning which is communicated with the reader. Thus, it has to be unambiguous in order to ensure the transmission of knowledge. Accordingly, meaning emerges from a socio-cognitive process rather than from a cognitive process only. In fact, the process of writing encompasses creating a text that readers will recognize and enable them to draw conclusions and generate assumptions. Skilled writers are the ones who revise their productions for any ambiguities that may impede the process of understanding; they undergo a number of recursive steps such as planning, composing, and revising to provide great elaboration and explicitness (Hyland, 2009). Through collaboration, scaffolding and mediation, students can engage in a joint activity which fosters co-construction of texts, helps in setting purpose and raises audience awareness. According to sociocultural theory, there is a dialogic process between the writer and the reader, thus, “each utterance refutes, affirms, supplements, and relies on the others, presupposes them to be known and somehow takes them into account” (Bakhtin, 1986, p. 91). Leveraging opportunities for students to collaborate can enhance the sense of audience through using rhetorical questions to anticipate readers’ problems with a production (Storch, 2005). The key tenet, therefore, is to reinforce an orientation towards the affordances (such as peer, or technological tools) provided by the context in enhancing students’ writing ability and skills. Therefore, in light of the above argument, we would like to suggest an instructional framework which aims at developing students’ literacy skills for the present study.

### **2.3. Collaborative blended learning framework for developing literacy Skills:**

This instructional framework is composed of dual learning environments. The first learning context is based on face-to-face instruction which consists of collaborative writing and collaborative strategic reading, and the second learning

milieu involves online learning. The first learning context i.e. face-to-face instruction is described below.

### **2.3.1. Face-to-face instruction:**

#### **2.3.1.1. Collaborative writing:**

Twenty-first century pedagogy urges researchers and practitioners to achieve the democratizing of knowledge in EFL classrooms through the use of collaborative writing. In essence, Storch (2005) claims: “to truly prepare students for collaborative writing may require a re-conceptualization of classroom teaching” (p. 169). Collaborative writing implies having students to work in small groups to produce a shared piece of written production or different writing productions (Ballard & Clanchy, 1992). In the past, collaborative writing was not fully applied to the different writing processes, that is, it was restricted to brainstorming and peer reviewing. Nowadays, however, a number of researches have drawn interest to the advantages of collaborative writing activities, which are based on group work, on the whole writing process (Storch, 2005).

While the majority of researchers have highlighted the importance of collaborative writing in EFL context, others (e.g. Ballard & Clanchy, 1992; Nelson & Carson, 1998) have argued that collaborative writing is a difficult and complex task, especially for EFL students. This is because group work requires a lot of effort on the part of the students in terms of sharing work together and giving feedback. Moreover, critics have also argued that one of the weaknesses of peer reviewing is that the focal point can be on the product of writing rather than the process (Villamil & de Guerrero, 1996). In collaborative writing, students tend to focus more on errors at the word and sentence level rather than the process of writing in terms of generating ideas, revising and editing (Hirvela, 1999). However, it is worth noting that recent research has pointed to the pros of peer writing, for it can raise students’ audience awareness, language awareness and reading and writing outcomes (Dobao, 2012). It is true that, “Writing in the English-language classroom can become unreal if it is only ever produced for one reader, the teacher, and if its purpose is limited to enabling the

teacher to assess the correctness of the linguistic forms used” (Hedge, 1999, p.61).

Furthermore, starting from the fact that higher cognitive functions appear first on the social level, and only later on the psychological level, the individual’s cognitive and mental developments stem from engaging in meaningful social interaction (Vygotsky, 1978). Studies grounded in sociocultural theory postulate that students can benefit from each other as they engage in the process of scaffolding which impacts positively their cognitive functioning (Ohta, 2001; Swain & Lapkin, 1998). Thus, more capable or advanced peers can scaffold and assist the novice ones to move from actual level of development to potential level of development (Axford et al., 2009). This can be achieved through immersing students in group or pair work where they can be propelled to participate in different activities through dynamic interaction and co-construction of knowledge (Storch, 2002; Dobao & Blum, 2013). For Gebhardt (1980), collaboration needs to be integrated in every aspect of the writing process. He states that “it seems to me that collaborative writing strategies should be applied to finding a promising topic, generating details on the topic, and locating the intended audience for a paper” (Gebhardt, 1980, p. 73).

Students are heterogeneous in nature; each student has his own attributes, strengths and weaknesses (Dobao, 2012); thus, “when working together, students can provide scaffolded assistance to each other and, by pooling their different resources, achieve a level of performance that is beyond their individual level of competence” (Ohta, 2001, quoted in Dobao, 2012, p.41). This view is also supported by Elbow’s (1973) claim which purports that “two heads are better than one because two heads can make conflicting material inter-act better than one head usually can” (p. 49). It has been found that collaborative learning strategy is effective in the first stages of writing such as brainstorming, discussing, and outlining as well as in the final stages in terms of peer-editing, peer-feedback and peer evaluation (Storch, 2002 & 2005). In the process of peer-reviewing, students are expected to evaluate each other’s final drafts, get

feedback from their peers, and give suggestions in order to modify or expand on their own writing (Lundstrom & Baker, 2009). The use of peer response in the editing phase is essential in helping students gain a deeper understanding of the writer's style and benefit from negotiation of meaning for the purpose of producing or refining ideas.

Various studies have been conducted to investigate the impact of collaborative writing on developing students' writing ability. Hanjani and Li (2014) investigated EFL students' interactional dynamics during a collaborative revision activity and examined the impact of jointly performed tasks on the participants' writing performance. The study was conducted at a private university in Iran. The findings revealed that the participants applied various functions in their negotiations such as scaffolding and peer-evaluation to revise their compositions for improvement. The researchers also claimed that all participants benefited from the joint revision task regardless of their level of L2 writing proficiency. The study advocated the implementation of collaborative revision in EFL writing pedagogy to enhance students' writing and revision skills. However, the study consisted of a small sample size (10 participants only) which may have affected the reliability of the results, thereby leading to a higher variability and bias. With regard to the treatment, the use of collaborative writing was limited to the revision stage only. The study could lead to more significant results if it integrated collaborative writing in all stages of the writing process.

Yang (2014) examined the mediational means used by ESL students in collaborative writing. The study took place at two Canadian universities. The results, which emerged from the analysis of interviews and class observation, revealed that the participants relied on dialogic talk, questioning, and negotiation which facilitated their thinking process. Besides, the study demonstrated that the participants adopted varied group rules such as task division, group harmony, and leadership which mediated the process of collaborative writing. Yet, Yang's study relies too heavily on qualitative analysis of the mediated means employed by ESL students. Also, the analysis does not take account of the heterogeneity of the students since the participants had the same first language and cultural

background nor does it examine the effect of the mediated means on developing the participants' compositions. Nevertheless, the results of the aforementioned studies are in accordance with Widdowson's (1983) perspective which postulates that when students work together, they become involved in the process of dialoguing, generating concepts, and drawing conclusions, thereby leading to constant feedback.

Watanabe (2014) also investigated the relationships among Japanese-background university students' verbal processes while writing their essays. The study was also meant to identify the students' opinions about using collaborative and independent writing. The results of the study demonstrated that the participants who engaged in collaborative writing outperformed those who approached the writing task individually. The study advocated the fact that collaborative writing helped students produce more language-related, text-related productions, and students used different verbal scaffolding strategies to assist each other. This study shares the same perspective concerning the significance of collaborative writing in developing students' writing ability since it offers students the opportunity to socially interact in order to enhance their writing skills through relying on collaboration, scaffolding and constructive feedback.

To summarize, the pedagogical merits of collaborative writing have been emphasized as leading to a higher quality of writing (Storch, 2005), audience awareness (Leki, 1993), and co-construction of knowledge (Donato, 1994). In addition, collaborative writing enhances students' motivation (Swain & Lapkin, 1998), and raises their awareness of sentence structure, accuracy, vocabulary usage and the importance of constructive feedback (Storch, 2005; Dobao & Blum, 2013). Collaborative strategic reading has also been dealt with and implemented in face-to-face instruction by instructors. This is discussed in the following section.

#### **2.3.1.2. Collaborative strategic reading:**

Collaborative Strategic Reading (CSR) was originated and developed by Klinger and Vaughn (1998). It merges modification of reciprocal teaching and collaborative learning strategy (Johnson & Johnson, 1987). This instructional

practice requires students to work in collaborative groups through applying three reading processes namely before, while and after reading and which consist of four strategies to help students get involved in the different processes of meaning making. These four strategies, which encompass preview, click and clunk, get the gist and wrap up, have been recently described by Cavendish and Hodnett (2017). In the pre-reading stage, **previewing** the text helps students activate background schemata, boost their interests, and ease the process of making predictions about the text. One way to apply the previewing strategy is by looking at the different components of a text such as headings, subheadings, visuals, and key words in order to predict what the text will be about and help students brainstorm some ideas about the topic. The teacher can stimulate students' understanding through asking some leading questions in order to engage them in group discussion. Moreover, during the reading stage, **click and clunk** represents the second strategy of collaborative strategic reading which monitors students' understanding in terms of words, concepts or expressions that may impede the process of reading comprehension. As noted by Cavendish and Hodnett (2017),

Clicking and clunking is designed to teach students to be aware of when they understand the text, and when they do not understand. Students self-monitor their understanding (the "clicks") as they are reading. When students find a word or concept that they find difficult to understand, it is a "clunk."

(p. 2)

Thus, through applying fix-up strategies, students can work in groups by using retelling techniques and clues from the text to understand the meaning of the idea or concept from the context.

Furthermore, **get the gist** is the third strategy of collaborative strategic reading which requires students to identify the main ideas of the text. The objective of this strategy is to teach students how to show their understanding of the reading through restating their conclusions in their own words within collaborative groups (Klingner & Vaughn, 1998). In the post reading phase,

**wrap up** is used to leverage opportunities for students to extract the main points and key ideas tackled in the text through applying metacognitive strategies such as monitoring and evaluating comprehension. In order to enhance students' understanding of a certain reading passage, students are required to generate questions and other peers can provide answers about what they have learned or understood. **The wrap up** strategy can be taught by motivating students to act like teachers and think of questions they would like to ask about the reading passage. However, questions need to be clear and meaningful in order to ensure a purposeful classroom discussion. Through relying on collaborative strategic learning logs, students can take notes of what they have learned from the assignment and write down the most important ideas, vocabulary or expressions in order to be used later in the writing assignment. Students will have the opportunity to share their understanding with peers; this eventually helps the teacher to check his/her students' levels of understanding and improve the effectiveness of his/her teaching practices.

A substantial number of studies have examined the effect of collaborative strategic reading on developing students' reading ability. In an experimental study, Fan (2009) investigated the impact of collaborative strategic reading on EFL Taiwanese students' reading comprehension. Through using a questionnaire, a test, and an interview, the findings revealed that the incorporation of CSR was useful and effective in improving students' reading comprehension and understanding. The participants were able to successfully get the gist, find the supporting details and answer comprehension questions. Besides, engaging in collaborative learning provided the participants with scaffolding, assistance and feedback and helped them in the process of constructing knowledge. Furthermore, in a descriptive study, Lustyantje (2017) described the extent to which collaborative strategic learning can enhance students' reading comprehension of French texts. The study was conducted at the University of Jakarta, Indonesia. Findings of the study indicated that the students showed higher satisfactory reading outcomes as a result of CSR. The different reading processes were improved, particularly activating schemata, identifying

main ideas, deciding the meaning of difficult words, making implicit knowledge explicit, and drawing conclusions. In a study aimed at mixing reciprocal teaching and collaborative learning, Novita (2012) investigated the use of CSR as a strategy to develop the teaching of reading comprehension. The findings indicated that there was a significant improvement of students' achievement after implementing CSR in the reading process.

In collaborative strategic reading, the teacher's role is vital in helping students get accustomed to the different strategies applied before, during and after reading a text. Axford et al. (2009) point out: "the teacher is required to take an active role in making explicit to learners both what strategies effective readers/writers use; and also how to use these strategies to build skills for interrogating a text and uncovering its layers of meaning" (p. 9). This can be accomplished through modeling or relying on teacher-led activities. Once students have internalized the required strategies, students need to be assigned specific roles to ensure that the group members work towards a common goal. According to Cavendish and Hodnett (2017), possible students' roles include:

- **Leader:** the student needs to play the role of a leader in order to guide his/her group members in the implementation of the reading strategies. This can be done by identifying the different parts of the text and which strategy to apply.
- **Clunk expert:** the student reminds the group of the various steps when trying to explain or guess the meaning of a difficult word through using "clunk cards". Each clunk card represents a fix-up strategy. There are four fix-up strategies namely: (a) using the context clues: reread the sentence with the clunk and look for key concepts to figure out the word, (b) rereading the sentences before and after the difficult word to look for clues, (c) identifying an affix in the word to help with comprehension, and (d) breaking the word apart to look for root words.
- **Gist expert:** Guides the group to identify the most important ideas of the passage they are reading.

- **Reporter:** in the wrap-up step, the student shares the group's important ideas.
- **Announcer:** This student invites his/her group members to read or share ideas during the activity.

It can be said that CBL also integrates aspects of the competency-based learning approach which aims at making students autonomous and active in their learning process through highlighting the essential competencies needed for this digital age (Bates, 2015). These can include communicative and social competencies, intellectual competence, digital competence and critical thinking skills.

In addition to face-to-face instruction, online learning is an integral part of CBL. Research in online learning has targeted both reading and writing development and is fully discussed in the next section.

### **2.3.2. Online learning:**

#### **2.3.2.1. Online learning and reading development:**

With the advancement of using ICTs in the learning process, online learning has been widely used in higher education to enhance teaching practices and improve student learning. It has equally been opted for to scaffold student learning beyond the classroom and upgrade students' language skills among which the reading skill. Online learning offers a plethora of opportunities for students to practise the reading skill beyond the classroom as Quesada (2005) opines:

Students can be exposed to extensive reading and writing through conceptualized practice. That is, learners can exchange messages and discuss readings or they can read web-based stories with both audio and video text exposure, and write comments to other on-line reading peers about relevant details.

(p. 15)

Following Quesada's (2005) view, it can be said that the use of online learning platforms to improve students' reading ability can help readers foster their socio-cognitive strategies. Therefore, students can be involved in synchronous and asynchronous discussion and collaborate with peers to clarify any reading difficulties they may encounter. Relying on synchronous or asynchronous tools (such as instant discussions, forums and chat rooms) in the reading process can equip students with adequate guidance, scaffolding and feedback (Godwin-Jones, 2015). The students can also engage in different reading activities where they can receive instant feedback either from the teacher or their peers, leading to continuous scaffolding. Thus, students can be provided with instructional support that is "designed to provide the assistance necessary to enable learners to accomplish tasks and develop understandings that they would not quite be able to manage on their own" (Hammond, 2001, p. 03). From this perspective, blended learning supports social interaction which is conceived as a process whereby students can collaborate and internalize skills through working jointly. It is through interaction with others, such as peers or learning materials, that students can receive the comprehensible input to acquire the target language (Vygotsky, 1978). Online learning can provide a rich context for collaboration and social interaction in which students can exchange clarifications, knowledge, resources and discuss different perspectives through using synchronous and asynchronous tools. Relying on online learning to develop the reading process posits a further advantage in which the practice of writing becomes blurred by online discussions as students can comment or elaborate on their peers' written entries. Hence, online tasks can help students think, analyze, interpret, and use knowledge and resources to solve learning problems either collaboratively or individually (Diaz, 2012).

Integrating online platforms (such as MOODLE) in the learning process allows students to work at their own pace and engage in various online reading assignments and quizzes. The latter can encompass cloze tests, question-answer tests, vocabulary quizzes, multiple choice questions, matching, and true or false comprehension exercises (Ulfiati et al., 2014). Each reading assignment can be

dedicated purposively to improving a specific reading strategy such as previewing, scanning, skimming or summarizing. With regards to developing the students' lexical repertoire, different vocabulary quizzes can be provided to the students in addition to the possibility to use online dictionaries to look up words that can impede comprehension. In order to grade and track the students' progress, online learning platforms can record the work of each student which eases the task for the teacher to give feedback to the students on their performance.

In terms of learning preferences, the teacher can customize the online learning platform to suit his/her students' learning needs and accommodate to their different learning styles, thereby creating motivating resources and activities (Harmer, 2007). In online reading, texts can be supported by videos or illustrations to help students activate their background schemata. According to Mayer (2002), the incorporation of visual and auditory modes in the reading process shows its effectiveness in terms of facilitating text understanding and enabling readers to establish mental representations about the text. While reading, students can rely on different online applications such as e-dictionaries, videos, illustrations, encyclopedias to expand their understanding and maximize their motivation to read.

Variegated studies have been conducted to examine the effectiveness of the use of online learning as part of a blended learning approach to develop students' reading ability. In an experimental study which set out to determine the impact of implementing a blended learning approach on developing ELP (i.e English for Legal Purposes) students' reading skills, Lamri (2015) found that blended learning had a positive impact on Algerian students' reading ability and content knowledge. The researcher highlighted the potential benefits that the MOODLE platform had on improving the quality of teaching and assessing the students' reading ability through iterative formative assessment. He advocated the fact that integrating educational technologies in the teaching-learning process would meet the demands of the LMD system that revolve around learner-centeredness and the use of ICTs to improve students' reading outcomes.

Similarly, Velandia et al. (2012)'s study was conducted in El Libertador public school in Colombia, and it examined the impact of using online learning on developing students' reading comprehension. The researchers concluded that engaging students in web-based activities upgraded their reading comprehension skills in terms of analyzing, evaluating, and interpreting information presented in the text. Through regular practice, students' level of reading proficiency improved and their vocabulary acquisition was enhanced. Equally important, their motivation and enthusiasm were enhanced as students could have access to a new interactive learning environment which is based on social interaction, scaffolding and meaningful input. Likewise, Maleki and Ahangari (2010) investigated the role of blended learning in developing students' reading skills. The study was conducted at Islamic Azad University, Iran. Findings of the study showed that the majority of EFL students expressed a positive perception of the use of online resources in their language program and appreciated the use of different activities to enhance their reading ability.

Yang (2012) also examined the impact of blended remedial reading program on students' reading difficulties. This study was conducted at the University of Science and Technology in central Taiwan and meant to maximize the students' reading achievement level and uncover their perceptions of engaging in blended learning. The researcher opted for an online learning platform that consisted of a dialog box, discussion forum, chat room, and annotation tools to support the teacher-student and student-student interactions. The experimental group was taught through a combination of the face-to-face instruction and online learning. Four reading strategies (prediction, clarification, questioning and summarizing) were introduced to both control and experimental groups. The results of the study revealed that blended learning was effective in enhancing the experimental participants' reading proficiency in terms of applying the aforementioned reading strategies. Besides, the online platform gave them the opportunity to train and practise reading at their own pace. The researcher concluded that blended learning facilitated students' interaction and collaboration through discussing their difficulties with peers and getting constructive feedback.

This study was quite inspiring and provided food for thought for the present study. Developing the writing skill via online learning is also worth examining. This is being done in the next section.

#### **2.3.2.2. Online learning and writing development:**

Online learning is rich with learning resources that are meant to enhance students' writing skills. In this respect, Blosch (2008) holds the view that teachers need to acknowledge the fact that twenty-first century students are considered to be digital natives, and they need to be provided with learning that matches their interests and learning styles. Relying on online learning to improve the writing skill provides different tools and modes such as visual, graphical, and aural and carry potentials for meaning-making (Kress, 2003) that are meant to facilitate the writing task for students. For example, students can watch videos to understand the structure of expository essays, use discussion boards to exchange clarifications with their peers and involve in writing assignments to practise what they have learnt. They can also create writing communities through forums or blogs where they can publish their writings, discuss, and exchange ideas to reach a wider audience (Hyland, 2009). Thus, forums or blogs can be used to foster the expression of ideas in writing, creating both a sense of authorship and participation. This in return can encourage the use of constructive feedback which can help students promote mutual assistance, raise their awareness of the importance of revision and reduce their affective filter (Arar, 2015).

It has commonly been assumed that the integration of technology in writing carries a plethora of pedagogical benefits which relate to enhancing students' motivation to write and developing their language skills. According to Turgut (2009), audience, language awareness, and motivation are best developed via the use of technology since it scaffolds students beyond the classroom and maximizes active learning. The latter can be accomplished by encouraging students to provide peer-feedback, ask and answer questions promptly and participate candidly in different online writing activities to upgrade their writing

ability. This can create an interactive learning context that boosts students' motivation to write, leading to learner-centeredness. Moreover, enabling students to exchange feedback and scaffolding can improve their writing proficiency and linguistic knowledge (Lee, 1997), thereby developing the process of planning and revision (Arar, 2015) and promoting learner autonomy (Choi, 2007). As a result of engaging students in online learning, their ability to set achievable learning goals will be increased and taking responsibility for their own learning will be fostered.

Starting from the view that writing is a socio-cognitive process, research has revealed that online learning can sustain lower-order thinking and prepare students for higher order thinking skills (Yaniawati, 2013; Freeman et al., 2014). Students can be immersed in writing tasks prior to face-to-face learning to help them understand, remember and have some practice before coming to class; this can be done within personalized or collaborative learning contexts. For instance, the use of synchronous and asynchronous tools, such as emails, forums, or chat, may help promote students' interest and confidence in writing, enhance their technological and interpersonal skills, learner autonomy, and generate positive attitudes towards literacy skills (Mabuan & Ebron, 2016). Interactive lessons that are based on videos can help students understand the writing lesson (s) adequately since they can apply to different learning styles, thereby enabling the student to grasp the information easily.

Several studies investigating blended learning have been carried out to examine the impact of online learning on developing students' writing skills. In an experimental study, Keshta and Harb (2013) investigated the effectiveness of using a blended learning program on developing Palestinian students' writing skills. The findings showed that there were significant differences in the mean scores of the test in favor of the experimental group. This difference was attributed to the implementation of a blended learning approach to teaching writing which mixes online learning with face-to-face instruction. The researchers reinforced the fact that teachers need to adopt blended learning in EFL classrooms for the purpose of assessing the students' beyond the classroom

and enhancing their writing performance in particular and academic achievement in general. Moreover, they pinpointed the fact that teachers need to go through training (workshops or courses) on implementing blended learning in EFL classrooms in order to improve teaching-learning practices and create a learning environment that fosters flexible and meaningful learning.

In another study conducted in an international school in Malaysia, Challob et al. (2016) examined the effects of collaborative blended learning writing environment on students' writing apprehension and performance. Through using qualitative thematic analysis, the findings obtained from semi-structured interview, learning diaries and observation revealed that the students had positive perceptions of using the collaborative blended learning writing environment to develop their writing skills. The collaborative blended learning activities helped the students reduce their writing anxiety and improve their writing performance through engaging in face-to-face and online learning via class blog and online Viber discussion. Besides, the different discussions that students experienced assisted them in their writing tasks through exchanging talks and peer-feedback. Yet, the study involved a small sample size (12 participants only) which can limit generalizability.

Similarly, Choi (2007) investigated the role of online collaboration in promoting ESL writing. The study was conducted at a community college of Hong Kong. The results demonstrated that the participants benefited from the blended learning approach to writing in a way that allows them to practise writing both in formal and informal settings. The use of online collaborative writing and face-to-face interaction enhanced the participants' motivation and reinforced their learning strategies as they could approach the writing task through pair or group work. The researcher advocated the view that peer-mediated learning made students think as they write and developed their writing in terms of planning, brainstorming and content. As a result, they were able to develop their language competence and resolve problems which underpin writing. To summarize, the findings of the aforementioned studies revealed the positive impact of using online learning, as part of a blended learning approach,

to enhance students' writing performance through mediation by technology, extended writing practice and fostered constant feedback that the students received either from their peers or the teacher.

## **Conclusion**

Literacy skills are approached from different perspectives, but all of them share the fact that reading and writing are complex literacy skills. While the psycholinguistic and cognitive perspectives stress the fact that these skills are dependent on personalized individual repertoire of abilities, the current trend influenced by a sociocultural stance comes to the fore to provide a new understanding of literacy skills. It emphasizes reading and writing as a joint social activity rather than as arcane and solitary activities. Therefore, the advantage of such a perspective is threefold: it gives insights into how the social and cognitive aspects enhance students' reading and writing ability, how they are enhanced by mediation by technology i.e. online learning, and how they are best achieved through collaborative learning and scaffolding. This would lead to acknowledging the benefits of collaborative blended learning framework on enhancing literacy skills and achieving good reading and writing outcomes. In this context, collaborative blended learning offers a myriad of possibilities for students to practise the reading and writing skills in and beyond the classroom, to be scaffolded and guided during their learning, and to be provided with the necessary feedback that keeps them improving. As researchers and scholars claimed, blended learning, where technology plays the role of mediating tool, plays a vital role in answering different learning styles, meeting the twenty-first-century needs, and deepening the levels of students' involvement and participation. According to the studies described earlier, collaborative blended learning can provide an optimal learning environment which lessens students' anxiety and increases their willingness to learn. Many studies place at the center of CBL three core aspects: scaffolding, mediation and collaboration. These aspects are discussed in the next chapter.

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**CHAPTER 3:**  
**THE PLACE OF SCAFFOLDING**  
**MEDIATION, AND**  
**COLLABORATION IN LITERACY**  
**SKILLS DEVELOPMENT**

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## **Chapter 3**

### **The Place of Scaffolding, Mediation, and Collaboration in Literacy Skills Development**

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## **Introduction:**

With particular reference to sociocultural theory, this chapter reviews the literature related to the role of scaffolding, mediation, and collaboration in literacy skills development. It first aims at providing an overview of the theory through highlighting its relationship to language education. Moreover, it sheds light on the importance of mediation and scaffolding in assisting students' literacy learning. It, then, explores the relationship between collaboration and literacy skills development. This review helps in understanding the social and cultural nature of the learning process, and how it can be developed through scaffolding, mediation and collaboration. Hence, it stresses the fact that literacy learning is a collaborative social act and not an isolated individual effort. Finally, methods for measuring students' perceptions are presented and discussed.

### **3.1. An overview of sociocultural theory and learning development:**

Recently, there has been a conspicuous shift towards sociocultural theory and its implications for both research and language education. A multitude of applications and interpretations have been put into practice to reflect the suitability of this theory for classroom learning contexts. Cultural-historical psychology or sociocultural theory, which originated from Vygotsky and his collaborators (1920-1930) then systematized and applied in 1978, is related to the development of higher mental practices that emerge from meaningful social interaction in the learning process. Sociocultural theory is grounded on the premise that human activities in general and learning in particular are rooted in cultural-social contexts and mediated by tools and other advanced partners which carry with them their own affordances (Vygotsky, 1978). Sociocultural approaches, then, were revisited and reinterpreted by a number of scholars to generate new perspectives for language learning and development. The different approaches underlining this theory started to focus more on the interdependence of the social and individual processes in the development of students' language skills.

As a reaction to the behaviorist approaches which focused on external processes, and cognitive theories which stressed internal and subjective experiences, sociocultural theory came to consider both the cognitive and social aspect of learning and perceive learning development as a socially shared activity which blends together internal and external processes (Valsiner, 1987) . Hence, the Vygotskian perspective is based on the view that psychological structures do not exist in the individual's mind only, but they are constructed as a result of interaction with social agents and the context (Behroozizad et al., 2014).

In order to understand better the interrelatedness and interdependence between the individual and social processes, three main aspects need to be taken into account. These include individual development, social and individual actions, and mediation (John-Steiner & Mahn, 1996). Vygotsky highlighted the importance of the social sources of development including social interaction between individuals to achieve good learning outcomes. According to Vygotsky's genetic law of development, the learner's cultural development is the result of two phases namely the social and the psychological (i.e. internal) (Valsiner, 1987). During social exchange, the learner acquires some forms of social interaction (such as exchange of information, cooperation, and competition) which in return become internalized to enhance the cognitive process of the students and boost their critical and problem solving skills. On this point, Valsiner (1987) states:

Every function in the cultural development of the child comes on the stage twice, in two respects; first in the social, later in the psychological, first in relations between people as an interpsychological category, afterwards within the child as an intrapsychological category....All higher psychological functions are internalized relationships of the social kind, and constitute the social structure of personality.

(p. 67)

Sociocultural theory then stands not only on the pertinence of the cognitive process or internal functioning but also on the social and cultural

context in which a specific activity takes place. In order to enable a smooth shift from the social (external) phase which is accounted for by collaboration among peers to the psychological (internal) phase by cognitive processes such as the use of reading and writing strategies, students need to be immersed in active and meaningful learning where they can interact and participate in the process of learning. Thus, for a certain skill or learning strategy to be internalized, two lines of development, namely the natural line and the cultural line, need to be distinguished (Vygotsky, 1978). These two lines show that progress in thinking encompasses “the transformation and interpenetration of more natural, spontaneous and elementary processes, by the cultural, abstract, organized and mediated processes” (Renshaw, 1992, p. 01). These dualities are conceived as one entity which contributes to the formation of learning development. Levina (1981 cited in Renshaw, 1992) provided a good example of how tools or signs can facilitate social interaction. According to her, during social interaction with peers, the student uses a number of semiotic signs such as language and gestures to capture attention, to identify objects, to classify, to expand experiences, and to offer explanations. Consequently, when students engage in socially situated use of language, they are more likely to reflect on and transform experience, leading to an autonomous intellectual functioning. Confirming Levina’s observation, Hurst et al. (2013) investigated the impact of social interaction on enhancing American students’ literacy learning. The results revealed that students were in favor of social interaction because it enhanced their reading and writing outcomes, their critical thinking and problem solving skills. Thus, socially interactive students are engaged students (Vacca et al., 2011).

As noted by Tharp and Gallimore (1988), sociocultural theory presents deep implications for both teaching and learning. A fundamental key point of this emergent view of human development is that higher order functions emerge out of social interaction. In recent years, research on literacy skills development has come to be viewed and taken from a social angle (See chapter 2), stressing the fact that reading and writing are best learned and enhanced when they are supported by collaborative learning and mediated by motivational tools and

assistance (Gee, 1992). Hence, “it does not make sense for classrooms to be social interaction-free zones where the teacher talks while students listen” (Hurst et al., 2013, p. 377).

Nowadays, EFL students’ profile is different and in constant change since they come to the classroom with various learning experiences, styles, cultural and social perspectives, and with different digital literacies (Yassine, 2012). According to Yassine (2012), the challenge is how to integrate these digital literacies in the classroom and how to transfer them to EFL learning. The teacher’s role, therefore, is how to better incorporate these aspects in the classroom and how to transfer them in order to be advantageous to reflect their profile and enhance their reading and writing outcomes. These conditions heightened a need for teachers to develop new ways of promoting social development, knowledge and skills to meet new challenges. It is worth recalling that the traditional approaches which focus on the learner as an individual rather than as a social agent are likely to have limited outcomes. This is why opting for a sociocultural approach in the present research study is a way of acknowledging the need for integrating mediating tools and explicit use of strategies to foster language skills and help students achieve better learning outcomes. In this respect, students are considered as social agents who act and react within a social framework and who bring with them their own affordances. This view is supported by Nedelsky (1989) who purports:

The collective is not simply a threat to individuals but is something constitutive of them and thus is a source of autonomy.....The task, then is to think of autonomy in terms of the forms of human interactions in which it will develop and flourish. (p.21)

The combination of the psychological and social processes are effective in the learning process since the social process helps in internalizing skills through constructing a complex interplay between action and reflection. For example, as students participate in a wide range of shared activities which result in internalizing the effects of working together, they observe how their peers

approach a reading or writing task, acquire new strategies, know how to reflect on their own performance, thereby achieving scaffolding and enhancing their reading and writing outcomes. One of Vygotsky's hypotheses, which is conducive to increase students' learning, is scaffolding and is discussed in the next section.

### **3.2. Scaffolding students' literacy skills:**

One of the most prominent assumptions in sociocultural theory is the metaphor of scaffolding. The latter is defined as instructional help that is provided to students to improve their learning outcomes and is used to explain the type of interaction that takes place within the zone of proximal development (Ninio & Bruner, 1978). Instructional scaffolding allows students to do reading and writing activities that they would not be able to perform on their own (Applebee & Langer, 1983). This can be accomplished through feedback, active learning, mediational tools, meaningful group discussion and dynamic interaction with students and the teacher. Scaffolding is perceived as crucial to enhance students' reading and writing skills as it leads to monitoring and guiding students' learning (Rogoff, 1990). In this vein, scaffolding includes important elements that sustain and ameliorate students' learning. These consist of motivating students to carry out the activity, providing explicit strategy instruction or modeling, approaching the reading or writing task as a process of controllable parts, and providing students with constructive feedback to help them reflect on their own performance (Rogoff, 1990).

Scaffolding and zone of proximal development (henceforth, ZPD) are closely related because they both pave the way for clarifying how learning occurs and how it is enhanced. The zone of proximal development is defined as "the distance between the actual development level as determined through 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, 1987 quoted in John-Steiner & Mahn,

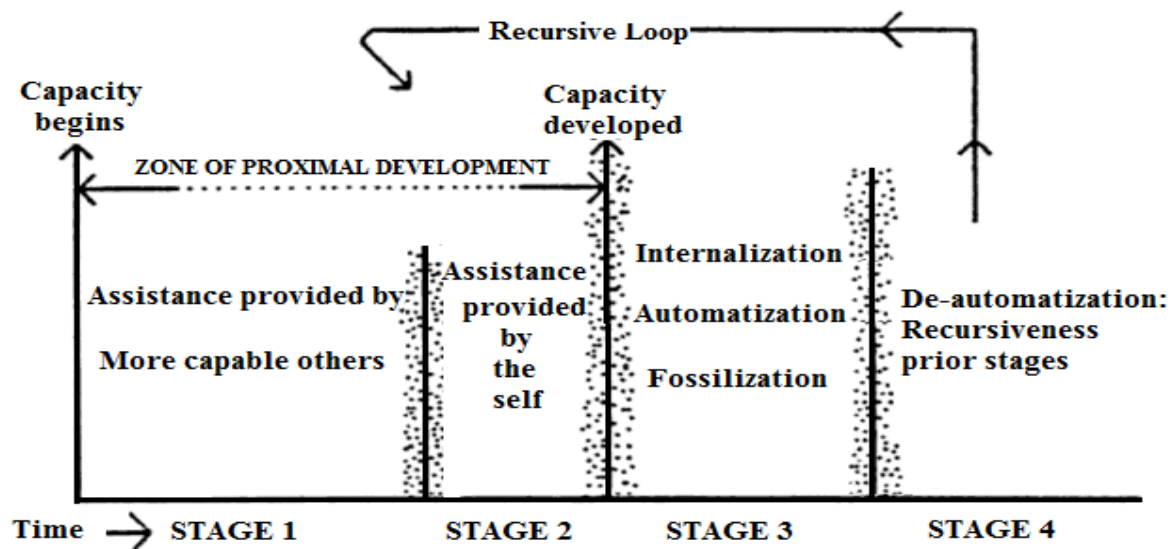
1996, p.198). Closer to Vygotsky's definition and more relevant to L2 learning, Ohta (2001) notes that "For the L2 learner, the ZPD is the distance between the actual developmental level as determined by individual linguistic production, and the level of potential development as determined through language produced collaboratively with a peer or teacher" (p.9). To summarize, ZPD focuses on the distance between what a student can learn by himself, and what he can learn by teachers' assistance, capable peers or mediating tools. Figure 3.1 below represents the zone of proximal development, as defined by Vygotsky (1978):



**Figure 3.1. Zone of Proximal Development**

Students can learn better when engaging and interacting with peers during joint activities. Through this meaningful interaction, students will be able to internalize the use of strategies and enhance their reading and writing ability. Operationalizing ZPD in the learning context undergoes several processes as suggested by Tharp and Gallimore (1988). The first phase has to do with providing students with meaningful help that is tailored to their own needs. It can be best achieved through enabling students to interact with the teacher, peers or with other technological tools. Once the student is provided with adequate assistance, he/she can carry out the task by him/herself through self-directed speech and this determines the second phase of the ZPD. The third phase, which is described by Vygotsky (1978) as *fruits* (i.e. results) of development, is where the student's performance can be developed, internalized and automatized. Finally, the fourth phase is "where deautomatization of performance leads to recursion through the zone of proximal development" (Sharpe, 2003, p. 29). Recursion is the process where the student faces difficulties in solving tasks

because of forgetting the cognitive process needed to perform a certain activity. Forgetting the cognitive process pushes the student to go back to the previous stages of ZPD to remember it (See figure 3.2 below). Thus, ZPD is based on two levels of development: the actual level, which is determined through the ability of the student to do something individually, and the possible level, which is determined by the ability of the student to do the activity with the assistance of the teacher or more advanced peers (De Guerrero & Villamil, 2000).



**Figure 3.2. The genesis of a performance capacity: Progression through the zone of proximal development and beyond (Gallimore & Tharp, 1990)**

In this context, the active agents within ZPD can involve teachers, peers with different levels of capabilities as well as educational technologies to support and increase students' learning. These advanced partners are considered also as mediating tools. Therefore, face-to-face learning and online learning can become a social microcosm where students can create dynamic learning situations that encourage collaboration, active learning and sharing of ideas for the purpose of enhancing their reading and writing skills. On this basis, student's internal development would take place through engagement in group work or "through participation in an ongoing social world" (Lave & Wenger, 1991, p. 50). Interaction stimulates a variety of internal functioning processes (such as the use learning strategies) that are able to operate only when the student is engaging

with peers or technological tools; hence, Turuk (2008) comments: “Once these processes are internalized, they become part of the child’s independent developmental achievement” (p. 249). This conclusion could apply to students’ learning a foreign language.

In order to facilitate the student’s internal development and social construction of knowledge within their ZPD, scaffolding can be helpful, for it can provide students with assistance and constructive feedback in the process of performing tasks to bridge their ZPD. Cognitive development can be adjusted and enhanced through various processes of social interaction which involve sharing, constructing, revising, modifying and adapting ideas or knowledge because of their relevance to the context and the task in which learning occurs (Clancey & Roschelle, 1991). Students, eventually, can improve through the ZPD by attempting successive approximations of the learning task, assisted by peers, teacher, or with mediational tools. When students are given adequate scaffolding, they gradually become empowered and responsible for their own learning process.

Scaffolding can take different forms. It can be through strategies such as modeling, think aloud, activating background knowledge, feedback, questioning and explaining (Van de Pol et al., 2010), or through means such as technology, graphic organizers, learning logs, handouts, mind maps, prompts and visual scaffolds (Alibali & Nathan, 2009). Numerous studies have attempted to investigate the potential benefit of scaffolding to develop students’ literacy skills. Huggins and Edwards (2011) conducted two action research studies to evaluate the effectiveness of using instructional scaffolds in reading courses. The study was conducted at Winston-Salem State University, USA. The main objective of the studies was to see whether using instructional scaffolding, such as peer-feedback and graphic organizers, would enhance students’ reading ability. The results showed that instructional scaffolding contributed to the development of students’ reading performance as they were able to organize the information

presented in the text easily and take into account the comments and clarification provided by their peers.

Furthermore, Abdulmajid et al. (2015) examined the use of blended instruction, as a scaffold, to enhance students' writing process and ability. The study aimed also at determining how students perceive the use of blended scaffolding strategies through Facebook for improving their writing skill. The results obtained from a semi-structured interview and a test indicated that the students were in favor of the stated scaffolding strategies compared to the traditional learning strategy. The participants mentioned that blended scaffolding strategies, such the use of technology, feedback and group discussion, helped them generate ideas, edit their written productions, and enhance their vocabulary, spelling and accuracy.

Likewise, other experiments were conducted by Wachyunni (2015), Attarzadeh (2011), and Poorahmadi (2009) to investigate the impact of scaffolding strategy on developing Indonesian and Iranian students' reading outcomes. The results demonstrated that scaffolding students' reading skills led to the development of the use of reading strategies and raised their awareness of the reading process. The strategies that were most adopted and enhanced by the participants were getting the main idea (s) of the text, making inferences and summarizing. Besides, the participants enjoyed working in groups as this helped them benefit from modeling and peer-feedback.

Arar (2015) investigated the development of Algerian students' metacognitive awareness in writing. Her research suggested an instructional framework for LMD students based on a blended learning instructional model. Findings from the study demonstrated that the experimental students' writing scores improved significantly as a result of the instruction they had undergone. The researcher advocated the use of technology, or blended learning, in the learning of writing to scaffold students' learning, raise their metacognitive awareness and enhance their writing skills. Thus, Lajoie et al., (2001) note that the integration of technology or online learning is considered as a scaffolding tool:

Providing (a) multiple modalities for representing real-world problems; (b) adequate information, advice, and feedback when and where needed; (c) opportunities to solve and reason about problems while applying scientific knowledge, and; (d) online resources that reduce memory load and increase the time for in-depth thinking.

(p. 157)

The studies presented thus far contribute to the understanding of the potential benefit of scaffolding, with its varied forms. Scaffolding can enhance students' literacy skills and enable them to shift from their actual level of development to the potential level of development. The studies also advocate the use of blended learning in enhancing and improving students' literacy skills through the use of peer-feedback, group work and technological tools. Referring to sociocultural theory helps us to understand how students learn in relation to zone of proximal development, by being immersed students in meaningful learning that requires problem-solving tasks, scaffolding and collaboration (Roosevelt, 2008). When students perform a task collaboratively, they will be able to complete the same task individually. In this respect, through scaffolding, the student is provided with progressive and more explicit feedback which eventually yields better noticing and better application of reading and writing strategies. Once student's awareness is raised, less explicit feedback is required which implies independent learning and greater control over learning. Explaining the metaphor of scaffolding leads to clarifying a close notion, that of mediation, discussed in the next section and which contributes also to enhancing students' literacy skills.

### **3.3. The Role of mediation in enhancing students' literacy skills:**

One of the cornerstones of Vygotsky's hypotheses is the notion of mediation and how it can be best integrated in the learning process. The term mediation was first coined by Hegel and Marx as pointed out by Vygotsky "Marx cites that a man uses mechanical, physical and chemical properties of objects so as to act as forces that affect other objects in order to fulfill his personal goals"

(Vygotsky, 1978, p. 54). It provides a means to involve students in situated language learning where they use tools and contextual affordances to help them increase their learning (Lantolf & Appel, 1994).

Nowadays, reading and writing tasks are often accomplished within group work or social networks. Students rely on the use of mediational tools to establish connections with the material social world in order to accomplish certain activities. While the traditional theories, such as behaviorism, claim that humans do not make their relationship with the external world but only through direct stimulus-response, sociocultural theory stresses the fact that human actions are mediated either physiologically (through language or self-directed speech) or by cultural tools (such as technology) to establish indirect connections in order to understand or perform specific tasks (Lantolf & Thorne, 2006). In this context, mediation serves as a bridge that connects the internal and the external, the psychological and the social. Various forms of mediation of literacy skills, which function in a social network, have been brought to the fore to be applied in EFL classroom contexts. Lantolf and Thorne (2006) proposed three types of mediation namely mediation by self, mediation by symbolic artifacts (e.g. technology) and mediation by regulation. The latter falls into two categories: object regulation and other regulation. While object regulation is about using specific objects in order to think, other regulation is about relying on peers, teachers or coaches to accomplish learning tasks through mediation. However, this research study focuses on two types of mediation: mediation by regulation and mediation by artifacts (technology). These are described in the next section.

### **3.3.1. Mediation by regulation:**

Considering learning as a cognitive social process, students need to be placed at the heart of the learning process to engage them in active learning community and interaction with others. In this respect, the relationship between students and teacher- students is reshaped. As referring to Vygotsky's (1978) perspective, the individual's speech and actions are mediated by others. This mediation elevates the student's cognitive and physical activity to a new and higher stage of development. In essence, students will be able to acquire the

language used by the other members of the community and eventually use this language to regulate their own actions and performance. As noted by Lantolf and Thorne (2006), the development of self-regulation takes place in three phases. The first phase, individuals are often controlled by or use objects in their environment in order to think. This stage is known as object-regulation. The second stage is more related to other-regulation which encompasses implicit and explicit mediation. This type of regulation is referred to as scaffolding. As a result, peer and teacher regulation serves as a way to assist students to accomplish certain activities and internalize specific strategies. This brings us to the last stage which focuses on the performance of an activity independently without the help of others. Hence, this process is related to the internalization of strategies by the students, which is the result of assistance from another person or from other objects to help them fulfill their goals. The three mentioned phases are interwoven and may overlap (Frawley, 1997). In the classroom, this type of mediation can be defined “as the temporary, but essential, assistance that helps apprentice learners into new skills, concepts, or levels of understanding” (Maybin et al., 1992, p. 186).

### **3.3.1.1. Teacher as a mediator :**

The role of teacher has always been conceptualized as exclusively related to the transmission of knowledge and making sure that the students grasp it appropriately. However, nowadays with the advent of student-centeredness, new teacher’s roles are taking place in the teaching-learning process. One of the roles of the teacher is to shift from being the producer of knowledge to a catalyst that mediates between the learner and the learning process. In this regard, the contribution of sociocultural theory to the field of education highlights the need to transform the role of the teacher to be more dialogic, interactive and meditational (Maybin et al., 1992).

Patterns of interaction have been changed to ones that are more dynamic. As mentioned earlier, the Vygotskian perspectives and ideas contributed to the understanding of the dynamic view of teacher-student interaction. However, it

has been argued that for mediation by others to be successfully achieved in the learning process, two criteria need to be fulfilled (Maybin et al., 1992). There should be evidence of a student's completion of the task successfully with the teacher's help and evidence of the students having accomplished a greater level of learner-autonomy or independence.

In this respect, a proliferation of research examined this type of mediation in relation to literacy learning. In an experimental study conducted at the University of Koya, Iraq, Avan (2015) examined the impact of teacher mediation on students' writing skills development. The results showed that through mediation, students' writing skills were improved. The researcher concluded that mediation provided students with the necessary strategies to write well-structured and meaningful productions. In addition, it raised students' awareness of revising and analyzing their writing. Also, teacher mediation increased students' awareness of finding out their weaknesses and how to improve them. Likewise, Gibbons (2003) investigated the impact of teacher-student interaction on the understanding of scientific register. The findings revealed that this type of mediation helped students to shift from everyday speech to an academic register when explaining and describing scientific concepts. Teacher's assistance provided meaningful feedback for students to learn from their mistakes and enhance their command of the language. Hence, as noted by Lantolf and Appel (1994), mediation is the shift from the inter-mental to the intra-mental phase that aids students to gain and exercise full control over their own behavior.

The findings of the aforementioned studies have significant implications for the understanding of how teacher mediation can enhance students' learning outcomes. Therefore, if teachers empower their students by encouraging them to work on subjects that are relevant and important to them and providing explanations and guidance for certain challenging activities, students will be able to internalize the value of learning, thereby enhancing their reading and writing outcomes. In addition to teacher mediation, peers are also considered as mediators that can help in achieving good reading and writing outcomes, as is discussed in the following section.

### **3.3.1.2. Peers as mediators:**

Recent learning and teaching practices in higher education have seen a great deal of ways to engage students in social learning. This has heightened a need to identify necessary attributes needed for successful teamwork in a way to achieve group autonomy. Therefore, collaborative learning is implemented to accomplish an interactive learning atmosphere that forges mediation by peers, which is considered as a crucial element that can boost students' learning outcomes.

Having students work in small groups as a team to solve problems, discuss ideas, analyze and evaluate knowledge may facilitate the internalization of other cognitive skills. Students need to be provided with opportunities to interact in order to benefit from each other and work together to reach a common goal (Graham, 2005). This strategy comes as a reaction to the traditional learning environments which encourage competitiveness over collaboration. In the last decades, there has been a renewed interest in the integration of peer-feedback, peer-evaluation and group work in the learning of reading and writing. Social interaction with more capable students can develop thought and use of strategies because it “analyzes how we are embedded with one another in a social world” (Kessler, 1992, p. 56).

It is worth mentioning recent in-depth case studies which demonstrate the positive impact that peer interaction has on literacy skills development. Farrah (2012), for instance, investigated the impact of peer interaction and feedback on improving Palestinian undergraduate students' writing skills at Hebron University. Relying on pre-post tests and pre-post questionnaires, the findings demonstrated that peer interaction, feedback and reviewing enhanced students' writing skills in terms of ideas development and elaboration. Besides, the students were very motivated to write in English, and they had positive attitudes towards engaging in social learning.

Likewise, Al-Besher (2012) examined the effectiveness of incorporating team and collaborative work to enhance students' writing skills. The researcher worked with 48 students from the University of Saudi Arabia. The purpose of the

study was to see whether the students who were involved in teamwork and peer mediation produced better writings in terms of development and coherence than students who approached the writing process individually. In addition, the researcher aimed to find out students' attitudes towards engaging in collaborative learning. The results of the study revealed that engaging students in peer interaction and cooperative writing helped them improve their written essays in terms of development, cohesion and organization.

Baleghizadeh (2011) also investigated the effect of peer- interaction through student-made questions on facilitating students' reading comprehension. The objective of the study was to compare the use of text simplification versus peer-interaction produced by student-made questions in relation to reading comprehension. The experimental group had to read two reading passages (a modified one and a simplified one) and answer a set of multiple choice questions through active interaction with peers. However, the control group relied on individual work to read the same unmodified text and answer the same questions given to the experimental group. The results of the study demonstrated that the experimental group outperformed the control group. The researcher concluded that reading comprehension skills of the participants in the experimental group improved as a result of peer negotiation and discussion.

An early study was conducted in the 1990's by Lee (1997) on the effectiveness of using pair work and peer reviews in the writing class. The study was conducted in the Hong Kong Polytechnic University. The findings revealed that different peers made efforts to assist each other to enhance their writing process. However, the students did not provide constructive criticism to each other about grammatical mistakes. As noted by Lee (1997), Confucian philosophy influenced students' actions, which implies that students are polite and modest. Overall, students claimed that their writing skills had improved because they were able to exchange ideas, negotiate meaning and get involved into interactive discussion with their peers. As DiPardo and Freedman (1988) point out:

Groups present an arena for intervening in the individual's writing process, for working collectively to discover ideas, for underscoring the writer's sense of audience, for interacting with supportive others at various points in the composing process, and even, perhaps, for developing the writer's intuition.

(p. 123)

Engagement and peer mediation afford an interactive resource for handling the learning challenges and promoting students' motivational spirit (Furrer et al., 2014). When peer mediation occurs in a meaningful interaction, it may lead to learner-autonomy (Reeve & Jang, 2006) which is believed to depend more on the different relationships between students. As a result, this autonomy support enhances students' motivation. For instance, when students listen to each other, cope together to understand and solve reading or writing tasks and value each others' opinions and feedback, they are more likely to be immersed and commit themselves to take responsibility for their own learning.

### **3.3.2. Mediation by artifacts: Technology as a mediating tool**

Mediation by artifacts, or more precisely technology, becomes an important tool in the twenty first century for it represents a mind-boggling information resource for both teachers and students. In the twentieth century, Vygotsky gave prime importance to the notion of ZPD, which was discussed in the previous section, and to the non-technological activities that take place within zone of proximal development. Among these activities is mediation (Vygotsky, 1978). It is worth recalling that learning is a mediated activity and can be enhanced through the appropriation of cultural tools which take the form of psychological tools such as language, advanced partners or technological tools. These mediational tools are believed to raise students' awareness of their own learning process and develop their lower and higher order thinking skills. In this context, Wertsch (2007) writes:

A hallmark of human consciousness is that it is associated with the use of tools, especially “psychological tools” or “signs.” Instead of acting in a direct, unmediated way in the social and physical world, our contact with the world is indirect or mediated by signs. This means that understanding the emergence and the definition of higher mental processes must be grounded in the notion of mediation. (p.178)

We would like to argue that mediation by technological “signs” can provide students with the opportunity to develop their reading and writing abilities through the use of an online learning platform outside class. This would help students to extend learning hours beyond classroom education and practise reading and writing skills extensively. Thus, it is of great significance to integrate the notion of mediation by technology in the development of students’ reading and writing skills since it is considered as an active agent within ZPD. As Brown et al. (1993) understood, the active agents within the ZPD “can include people, adults and children, with various degrees of expertise, but [they] can also include artifacts such as books, videos, wall displays, scientific equipment, and a computer environment intended to support intentional learning” (p. 191).

Moreover, adopting mediation by technology in the learning of reading and writing can lead to scaffolding students’ learning development, amplifying their cognitive process and helping them achieve good reading and writing outcomes (Renshaw, 1998). This can be accomplished through the use of regular feedback, which is integrated at every stage of students’ learning, group discussion through the use synchronous and asynchronous tools, the use of online wikis to brainstorm and share ideas, and do different reading and writing assignments for enhancing students’ practice and use of learning strategies. Therefore, mediational tools can “fundamentally change the nature of the task, the required processes, and the subjects who are the actors” (Renshaw, 1998, p. 85). From this perspective, mediating students’ learning with technology may help them do their tasks effectively and share them with their peers through offering multiple

channels of communication where students can negotiate meaning, converse, and exchange ideas and discussion. Some of the technological tools that mediate students' learning are displayed in the table below:

<b>Cognitive goal</b>	<b>Online Tool</b>	<b>Scaffolding afforded by tools</b>
Reflection Group dialogue Collaboration	E-mail Chat systems Discussion boards	- Group messaging - Discussion forums - Guided reflection
Metacognitive awareness Questioning Self-regulated learning	Frequently asked questions space (FAQ)	- Support for questioning - Collaborative problem solving - Reflection on peer contributions
Group problem solving Social interaction Self-responsibility	Groupware & databases Threaded computer conferences	- Shared resources - Online mentors - Management of group processes

**Table 3.1. Example of scaffolds afforded by the web (Collis, 1997)**

The implementation of technology in the learning process, especially blended learning, can mediate students' learning and create a joint network that is equipped by scaffolds and fosters flexible and active learning through allowing students to access a huge breadth of information and learning resources. These educational technologies give students the opportunity to communicate with their peers and the teacher, practise the reading and writing skills extensively and enhance their reading and writing skills in innovative ways, such as through online discussion, lessons, reflective practice, quizzes and assignments, that would otherwise not be efficient, or effective, with other traditional methods. Thus, "these technologies don't just help us teach the old stuff in new ways – they can also help us teach new stuff in new ways" (Klopfer et al., 2009, p. 4).

In an attempt to adapt the student's digital world to learning, a number of studies were conducted which applied Vygotsky's concept of mediation by artifacts in the learning process. For instance, Fotos (2004) investigated the effects of an email exchange program in the development of literacy skills. The study was based on the assumption that students construct knowledge

interactively as they engage in social exchange of ideas. The participants were a group of twenty Japanese university EFL students and a group of five American university students. The findings showed that through engaging into email exchange program, students were provided with scaffolding and authentic reading and writing. Moreover, their self-confidence and motivation were enhanced as well as their language proficiency. As a result, the dynamic features of engaging in blended learning can create a community of learning practice where teachers and students work collaboratively to promote language skills.

Consistent with Fotos (2004)'s study, Gian Bui (2015) conducted an action research to investigate the use of technology to enhance Vietnamese students' writing skills. The results showed that the use of wikis facilitated the sharing and construction of knowledge. In addition, collaborative online writing through wikis raised students' awareness of the process of writing (planning, revising and editing) rather than the product itself. This allowed students to share their writing productions to a wider audience outside the classroom in order to seek feedback which enhanced students' audience awareness. On this point, Nieto (2007) remarks: "the asynchrony of the communication allows learners to be in control of their own learning because they can decide when and how to approach the tasks" (p. 9). These studies share the same conclusions that the use of educational technologies enhances students' literacy outcomes, confirming the powerful learning opportunities and advantages they afford. The use of educational technologies seems to have changed people's behaviours.

Li (2006) remarked that the incorporation of technology as a mediating tool "has reshaped the thinking, writing, and revision processes of people who have adapted their composing abilities to the new writing medium" (p. 16). The study he conducted in Toronto was grounded on the Vygostkian concept of mediation by artifacts to investigate the impact of technology on students' writing. He compared the results of two writing assignments using traditional (pen and paper) and innovative (use of computers) methods. The findings of the study demonstrated that the students who relied on the computer to produce their

essays performed better than the students who used pen and paper. His conclusion suggests that taking computers as a mediational tool provides a useful means to motivate students to write in English since the students were able to check spelling mistakes, grammar and word choice. Thus, writing can be enhanced through constructive feedback, peer interaction, and by using online tools.

Similarly, Bentayyab (2012) conducted a study to investigate Algerian EFL university students' attitudes and teachers' reactions to computer or internet extensive reading classroom. The study was meant to highlight the potential benefits of integrating ICT in the EFL extensive reading classroom. Results from the study indicated that introducing ICTs in the reading classroom was beneficial for students' reading achievement, and teachers had positive attitudes towards integrating ICTs in the teaching of reading, claiming that ICTs played an important part in highlighting the role of innovation in the reading classroom and engaging students actively in the reading process. The researcher concluded that the introduction of ICTs in the reading classroom motivated students to read both intensively and extensively, fortified their reading ability and enhanced their enjoyment.

The studies reported in this section contribute to the understanding of Vygotsky's concept of mediation and how it can be better integrated into literacy learning to enhance students' reading and writing ability. Applying mediation in the learning process may leverage opportunities for students to benefit from the cultural tools adopted and upgraded to answer their needs and solve problems. As, Vygotsky (1978) rightly remarked, "Like words, tools and nonverbal signs provide learners with ways to become more efficient in their adaptive and problem-solving efforts" (p. 127).

#### **3.4. The Place of collaboration in literacy skills development:**

Collaborative learning can be defined as any process that requires group work and refers to the different tasks, activities and processes that are performed

in groups (Dale, 1997). When students are engaged in collaborative learning, they are likely to develop different interpersonal and intrapersonal skills, communicative skills, negotiation and reflection. This idea is underscored in Vygotsky's sociocultural theory which suggests that when students involve in collaborative social learning, they internalize skills and knowledge. In this context, meaning making and knowledge require students to fully engage and participate in the learning process (Ohta, 2001).

However, in a recent discussion of the concept, collaborative learning has taken two overlapping, even slightly confusing meanings. Collaborative and cooperative learning have been used interchangeably in some studies (Zanartu, 2003 cited in Larranga, 2012), yet they carry different meanings. The former is rooted in sociocultural theory; however, the latter is related to Piaget's Constructivist theory. Cooperative learning, on the one hand, requires assigning and dividing work for each student. On the other hand, collaborative learning emerges from interaction, negotiation of meaning and reflection that pave the way to maintain and achieve a common goal (Dale, 1994). This is why collaborative and cooperative learning are not used interchangeably in this study, but with opposing meanings.

Moreover, a number of terms were coined to refer to collaborative learning in collaborative writing or reading. Collaborative learning is often referred to as 'peer feedback' (Grami, 2010), 'peer response, editing, and evaluation' (Lundstrom & Baker, 2009), 'peer revision' and 'peer learning' (Chen, 2007 cited in Al-Besher, 2012). In the writing process, for example, students can work collaboratively to produce a text; the process may include generating ideas together, brainstorming, organizing, revising and editing. As noted by Lai (2011), collaborative learning in the form of peer feedback can improve students' intrinsic motivation since it involves an active sharing of ideas between students which allows them to discover solutions and produce meaning together. Besides, collaborative learning is not related solely to the discussion and sharing of ideas or feedback, but it also involves the sharing of resources and materials (Graham, 2005).

The first aspect that collaborative learning fosters is mutual interaction (Pica, 1994). In the process of interaction, students are provided with opportunities to brainstorm and plan their ideas during writing and activate their background schemata in reading, paving the way for enhancing generative thinking and clarifying ambiguities to each other. Mutual active engagement can highlight the competences and abilities that each student or peer has, allowing for active involvement in hands-on tasks and contributing to scaffolding their learning process.

The second aspect of collaborative learning is negotiation of meaning. As students interact, they are likely to negotiate meaning. The latter occurs when students face difficulties in grasping knowledge which requires the other peers to restructure or adjust it so that understanding can be achieved (Pica, 1994). According to Dale (1994), negotiation can increase accountability, self-reflection, critical thinking skills, and decision making. As a result of negotiation, cognitive conflict can take place when students are immersed actively in interaction. Negotiation can also promote creative thinking and language competence and enhance students' reading and writing abilities (Allen et al., 1987). Besides, it allows students to be engaged in problem solving skills through motivating them to approach reading and writing tasks from more than one standpoint, resulting in developed thinking (ibid).

Moreover, students' heterogeneity is perceived as a benefit since it highlights the strengths that each student brings to the group, allowing for sharing of expertise and enhancing students' ZPD (Ohta, 2001). For example, within the same group, there are students who excel at grammar, spelling and sentence structure, and others can be good at mechanics and generating ideas for writing. Therefore, some students can complement others and can contribute to producing good quality essays and achieving successful reading comprehension (Dale, 1994). In this context, the low achievers can develop their reading and writing abilities as a result of collaborative learning and its affordances which revolve around scaffolding, mediation, peer-evaluation and feedback.

It is also believed that collaborative learning lowers students' affective filter which results in enhanced self-confidence and better learning outcomes. A learning atmosphere which lowers students' apprehension and raises their confidence and willingness to learn is likely to help students develop their reading and writing abilities. This is achieved by creating a non-threatening learning environment that is based on student centeredness and compensates for the weaknesses that some group members may have. According to Hill and Hill (1990 as cited in Schmuck, 2009), collaborative learning boosts students' thinking, "deepens their understanding, develops leadership skills, promotes positive views about other learners, builds self-esteem ... and that it also makes for enjoyable learning" (p.7). Hence, engaging in group work and performing tasks collaboratively may enhance students' literacy skills and their motivation to read and write.

It is worth recalling that collaborative learning is also based on the concept of zone of proximal development that is considered as the theoretical background for peer collaboration in literacy learning. More capable peers can help and support the struggling ones to create meaningful learning opportunities to achieve common goals (Storch, 2005).

### **3.5. Methods for measuring students' perceptions:**

The way students perceive online learning can be influenced by their own past experience dealing with technology in education or online tools. Thus, having some "prior knowledge of the online system also appears to influence how available affordances are accessed and used" (West et al., 2013, p.127). As noted by Hill and Hannafi (1997), students who have no experience in using online tools for educational purposes can become reluctant to use technology for learning, and this can produce a feeling of frustration. However, those with prior experience can generate confidence, persistence and accomplishment in using online learning. Experienced online students can develop strategic knowledge about the use of online tools and resources, have increased metacognitive

awareness of their online learning needs, and find immediate solutions whenever they face confusion or dissatisfaction (Song et al., 2004).

Since perceptions are viewed as constructive feedback which evaluates the effectiveness of the teaching-learning process, researchers have developed and used self-report methods, such as questionnaires and focus group interviews, to measure perceptions. For example, Herrmann et al., (2017) developed and validated the Learn questionnaire to measure students' experiences and perceptions of their teaching-learning context. The questionnaire has 32 items divided into two sections. The first section is called students' approaches to learning and includes 12 items, and the second section entitled students' perceptions of the teaching-learning environment has 22 items. The students respond to the different items by using a 5 point Likert scale from disagree= 1 to agree=5. In the 1990's, perceptions were already used to check the effectiveness of the learning process. Wright and Hendershott (1992) used a focus group methodology to examine students' perceptions of the learning-teaching process. In addition, a questionnaire was administered to the students to get in depth results. As claimed by the researchers, combining a questionnaire and a focus group interview to measure perceptions could lead to more insightful results and increase the participants' participation and interaction. Thus, as Morgan (1988 cited in Wright & Hendershott, 1992) argues: "the hallmark of focus groups is the explicit use of the group interaction to produce data and insights that would be less accessible without the interaction found within a group" (p. 89). More recently, to evaluate students' perceptions of blended learning environment, Chang and Fisher (2003) developed the Web-Based Learning Environment Instrument (WEBLEI). The questionnaire, which is targeted purposively to university students, comprises four scales that are based on blended learning characteristics. The scales involve access, interaction, response, and results. For the first scale, named access, it is necessary for the students to have access to some online learning materials or a virtual learning platform. The purpose of this scale is to determine the convenience of accessing the online learning activities or the learning platform and achieving flexibility. The second scale named

interaction focuses on students' collaboration and interaction in the learning process. Hence, the interaction scale is about assessing the extent to which the students participate actively and work collaboratively with their peers to achieve good learning outcomes. According to Chang and Fisher (2003), after determining access and interaction, students need to show how they feel towards using this type of learning environment. This determines the third scale which is entitled response. Students then can answer by indicating their perception of this learning environment, and whether or not the learning objectives have been achieved as a result of engaging in blended learning. Finally, the fourth scale is called results and aims at determining and indicating what the students have achieved in terms of skills development. The reliability and validity of the questionnaire were tested using statistical analyses, Cronbach alpha reliability coefficient, factor analysis, and discriminant validity. On this basis, Chang and Fisher's (2003) questionnaire has been used in the present study, for it aims at measuring students' perceptions of using a blended learning environment in higher education.

## **Conclusion**

Recognizing reading and writing skills as complex, social and mediated activities paves the way for researchers to systematize and reinterpret current educational practices for the purpose of encouraging students to be motivated and autonomous. Therefore, the primary objective of sociocultural theory is to unveil this complexity through reshaping literacy activities in order to answer students' needs. Vygotsky's premise has generated a holistic approach composed of internal and external factors that contributed to considering learning as mediated, interactive, social, and collaborative. Scaffolding, mediation, and collaboration are perceived as the cornerstones of a sociocultural approach to learning. Considering students as social agents, who bring with them their own experiences, learning styles and goals in the learning process, will give them some sort of ownership in order to increase their learning outcomes. This can be accomplished through collaboration, mediation, and scaffolding students'

learning through implicit and explicit constructive feedback, modeling, group work and the use technological tools in order to place them at the heart of the learning process and help them gain control of their own learning. The following part of the thesis is part two. It deals with the research design and procedure of the present study and operationalizes the essential notions discussed in this chapter: face-to-face learning and online learning for the development of literacy skills at university.

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**PART TWO**  
**EMPIRICAL RESEARCH**

**CHAPTER 4:**  
**RESEARCH DESIGN AND**  
**PROCEDURE**

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## **Part Two: Empirical Research**

### **Chapter 4: Research Design and Procedure**

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## **Introduction**

This chapter is methodological and aims at describing the research design and procedure of the present study. It consists of a discussion of the sampling procedure, research instruments, data collection procedures and quantitative and qualitative methods of analysis. It begins by providing a description of the sample population and the rationale behind its selection. Then it moves to describing the research design and the research instruments used to elicit data which are related to the impact of collaborative blended learning on developing literacy skills in first year EFL degree students. Data collection procedures involve a detailed description of the reading and writing test (pre and post), the questionnaires, and focus group interview. In addition, this chapter describes the steps followed to design an e-course for the experimental participants to use outside the classroom. The chapter ends with an explanation and presentation of the quantitative and qualitative analytical methods used for this research study.

### **4.1. Research method description:**

The present study is quasi-experimental and necessitated the employment of different research tools for the purpose of triangulation. In order to get more accurate results, a mixed-methods approach was adopted (Cohen et al, 2007). This section gives a description of the sample population, the research design, the research instruments, description of the treatment phase, research procedure and data analysis procedure. The next section is about sample population.

#### **4.1.1. Sample population:**

The participants of this study are two groups (Experimental and control) from first-year English degree students enrolled in the department of English at the University of Algiers 2. The research sample consisted of 100 students drawn from a population of approximately 1000 students, and each group contains 50 subjects. Furthermore, it is worth mentioning that the enrollment of first year students into groups was undertaken by the administration in a random way, and

that determined the selection and choice of the two groups of the sample for the experimental study.

#### **4.1.1.1. Choice of the sample:**

Since the objective of the present research study is to investigate the impact of collaborative blended learning on developing students' literacy skills, it would be effective if it started at a basic level so that students, who are considered as freshers, would acquire and improve their reading and writing skills and transfer their skills to other content modules. Hence, if the students could develop the said skills at an early level, they would build strong literacy foundations that can help them improve their reading and writing abilities, thereby achieving successful learning outcomes. For these reasons, first-year English degree students were chosen as the sample of the present research.

It is established that the goal of any good research, especially experiments, is to ensure its internal and external validity so that the conclusions drawn by the researcher can be valid. For this purpose, the experimental and control groups contain the same number, 50 each. Both groups had reading and writing instruction once a week, and each session lasted 3 hours. Thus, the experimental subjects received the treatment, which was based on the use of collaborative blended learning i.e. face-to-face instruction (collaborative strategic reading and collaborative writing) and online learning. Thus, these students have presumably never been exposed to collaborative blended learning and are experiencing this learning method at university for the first time. On the other hand, the control subjects were instructed through the conventional method of teaching reading and writing which consists of individual learning and paper-based materials.

#### **4.1.1.2. Sampling procedure:**

Since the present study is quasi-experimental, the non-probability sampling method was adopted. Non-probability sampling means that not every participant of the population has an opportunity for being involved in the sample. Hence, the selection is not the result of a randomized procedure (Burn & Grove 2001). In the present research, the enrollment of first year students into groups

was undertaken by the administration and on that basis the different groups were assigned to teachers. Therefore, the intact group sampling was adopted.

#### **4.1.2. Research design:**

The present research study, which aims at investigating the use of collaborative blended learning to develop first year EFL degree students' literacy skills, was conducted during the second semester of the academic year 2017-2018, in the Department of English, at the University of Algiers 2.

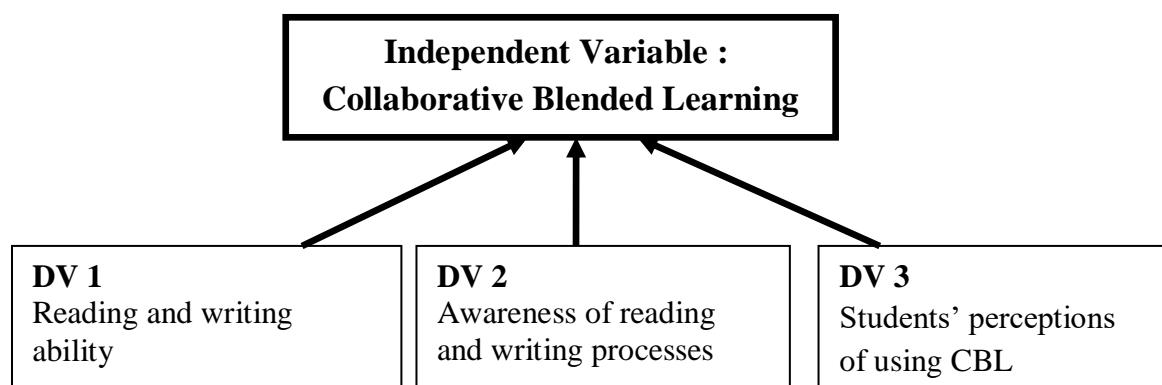
The purpose of any experimental design is to control the conditions that may influence the true effects of the independent variable upon the dependent variables. Determining internal and external validity in research plays a crucial role in achieving the success of an experiment. As far as quasi-experiments are concerned, internal validity, as defined by Cohen et al. (2007), refers to the validity of the results within a research study which aims at determining a causal relationship. By ensuring internal validity, the researcher can conclude that the treatment is, in fact, responsible for a change in the dependent variable (s) as Cohen et al. (2007) put it "Internal validity is concerned with the question, 'Do the experimental treatments, in fact, make a difference in the specific experiments under scrutiny?'" (p.155).

However, there are some threats that may affect internal validity. These may include history, maturation, statistical regression (unreliability of measuring instruments), instrumentation (unreliable tests), testing (pre-tests effects on the treatment), selection (bias in the selection of subjects), and experimental mortality (The loss of participants through dropout) (Cohen et al., 2007). It is worth mentioning that in a quasi-experimental design it is difficult to control the extraneous variables that may influence the results since the participants are not randomly selected. However, in the present study, in order to address the threats to internal validity, two groups were used (CTR and EXP) to compare the results, thereby minimizing threats to internal validity.

External validity has to do with the extent to which the results can be generalized to the whole population. It asks the question "given these

demonstrable effects, to what populations or settings can they be generalized?” (Cohen et al., 2007, p. 155). External validity might also be affected by certain threats which can cloud the study findings. These can consist of failure in explaining the independent variable, lack of sample representativeness, inadequate operationalizing of the dependent variables, invalidity of the research instruments, reactive effects of experimental testing, and multiple treatment interference (Cohen et al., 2007; Campbell & Stanley, 1963). As far as external validity is concerned, non-probability sampling method was used in the present study, and a convenient sample of 100 students (10% of the population) was obtained. Since the sample was a convenient one, the results obtained from the study will have to be treated with caution as generalizing results might be weakened by adopting an intact sample in lieu of using a random sample or the whole population.

Moreover, in order to test the study hypotheses, the equivalent groups design (experimental and control groups) was adopted through selecting two groups and applying the experimental factor (independent variable) on the experimental group. The independent variable is the use of collaborative blended learning to develop literacy skills, and the dependent variables include students’ reading and writing ability, awareness of reading and writing processes and students’ perceptions of using CBL to develop their literacy skills.

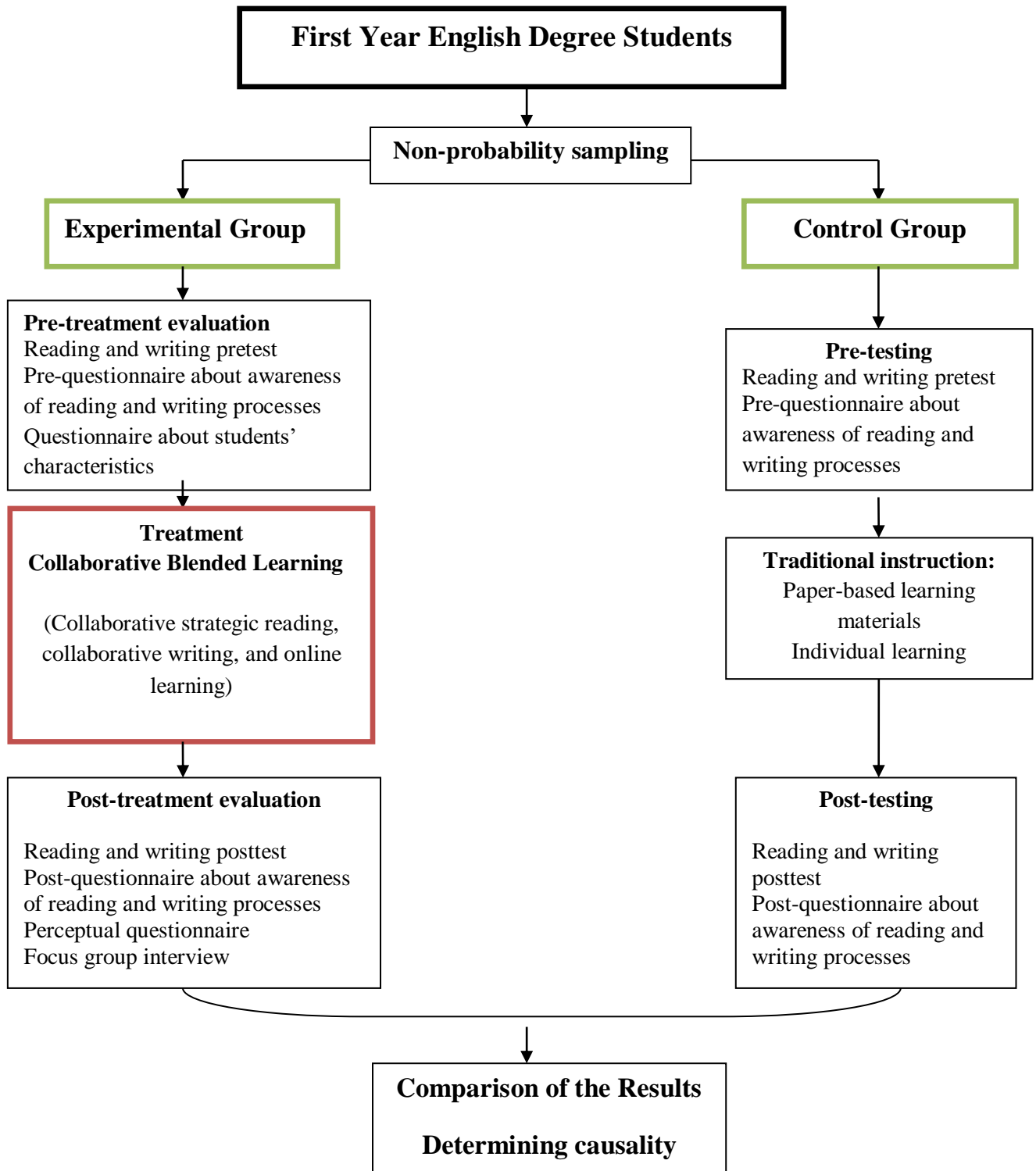


**Figure 4.1: Description of the independent and dependent variables**

Furthermore, the use of two or more methods of data collection in a research study is referred to as triangulation, multiple methods, the multi-method

approach or mixed methods approach (Cohen et al, 2007). In order to address the threats to internal validity and ensure more valid and reliable findings, triangulation or mixed-methods approach was adopted in the present study. Adopting this approach can deepen the understanding of the complexity of the research findings and target the explanation of results from more than one standpoint (Cohen et al., 2007).

Since the aim of the present study is to investigate the effect of collaborative blended learning on developing EFL students' literacy skills, different research instruments were used. These included a reading and writing test (pre and post), three questionnaires and a focus group interview. The objective of the pre-test was to determine the students' level in reading and writing before starting the treatment with the experimental group. However, the post-test was meant to compare the results obtained from the control and experimental groups to see whether there would be any significant difference in performance as a result of CBL. Moreover, three questionnaires were used in the present study. The first questionnaire, which was administered to the experimental group, aims at identifying the experimental students' characteristics, and the second questionnaire, which was administered to both experimental and control groups, is about awareness of reading and writing processes. With regard to students' perceptions of using CBL to develop their literacy skills, the experimental group only was required to complete the perceptual questionnaire and take part in the focus group interview. The research framework is summarized in Figure 4.2 below.



**Figure 4.2. Research framework**

**4.1.3. Research instruments:**

For the purpose of triangulation, different research tools were used sequentially: a test, three questionnaires, and a focus group interview.

#### **4.1.3.1. Description of the reading and writing pre and post tests:**

This reading and writing test is the first tool used for the study. To determine the participants' performance before and after the intervention in quasi-experimental design, the participants are required to go through a pretest-posttest process. More precisely, a pretest "aims at ensuring comparability of the participant groups prior to their treatment and a posttest to measure the effects of treatment" (Mackey & Gass, 2005, p. 149). In the present research, the aim of the test was to examine the extent to which collaborative blended learning can enhance students' ability to read and write effectively.

For practical reasons, the TOEFL standardized reading and writing test was adopted as it is one of the best English tests of reading and writing performance. The pre-test, which was conducted before the treatment, aimed at measuring the students' performance in literacy skills to determine equivalence (or not) between the control and experimental groups. However, the aim of the post-test was to compare the achievement of both groups to see if there is any significant difference (or not) between the control and experimental groups as a result of using collaborative blended learning.

Firstly, the TOEFL reading test includes five reading passages with 50 reading comprehension questions. The test assessed the reading skills and included questions about reading for details, reading for main ideas, reading for reference and vocabulary, and reading for inference. The TOEFL reading passages are taken from university-level textbooks that introduce a discipline or topic (Chen & Sheehan, 2015), and the topics of the selected texts were assumed to be somewhat familiar to the participants. They addressed education, geology, economy, art, and history (See Appendix B and Appendix C).

Secondly, the TOEFL writing task involved essay writing (See appendix D). To assess the writing test, a rating scale (See appendix H) and a rubric (See appendix I) were used. The rubric aimed at assessing students' visual skills (punctuation, spelling), grammatical skills (tenses, subject-verb agreement and articles), organizational skills (relevance to the topic, organizing information into

an essay, coherence, and using appropriate details) and stylistic skills (sentence structure and vocabulary). It is worth mentioning that the researcher followed the syllabus of reading and writing set by the department of English at the university of Algiers 2 (See appendix J), and this determined the selection of reading and writing lessons, topics and assignments. The next section deals with the second research instrument used for the present study.

#### **4.1.3.2. Description of the three questionnaires used in the present study:**

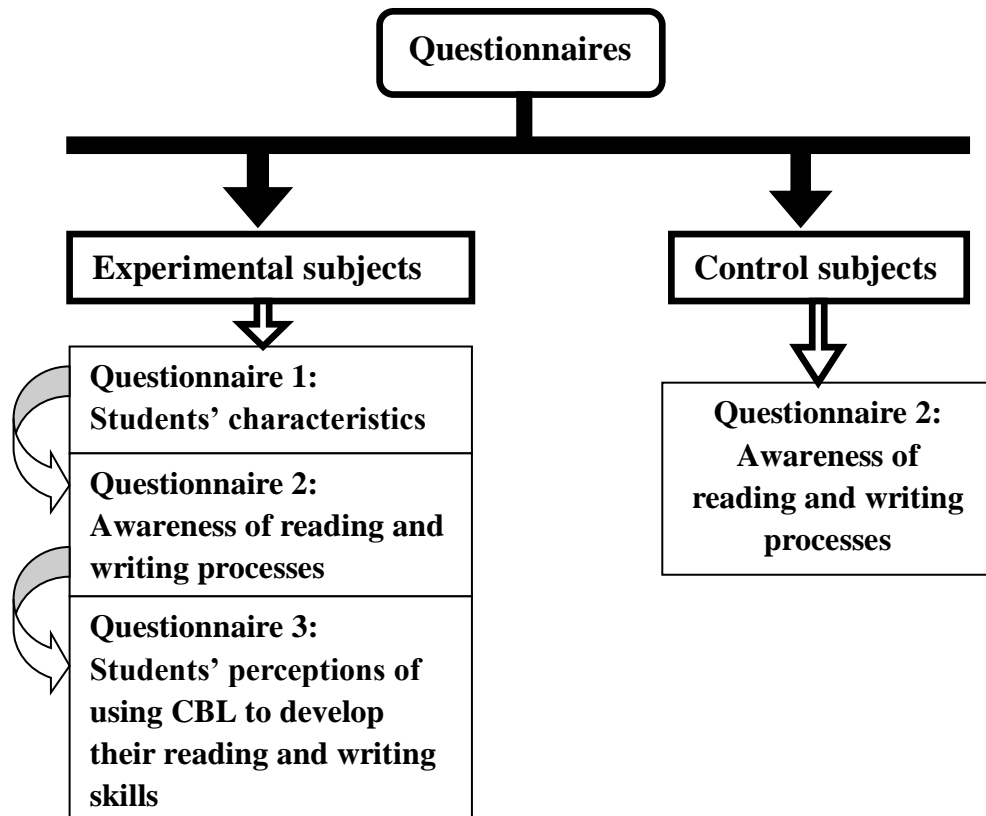
The questionnaire is the second tool used to collect quantitative data. As referring to Wilson and McLean (1994), the use of questionnaire is considered as a popular means to collect a wide range of data or survey information, which often generates quantitative data. There exist three types of questionnaire items namely: closed-ended, open-ended and mixed. While close-ended questions can be highly controlled by the researcher, open-ended questions can be more determined by the respondent (Nunan, 1992). In open-ended items, the respondents are given more space to decide what to say and how to express their thoughts. As noted by Nunan (1992), closed-ended questions can help the researcher get succinct data and can ease the process of data collection and analysis, thereby ensuring greater reliability; however, open ended questions can reveal more useful and thorough data. Besides, careful consideration needs to be paid to the wording of questions in order to avoid biased information. Thus, careful attention needs to be paid to leading questions or culturally biased questions that may reveal certain attitudes (Nunan, 1992). Consequently, in order to increase the validity, reliability and practicality of the questionnaire, it needs to be pretested or piloted before its final use (Cohen et al., 2007).

Three questionnaires were used for the present study and were addressed to the sample of first year English degree students (Experimental and Control). The first questionnaire, which is called “students’ characteristics”, consists of three sections: the participants’ profile, learning styles and needs. This

questionnaire was administered to the experimental subjects only. It serves as a basis for the design of the e-course.

The second questionnaire is named “students’ awareness of reading and writing processes” and meant to help students track and reflect on their awareness of the strategies applied before, during and after reading and writing tasks. This questionnaire was administered before and after the treatment to both groups (EXP and CTR).

The third questionnaire is about students’ perceptions of using CBL. It was administered after the treatment phase to the experimental group only to evaluate their use of CBL to develop their literacy skills. Figure 4.3 below demonstrates the questionnaire (s) that was/were administered to the control and experimental subjects.



**Figure 4.3. The questionnaire (s) administered to the experimental and control subjects**

The questionnaires were administered by the researcher in the classroom to provide clarification and explanation of the purpose and reduce ambiguities to a minimum. This method, as believed by Oppenheim (1992), ensures a high response rate, accurate sampling and less bias. The next section describes each questionnaire in detail.

- **Questionnaire 1: Experimental subjects' characteristics**

The first questionnaire is about experimental subjects' characteristics. It aims at drawing the experimental subjects' profile, and finding out their learning styles and learning needs (See Appendix E). The results of this questionnaire serve as a basis for the design of the online learning platform (e-course).

**Student Profile-** This aims at identifying the experimental subjects' profile in relation to technology use and determining their technology competence because blended learning is highly based on digital literacy. This section comprises 6 questions. They inquired about whether the students use technology in education, and what kind of technological devices they use in learning. The participants were asked to rate their digital skills, and whether they have access to the internet. Finally, since blended learning is based on students' preferences, the experimental subjects were asked about where they prefer to study online to select the blended learning model that suits their preferences.

**Learning styles-** Since blended learning helps cater to all learning styles, this part aims at identifying the way (s) the experimental subjects learn best and the way(s) they prefer to learn. This part is an adapted version of the Perceptual Learning-Style Preference Questionnaire developed by Reid (1995). The questionnaire assesses EFL students' learning style preferences which encompass visual, tactile, auditory, kinesthetic, group, and individual. The reason for choosing this questionnaire is that its validity and reliability are supported by the literature and includes the VAKT learning styles in addition to the social ones such as group learning. This section of the questionnaire comprises 30 Likert-type statements and a scale from one to five: (5) strongly agree, (4) agree, (3) undecided, (2) disagree, and (1) strongly disagree (See Appendix E). Thus, Items

(6/10/12/24/29) are related to the visual learning style, and questions (11/14/16/22/25) are allied to the tactile learning style. Items (2/8/15/19/26) are related to the kinesthetic learning style. Items (1/7/9/17/20) are about the auditory learning style, and items (3/4/5/21/23) aim to depict the group learning style. Items (13/18/27/28/30) are about the individual learning style.

**Learning needs-** this section aims at identifying students' needs in relation to literacy skills. It contains 25 Likert type statements and 2 open-ended questions. It precisely aims at identifying the difficulties that the experimental subjects face in reading and writing so that their needs would be addressed. The section related to reading needs contains 14 items. They are classified into 5 categories namely: reading for main ideas (items 1 and 2), reading for details (items 3 and 4), reading for reference and vocabulary (items 5, 7 and 12), reading for inference (item 13), and additional reading skills (items 6, 8,9,10 and 11). Item number 14 is an open ended question where the participants are asked to add any other learning needs they have. The learning needs related to the writing skill encompass 13 items. These are classified into 5 categories namely: visual and grammatical skills (items 1, and 12), organizational skills (items 4, 5 and 6), stylistic skills (items 2, 3, 7, and 8), evaluating a piece of writing (item 10) and meeting writing requirements (items 9 and 11). Item number 13 is an open-ended question.

- **Questionnaire 2: Awareness of reading and writing processes**

The second questionnaire aims at measuring students' awareness of strategic reading and writing processes. It addresses the students' cognitive processes that they need to undergo to achieve a successful written production and reading comprehension. Thus, 26 Likert type statements were devoted to the writing process divided into three categories: before writing (5 items), while writing (9 items) and when revising (12 items) (See Appendix F). Besides, 25 close-ended questions were devoted to the reading process (See Appendix F). The items related to the reading process are divided into three categories: before reading (10 items), while reading (10 items) and after reading (5 items). The

items are related to specific reading strategies namely: predicting and verifying (items 1,4,13,15,16,18,23), previewing (items 2, 3), purpose setting (items 5,7,21), self-questioning (items 6,14,17), drawing from background knowledge (items 8,9,10,19,24,25), and summarizing and applying fix up strategies (items 11,12,20,22). It is worth mentioning that the section devoted to the writing skill is adapted from the questionnaire developed by Petri and Czarl (2003), and the reading section is adapted from Schmitt's (1990) questionnaire.

- **Questionnaire 3: Students' perceptions of CBL to develop their reading and writing skills**

The third questionnaire is about students' perceptions of CBL. It was adapted from Chang and Fisher's (2003) questionnaire. It comprises four scales and 32 items; each item has a five-point Likert format: almost always (5), often (4), sometimes (3), seldom (2), and almost never (1) (See Appendix G). Hence, the experimental subjects had to circle the appropriate choice that matches the degree of their approval to the statements.

This questionnaire consists of four scales namely: Scale 1 (Access), scale 2 (Interaction), scale 3 (Response), and scale 4 (Results). The first scale of the questionnaire, named "Access", focuses on evaluating students' access in terms of convenience, efficiency and autonomy. Convenience is determined when flexibility is provided to students to have access to online learning at their own pace, yet efficiency is about giving students the opportunity to review the face-to-face lessons beyond the classroom through online learning. Autonomy is described as enabling students to decide when and how to access the e-course. The second scale of the questionnaire is called "Interaction" and is related to flexibility, reflection, quality, interaction, feedback and collaboration. For instance, flexibility is about allowing the students to meet their learning goals while reflection is achieved when students can interact regularly to give feedback to each other and present their enquiries. Besides, quality is related to the extent to which the learning activities can increase students learning, and interaction is described as allowing students to interact with each other using the asynchronous

and synchronous tools. These categories paved the way for the emergence of two other categories namely feedback and collaboration. The second scale aims also at identifying whether the students get constant feedback from their peers and the teacher as they interact and collaborate in the different tasks and activities they do.

The third scale is entitled “Response” and consists of six categories that of enjoyment, confidence, achievements, success, frustration and tedium. Enjoyment can be accomplished when students achieve academic success and have a full command of how to use technology in education. When students feel enjoyment as a result of engaging in a blended learning environment, their confidence, which is enhanced by continuous educational support, can lead to good learning outcomes. According to Tobin (1998 cited in Chang & Fisher, 2003), success, which is fourth category that the second scale focuses on, is about the use of technology to improve learning and the achievement of the course objectives. However, frustration and tedium are mainly associated with the difficulties that the students may encounter while relying on blended learning to develop their language skills and interact with their peers and the teacher. Finally, the fourth scale is called “Results” and is meant to evaluate the design of the course in terms of scope, content, activities and learning objectives. Thus, it looks whether the activities are well-structured and interactive and to what extent the learning activities are varied and answer students’ learning needs. Students’ perceptions serve as an evaluation of the use of CBL to develop literacy skills. The next section describes the third research instrument used for the present study.

#### **4.1.3.3. The Focus group interview:**

The third research tool used for the study is a focus group interview. Considering it as an interchange of views between participants, the use of interviews in research can elicit knowledge as a result of human interaction and conversation (Wright & Hendershott, 1992). Hence, in an interview, knowledge is perceived as constructed between participants who are seen as providers of

information rather than passive subjects. According to Kval (1996 cited in Cohen et al., 2007), an interview takes into account the importance of human interaction for producing knowledge and highlighting the social nature of research findings. Channel and Kahn (1968) defined the interview as “a two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information, and focused by him on content specified by research objectives of systematic description, prediction, or explanation” (quoted in Cohen et al, 2007, p. 271). Following this point, it can be noted that interviews allow participants to express and interpret their perceptions, opinions, and thoughts from their own viewpoint, leading to in-detail and holistic description of a situation or experience.

Since perceptions are perceived as personal and somewhat subjective, there was a need to deepen understanding and validate the findings of the questionnaire through conducting a focus group interview. The aim is to elicit qualitative data from the experimental subjects about their perceptions of using CBL to develop their literacy skills. Focus group interview is defined as a qualitative data collection method which consists “of a small group of people, usually between six and nine in number, who are brought together by a trained moderator (the researcher) to explore attitudes and perceptions, feelings and ideas about a topic” (Denscombe, 2007, p. 115). This tool is suitable for getting rich information about perceptions, attitudes, and experiences of a group of participants. However, in order to ensure valid and reliable data from the focus group interview, the researcher needs to be non-judgmental, open minded, demonstrate patience, respect the participants, and consider the participants’ needs (Morgan, 1997).

In the present study, a focus group interview was conducted with 10 participants from the experimental group only (3 males and 7 females). The interview questions were hinged on specific themes involving the participants’ opinions of engaging in collaborative blended learning, self-assessment of developing their reading and writing skills as a result of online learning,

advantages or disadvantages of collaborative blended learning (collaborative strategic reading, collaborative writing and online learning), possible challenges encountered while using the MOODLE learning platform, and suggestions for the improvement of the implementation of CBL in literacy skills learning. The following are the focus group interview questions:

Question 1: What is your general opinion about engaging in collaborative blended learning?

Question 2: Do you think that online learning enhanced your writing skills? If yes, in what way? Could you please describe the writing stages that were most developed?

Question 3: Do you think that engaging in online learning enhanced your reading comprehension skills? If yes, in what way? Discuss your opinion.

Question 4: What are the advantages or disadvantages of collaborative blended learning?

Question 5: Did you encounter any difficulties using the MOODLE learning platform? If yes, can you describe the problems you faced and what bothered you most?

Question 6: What are your suggestions for the improvement of the implementation of collaborative blended learning in literacy skills learning?

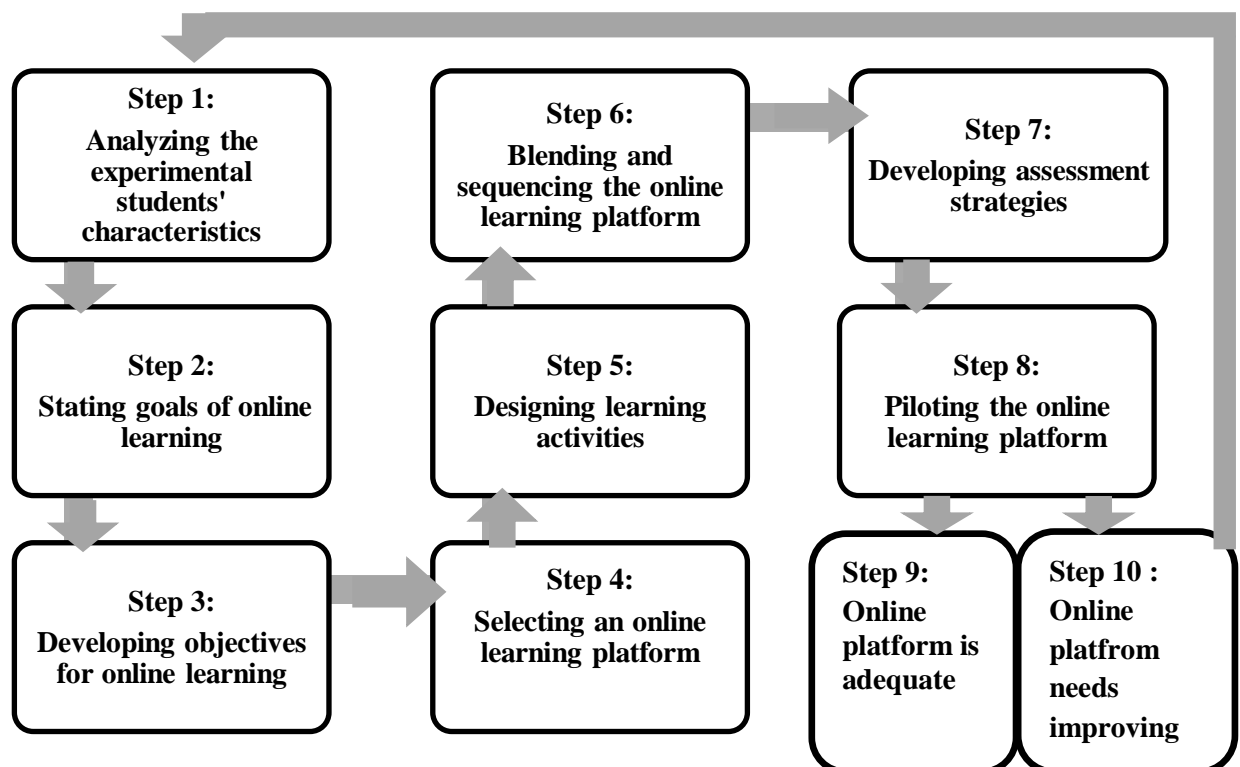
The e-course used for the present study for the experimental subjects to use beyond the classroom is described in the next section.

#### **4.1.3.4. The e-course: Educational platform for online learning**

An online e-course was created for the experimental subjects to study outside the classroom. It is worth mentioning that the online learning course, which is explained in this section, is only used for experimental purposes. Blended learning requires the use of online learning in the learning process in addition to face-to-face instruction to increase students' learning and help them develop their language skills. For this purpose, Hack's (2016) new instructional design model for blended higher education has been adapted to fit the purpose of designing an online learning platform for the experimental subjects to use outside the classroom. The model consists of ten steps. The first step, which is perceived

as the foundation for the success of the other steps, involves analyzing students' characteristics. The latter is composed of determining students' profile, needs, and learning styles. The second step is related to stating instructional goals that should address students' needs. The third step contains developing objectives that inform the students what is to be learned and help them evaluate their progress.

The fourth step is concerned with selecting an online learning platform that enables students to study beyond classroom education. The fifth step involves the selection of the learning activities that students will do while learning. In addition, the use of the online learning platform needs to be blended with face-to-face instruction through selecting a blended learning model that best fits students' preferences and this determined the sixth step. The seventh step is about developing assessment strategies and the eighth step is related to piloting which requires analyzing and revising the learning platform to ensure its validity and practicality. Step nine and ten show the results of the piloting step to see whether or not the online learning platform is adequate or needs improving. The steps are summarized in figure 4.4 below:



**Figure 4.4: Instructional model for designing an online learning platform (Adapted from Hack, 2016)**

Hack's instructional model for blended high education follows a logical sequence starting from analyzing students' characteristics to determining content that answers students' needs. Following the model's steps, students are expected to make a shift from a basic level of knowledge to a more thorough and deep understanding. Students, therefore, will be able to study outside the classroom and extend their learning hours to reinforce their knowledge, understanding, and application.

In order to design the e-course, it was necessary to collect information from the experimental subjects regarding their characteristics (i.e. their profile, learning style and needs). Therefore, the discussion of results related to the experimental subjects' characteristics is discussed in the next section and presentation of results is presented in chapter 5. The subsequent section focuses on each step mentioned earlier.

#### **4.1.3.5. The steps followed to design an e-course for the experimental subjects:**

- **Step 1: Analyzing experimental subjects' characteristics**

To design an e-course for the experimental students to use beyond the classroom, it was necessary to identify the subjects' characteristics in terms of their learning styles and learning needs so that the online platform can be used in the treatment phase. To achieve this objective, a questionnaire that consists of: students' profile, learning styles and learning needs was administered to the experimental subjects before the treatment phase. The sections below deal with the identification of the experimental subjects' characteristics: their profile, learning styles and learning needs.

##### ***Students' profile:***

Since the integration of blended learning in the learning process is based on students' characteristics, there was a necessity to draw the participants' profile in relation to technology. The experimental subjects under study report that they

use technology in education which suggests that students in the twenty first century are digitally-oriented. The technological devices that they use in learning encompass smart phones, laptops, tablets and desktop computers. Furthermore, all participants expressed a good level of digital skills and all have access to the internet through different networks such as 4G, 3G and ADSL (see details in chapter 5). In addition, most of the participants prefer learning online at home. The next section deals with the experimental subjects' learning styles.

### ***Students' Learning Styles:***

Section (b) of the questionnaire aims at determining the experimental subjects' learning styles. Starting from the fact that the success of blended learning in higher education depends on addressing students' preferences and learning styles, in the present study the learning styles of the participants in the experimental group were identified (see details in chapter 5). The following section deals with the experimental subjects' learning needs in relation to reading and writing skills.

### ***Determining students' learning needs:***

Section (c) of the questionnaire is about analyzing the experimental subjects' learning needs. It is undeniable that students differ in terms of needs, and learning is no longer a one size fits all process. As a result, the model chosen for designing the online learning platform requires determining the needs of the participants to select the learning resources accordingly (see details in chapter 5). The next section deals with the second step of the adapted model for designing an online learning course.

- **Step 2: Stating goals**

Once the needs of the students are determined and analyzed, the next step is to set instructional goals. As noted by Hack (2016), “the goal gives intent and purpose to the instruction and is a broad statement of the desired outcome” (p. 4). Goals need to address the students' needs and setting them requires a five-step analysis (Hack, 2016). The latter includes noting down the goal, brainstorming

items, sorting the items listed in the previous step, deleting redundant items, writing a comprehensive sentence to describe each of the items on the final list, and revising the sentences for coherence (see details in chapter 5). The goals for instruction need to portray an end result, and mirror students' characteristics.

- **Step 3: Developing objectives**

This step deals with developing objectives for online learning. In essence, learning objectives are specific statements that identify the results accomplished as a result of certain conditions, thereby determining the behavior performed and learned. The learning objectives will demonstrate the behavior that will occur in the students. Consequently, stating or setting objectives informs the students what is to be learned and allows them to evaluate their progress (see details in chapter 5). The next section highlights the fourth step of the adapted model for designing online learning platform.

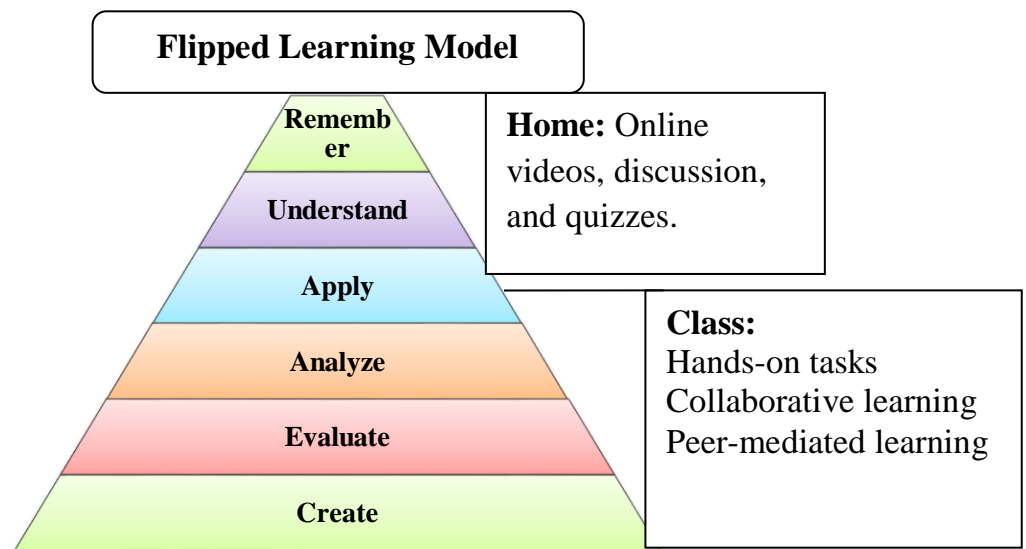
- **Step 4: Selecting an online learning platform**

This step is about selecting an online learning platform for the experimental subjects to use outside classroom. The learning platform used in the present study is based on *Moodlecloud* ([www.moodlecloud.com](http://www.moodlecloud.com)). MOODLE stands for Modular Object-Oriented Dynamic Learning Environment (Benta et al., 2014). Its aim is to allow the teacher to deliver online courses that supplement face-to-face courses. For experimental purposes, the MOODLE cloud used for the present study is hosted in a local data center in Australia. It is considered as a pathway for extending learning hours beyond classroom education through using its flexible tools. The tools that were used in the MOODLE learning platform involve synchronous and asynchronous communication (including discussion board, chat, forum, and e-mail), quizzes, and lessons (see details in chapter 5).

- **Step 5: Blending and Sequencing the online learning platform by using the flipped learning model**

This step is about blending and sequencing the designed e-course with face-to-face instruction. The combination of face-to-face instruction with online

learning helps in achieving flexibility, individualization and enhanced learning. From this perspective, choosing the right blend for students allows making sound blending decisions regarding the process of implementing the delivery system of blended courses. In the present study, since the experimental subjects preferred studying online at home (see details in chapter 5), the blend chosen for delivery is related to the Flipped Model of blended learning. First, the experimental subjects are required to have access to the online learning platform to read and understand the lesson prior to face-to-face learning. Second, they are required to attend face-to-face classes because the latter are mainly devoted to active learning, such as hands-on tasks, group work and dynamic interaction. Finally, the students need to do the posted online activities and quizzes to supplement the in-person class and deepen their understanding. Hence, online learning is more related to the lower levels of Bloom's taxonomy that of knowledge-understanding- application. Students are given the opportunity to review what has been tackled in the classroom, ask questions to deepen their understanding and do online reading and writing assignments at home.



**Figure 4.5: Flipped learning model based on Bloom's revised taxonomy (Anderson, Krathwohl & Bloom, 2001)**

- **Step 6: Designing learning activities**

The sixth step of the model adapted for designing a blended learning course is about designing learning activities. In order to create a blend that is reliable and effective, learning activities need to be designed according to the stated objectives to answer students' needs and cater to their learning styles. Since the blend chosen for the present study is the Flipped Model, the learning activities are divided into two phases.

The first phase, which is related to the lower level of learning, encompasses independent reading, reading and writing lessons, video presentations, PowerPoint presentations, and web quests. These activities are done online prior to face-to-face learning. They reflect Bloom's lower levels of learning that of knowledge, comprehension and some application.

The second phase is more related to the higher order thinking skills, involving applying, analyzing, evaluating and creating which are done in class. The face-to-face activities are based on collaborative learning (collaborative strategic reading and collaborative writing), group discussion and intensive reading and writing practice.

In online learning, the exposure to content occurs individually; however, in face-to-face learning, the exposure to content takes place in groups. Both types of learning are done in the presence of the teacher.

The online learning activities are divided into two categories. The first category is related to the reading skill. It involves reading comprehension tests about reading for detail, reading for reference and vocabulary, reading for main ideas and reading for inference which come in the form of quizzes (multiple choice questions, true/false, and matching).

However, the second category is devoted to the writing skill. It includes practice on essay writing, essay parts (introductory, body and concluding paragraphs), patterns of organization and proofreading. In addition, students can evaluate each other's work through proofreading activities or peer-evaluation.

The table below sums up the online learning activities based on the flipped learning model that will be used in the present study:

<b>Activity</b>	<b>Time allotted</b>	<b>characteristics</b>	<b>Reasons for use</b>	<b>Advantages</b>	<b>Applications</b>
<b>Reading Quizzes</b>	<b>30 mins</b>	Students work individually through a series of questions. Questions can be in the form of multiple choice questions, matching, true false, and filling the gaps.	They are used as an assessment activity that helps students test/ reinforce their understanding .	They provide feedback to the teacher on students' performance and inform the student about his/her progress.	They are applied both face-to-face and online.
<b>Video Presentations</b>	<b>5 mins To 12 mins</b>	They are used as a stimulus for discussion or as a means to explain lessons vividly and activate background knowledge.	They are used to explain and clarify concepts and motivate students.	They can be motivating and cater to different learning styles, especially the visual and auditory.	They are used in online learning.
		They can be	To help	Through online essay	They are

<p><b>Essays</b></p>	<p><b>60 mins</b></p>	<p>carried out in the classroom and online. They are meant to allow students to put what has been learned into practice</p>	<p>students practice the writing skill.</p>	<p>writing, students use the text editor in the MOODLE platform or word processing software that provides automatic scaffolding and mediation. In class, students can scaffold one another to write an essay.</p>	<p>applied both in face-to-face and online contexts.</p>
<p><b>Group Project</b></p>	<p><b>30 mins</b></p>	<p>Working collaboratively, students work on their own task, share ideas, negotiate conclusions, scaffold and give feedback to each other.</p>	<p>Project group can help develop team-working and interpersonal skills. Moreover, it can allow the students to share experiences, ideas, and clarify ambiguities</p>	<p>It can be motivating. Students can learn from each other and develop reading and writing skills.</p>	<p>It is applied in face-to-face learning.</p>

			to each other.		
<b>Proofreading activities</b>	<b>30 mins</b>	Students work in small groups and proofread each other's work.	They are used as an assessment activity.	They are useful to help students reflect upon their own performance and improve writing ability.	It takes place in both face-to-face and online learning situations.
<b>Vocabulary quizzes</b>	<b>20 mins</b>	First, students study the vocabulary list then do the different vocabulary quizzes.	They aim at enhancing students' lexical repertoire.	They improve reading for vocabulary and reference.	They are done in face-to-face and online learning.

**Table 4.1. Online and face-to-face learning activities**

- **Step 7: Developing assessment strategies**

This step is related to developing assessment strategies. Assessment is considered as a diagnostic tool that informs about the effectiveness of a certain instruction and tells about the students' progress. In the present study, the assessment strategy adopted is related to formative assessment which occurred at a regular basis during the implementation of collaborative blended learning to enhance students' reading and writing skills. It took the form of weekly quizzes and assignments. It was meant to give students feedback on their performance, identify areas that need further improvement and pinpoint any problems that might occur in relation to students' learning.

Therefore, the rationale for developing an assessment strategy within a collaborative blended learning framework is threefold. First, students' achievement can be measured and tracked. Second, it identifies areas that need improvement and demonstrates problems that students might encounter in learning. Third, developing and selecting an assessment strategy can guide and enhance the implementation of blended learning and determine which aspects are needed to further develop instruction and delivery. The following section deals with piloting the online learning platform.

- **Step 8: Piloting the online learning platform**

After creating the online learning platform for literacy skills, it was paramount to monitor feedback from the online learning platform (MOODLE) to increase readability and validity of the learning platform. Thus, the online learning platform as well as the MOODLE mobile application were pretested before their final use. It is worth mentioning that the students could download the MOODLE mobile application from Google Play Store. The rationale behind piloting the MOODLE e-course was to increase its validity, practicability and readability, to determine the time allotted for each activity and to make any necessary adjustments before its final application. The next section deals with the description of the intervention that will be applied with the experimental group.

#### **4.1.4. Description of the treatment phase for the experimental subjects:**

##### **4.1.4.1. Face-to-face Learning:**

Face-to-face learning is composed of two aspects namely collaborative strategic reading and collaborative writing. The collaborative strategic reading intervention involves three processes that of before, during and after reading, and it comprises four comprehension strategies that students learn to use. These encompass previewing, click and clunk, get the gist, and wrap up in order to determine understanding of expository texts, thereby developing reading skills.

I modeled the experimental subjects on how to use the strategies independently and within a leadership role in collaborative groups. Each group

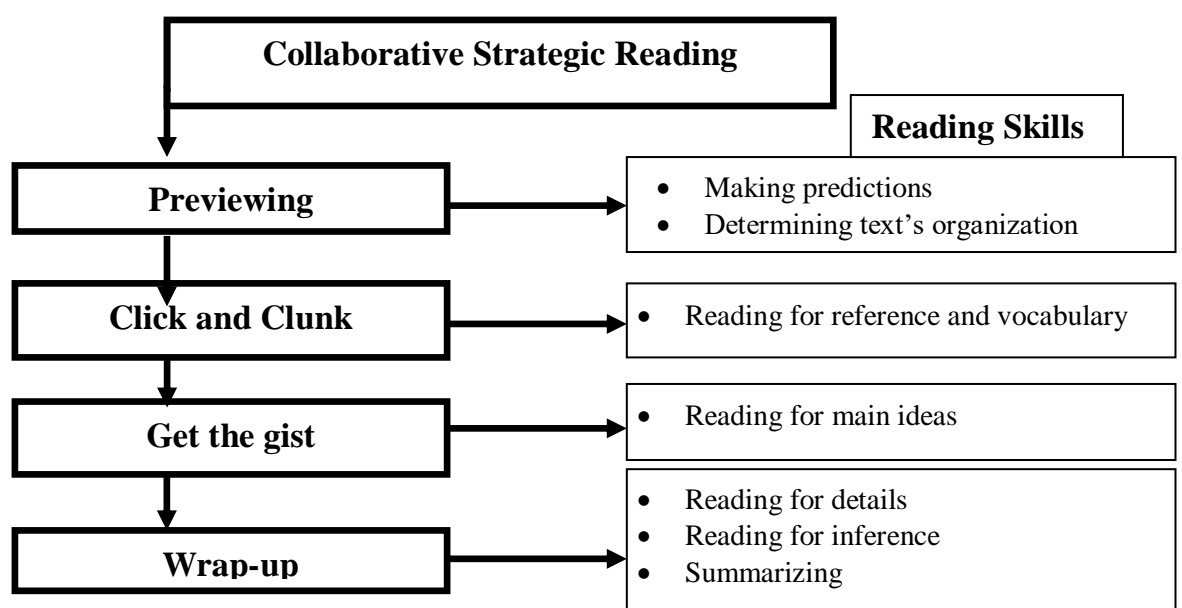
had a leader who took responsibility for guiding his/ her group members to achieve understanding of the text. In addition, each student assumed one of the following four roles: leader, clunk expert, gist expert, and question expert.

Before the students started working in collaborative groups, I modeled each strategy through an extensive use of think-alouds so that the experimental subjects know how to proceed. Hence, the participants were taught to use the previewing strategy before reading a passage. The preview practice encompasses four main activities: (1) the student leader introduces the passage topic and clarify any specialized vocabulary that may be difficult, (2) students discuss what they already knew about the topic, (3) students rely on headings or visual aids to preview the text before reading, and (4) students predict what they thought they would learn from the passage. After that the participants record their brainstormed ideas and predictions in their CSR learning log (See Appendix A).

During reading, the participants used two specific reading strategies (i.e. Click and clunk and get the gist). The purpose of the click and clunk strategy was to help students identify misunderstandings of a text then collaboratively they try to resolve and clarify the problems by using the “fix up” strategies. Thus, the participants recorded their clunks or misunderstandings in the learning log and applied the fix-up strategies to understand the meaning of a certain passage. The fix-up strategies include rereading the sentence without the difficult word and thinking about what word meaning would make sense, rereading the sentences before and after the difficult word (i.e. clunk), looking for hints to find out the word meaning, identifying grammatical elements in the word (such as prefixes, suffixes), and identifying word parts that may help in achieving understanding. This part is related to reading for reference and vocabulary skill. After recording and clarifying the difficult words, the participants relied on “get the gist” strategy to understand the main idea of the text. The participants were asked to paraphrase the most important ideas and points from a section of reading as a way of determining comprehension of the text.

After reading the text, the students moved to the final review strategy i.e. wrap up which involves generating questions in relation to the text and writing a

summary. The purpose of generating questions is to develop students' comprehension, knowledge, and memory of the text read. I taught the participants to write three levels of questions about the passage to promote understanding. The questions were divided into three main categories namely "Right and there", "Think and search", and "Author and you" questions. "Right and there" questions are those with answers related to reading for detail which can be found in one sentence in the passage. Generating scanning or detail questions allows students to concentrate on the most important ideas or point in the text and helps them remember facts that are presented in the text. "Think and search" questions are meant to help students synthesize information presented in the text. These questions help students remember several facts from the text. "Author and you" questions are related to reading for inference. Students generated questions based on the facts presented in the text to make inferences or draw conclusions. The questions generated by the participants were recorded in their CSR learning logs. Finally, I taught the participants to write in their learning logs a summary that includes the most important ideas from the passage. They were also asked to use the text to justify why these were identified as the most important ideas to remember. The following diagram portrays the use of collaborative strategic reading for developing reading skills within a collaborative blended learning framework:



**Figure 4.6. Collaborative strategic reading (CSR)**

While the participants were working in class in small groups, I provided scaffolding and feedback to assist them and monitor their understanding of the assigned text. Moreover, I encouraged the participants to provide feedback and clarify misunderstanding to each other. Students then worked in their groups reading the text, and applying the said strategies. After that the students used their learning logs to record previews, main ideas, difficult words or phrases, questions, inferences, and summaries. I moved from one group to another to guide the students, observe and provide feedback, and ask questions to check the students' comprehension and to ensure that they are using strategies to understand what they read before, during, and after reading.

Next, the participants proceeded to writing using the process approach which includes pre-writing, drafting, revising and editing. The experimental subjects worked in pairs and sometimes in a group of three members to tackle the writing task collaboratively using the stages of the process approach to writing. Hence, the pre-writing stage encompasses brainstorming, planning, organizing ideas, and outlining. Then the drafting stage required students to start writing without stopping. In the revising stage, the students were required to focus on word choice, sentence structure and coherence. Finally, the editing stage consisted of correcting their mistakes related to spelling, accuracy and punctuation.

In the pre-writing stage, the students had to work collaboratively to brainstorm, generate and discuss ideas. In addition, they were allowed to use their offline dictionaries to find other words or certain vocabulary that could be used in their writing. Finally, they had to organize the ideas that they had generated and produce an outline for their essays.

After completing the pre-writing phase (i.e. brainstorming, generating ideas and outlining), each student produced his own essay individually without asking the help of other members of the group. The students were required to use the ideas and vocabulary that they had generated during the pre-writing stage in their writing.

During the revising stage, the students revised their essays collaboratively through reading the essay and identifying incorrect sentences and words. Thus, the students provided feedback and comments on their peers' essays through discussing possible suggestions and organization. After that the students re-wrote the second draft of their essays.

In the editing stage, the students edited their essays collaboratively. This stage was related to accuracy, spelling and punctuation. As a result, the students focused on correcting mistakes related to spelling, punctuation and accuracy. However, if the students faced difficulties in proofreading each other's essay, they could ask the help of the teacher or rely on any accessible resources such as dictionaries, mobile devices or spell checker.

The students engaged in substantive interaction and responsibility to produce a well-structured essay. Moreover, they were encouraged to exchange ideas with each other, provide feedback and scaffolding to each other. The next section describes the online learning context.

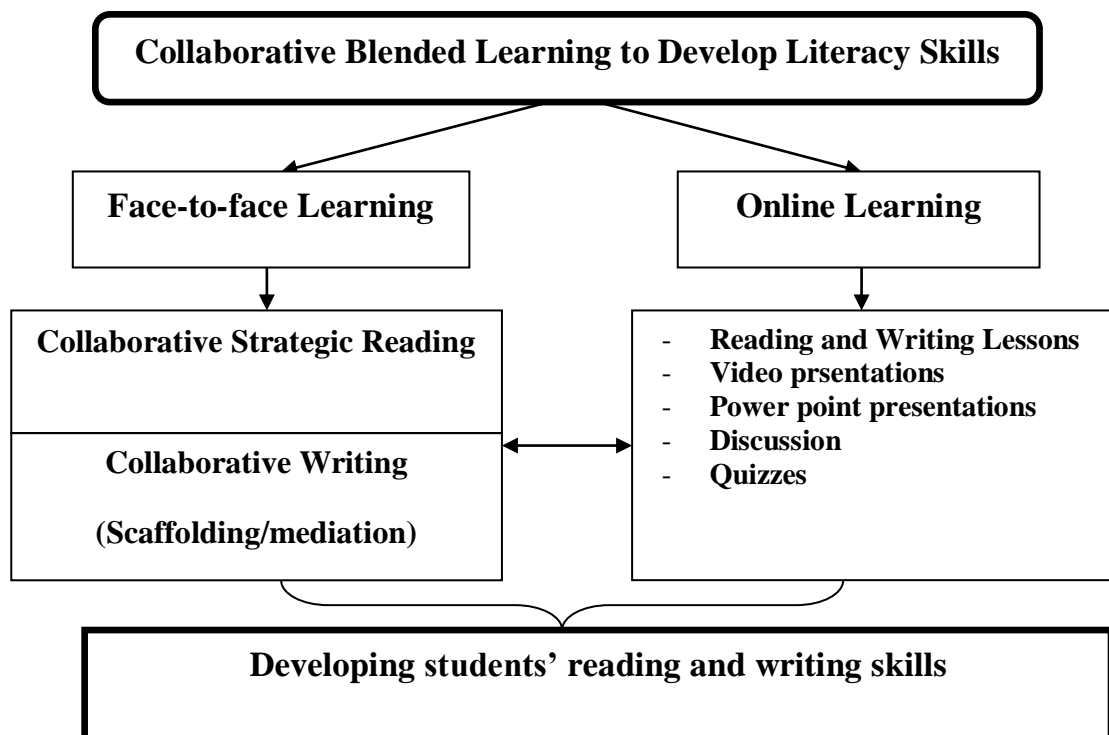
#### **4.1.4.2. Online learning:**

The students were given usernames and passwords to get access to the Moodlecloud platform (see details in chapter 5). I was able to contact the students through using the synchronous and asynchronous tools and give feedback on their written productions and reading quizzes. Since the website records the students' access and scores, I could know whether or not the students logged on the website, the attempts to try to finish the quizzes, and the scores they obtained.

Before class, the experimental subjects were assigned topic outline and video lectures and demonstrations. They watched the videos posted and read the explanation of the reading and writing lessons. After that, they were required to engage in a group discussion asking questions and exchanging clarification.

Once the experimental subjects understood the reading and writing lesson, they completed the quizzes to test their understanding of the key concepts and to give the teacher a formative assessment measure. When the students arrived in

class, they quickly reviewed the topic and asked questions, then spent the majority of the class session doing pair or group work. The Flipped Model of blended learning, which is based on a process of “before-during-after”, allowed the participants to first learn online (before), second, to practise through face-to-face learning (during) and finally to study online to reinforce understanding and practice (after). Hence, the lower order skills of learning are practiced online, and the higher-order skills (i.e. applying, analyzing, evaluating and creating) are accomplished through active learning (i.e. collaborative strategic reading and collaborative writing) in the classroom. Figure 4.7 below summarizes CBL and the activities involved in each type of learning.



**Figure 4.7. Description of the treatment phase**

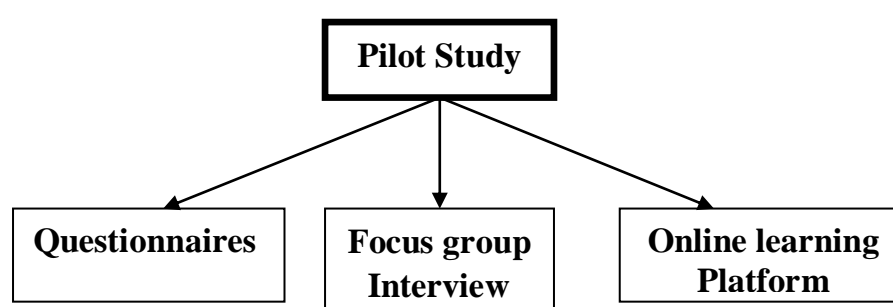
It is worth mentioning that the same face-to-face content was delivered to both samples under study; however, the experimental subjects benefited from extra practice and instruction using online learning outside the classroom.

#### **4.1.5. Research procedure:**

The objective of this study was to examine the impact of collaborative blended learning on developing first year EFL degree students' literacy skills in the department of English at the University of Algiers 2. The effect of CBL on the reading and writing performance of these students was measured by comparing their reading and writing achievement before and after the use of CBL. The pilot study, which is described in the next section, was meant to test the research instruments used for the present study.

##### **4.1.5.1. Pilot study:**

The pilot study, which was carried out in the first semester of the academic year 2017-2018, was conducted with 12 first year students to test the practicality of the research instruments, thereby increasing their validity and reliability. The pilot study included one session in which I conducted a pre study (one session) before the implementation of the instruments to put into practice collaborative strategic reading and collaborative writing and to use the online learning platform, as part of a blended learning approach. Therefore, the pre-study was meant to reveal any weaknesses in the instruments used and to increase the validity of the research.



**Figure 4.8. Pilot study research tools**

In the pilot study, the students had to work collaboratively to read and give comments on the test, questionnaire items and interview questions. The aim behind piloting the interview questions and questionnaire was to ensure that the items accurately addressed the research questions and to test whether the

questionnaire was readable and clearly understood by the participants. Thus, some of the words (such as autonomy, synchronous, asynchronous, requirements, flexibility, and peer feedback) were unclear for the participants which necessitated the need to render them clearer by using synonyms. Moreover, in the learning needs related to the writing skill, items number 24 and 17 needed more implicitness and clarification. Based on the participants' comments, some statements were modified to render them clearer.

Besides, the results of the pilot study revealed that there was a necessity to make slight adjustments regarding the number of quiz attempts and the time devoted for the online quizzes and assignments. Hence, the number of attempts was changed from one to two, and the time devoted for reading comprehension tests was extended from 20 minutes to 30 minutes.

#### **4.1.5.2. The follow-up study:**

The follow-up study was carried out during the second semester of the academic year 2017-2018. The different research instruments were used during the classes and exams set by the department of English.

In the pre-treatment phase, a pre-test was submitted to both experimental and control subjects under study. In order to draw the students' characteristics, a questionnaire about students' profile, learning styles and reading and writing learning needs was administered to the experimental subjects. It was followed by a questionnaire about students' awareness of the reading and writing processes administered to both groups to uncover the strategies that students use in pre, while and post reading and writing tasks. Then I collected the pretest results obtained by both experimental and control subjects in reading and writing and started the intervention with the experimental group only by using collaborative strategic reading and collaborative writing in class and online learning outside class. The experimental subjects in the experimental group had access to the online learning platform, attended face-to-face classes, and practised reading and writing extensively through posted quizzes and assignments.

In the post treatment phase, a post-test was administered to both experimental and control groups in addition to the same questionnaire given in the pretreatment phase about awareness of the reading and writing processes. Finally, a questionnaire was administered in combination with a focus group interview conducted with the experimental subjects only to find out about their perceptions of CBL to develop their literacy skills and to triangulate the findings obtained with the other instruments. Table 4.2 below sums up the research tools used in both experimental and control groups:

<b>Research Tools</b>	<b>EXP</b>	<b>CTR</b>
Reading and writing tests	YES	YES
Questionnaire 1: experimental subjects' characteristics	YES	NO
Questionnaire 2: awareness of reading and writing processes	YES	YES
Online learning platform (e-course)	YES	NO
CBL	YES	NO
Questionnaire 3: Students' perceptions of CBL	YES	NO
Focus Group Interview	YES	NO

**Table 4.2: The research tools used in experimental and control groups**

Moreover, the timeline of the data collection procedure of the present study is summarized in table 4.3 below:

<b>Time schedule</b>	<b>Sample</b>	<b>Data Collection Procedure</b>
<b>January 2018</b>	<b>EXP + CTR</b>	Pre-test and questionnaire about awareness of reading and writing processes
	<b>EXP</b>	Questionnaire about experimental subjects' characteristics
<b>January February</b>	<b>EXP</b>	Introduction of collaborative strategic reading; Teacher modeling for reading strategies in collaborative strategic reading, giving usernames and passwords to the students to access the learning platform.

February March April May	EXP	Collaborative Blended Learning : - Collaborative writing - Collaborative strategic reading - Online learning
June 2018	EXP + CTR	Posttest and questionnaire about awareness of reading and writing processes
	EXP	questionnaire about perceptions of using CBL + Focus group interview

**Table 4.4: Timeline of the experimental study**

#### **4.1.6. Data analysis procedure:**

Data analysis is considered as the most significant phase of a research study since it is based on selecting analytical methods to transform the raw information into meaningful data for answering the research questions (Creswell, 2009). This research study aims at investigating the impact of collaborative blended learning on developing literacy skills in first year degree students at the University of Algiers 2. For this purpose, different analytical methods were used to compare students' proficiency in reading and writing before and after the use of CBL, thereby analyzing the findings of the present research from more than one standpoint. These approaches consist of quantitative and qualitative methods of analysis and are described in the sections below.

##### **4.1.6.1. Quantitative analysis:**

This analytical method was applied to the test and questionnaire. On the one hand, it aimed at analyzing the change of the participants' responses to the questionnaire about their awareness of the reading and writing processes and comparing between the control and experimental groups performance before and after the treatment. This is achieved by calculating the mean and absolute change. The arithmetic value of the mean is:

$$\bar{x} = (\sum x_i) / n$$

- $\bar{x}$  just stands for the “mean”
- $\Sigma$  means “add up”

- $x_i$  “all of the x-values”
- $n$  means “number of participants”

This arithmetic value was taken from: <https://www.statisticshowto.com/>

In order to calculate the absolute change, the ending mean score is subtracted from the starting mean score: Mean score 2 – mean score 1

On the other hand, statistical analysis was used to analyze the results of the reading and writing tests, thereby enabling comparison between the groups under study. Hence, t-test procedure was used to compare the mean scores for experimental and control groups in the reading and writing test. The equations used for the t-test include:

- **Independent samples t-test:** it compares the means for both groups.

$$t = \frac{\mu_A - \mu_B}{\sqrt{\left[ \frac{\left( \sum A^2 - \frac{(\sum A)^2}{n_A} \right) + \left( \sum B^2 - \frac{(\sum B)^2}{n_B} \right)}{n_A + n_B - 2} \right] \cdot \left[ \frac{1}{n_A} + \frac{1}{n_B} \right]}}$$

- **Paired sample t-test:** it compares the means from the same group at different times.

$$t = \frac{(\sum D)/N}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{(N-1)(N)}}}$$

The t-test equations were taken from: <https://www.statisticshowto.com/>

Moreover, the reading and writing tests were analyzed in detail. The writing skills (organizational, visual, grammatical, and stylistic skills) were analyzed by using a rubric through counting the number of students who have low, need improving, good and very good writing skills and turning them into percentages. The reading skills (reading for main ideas, reading for details, reading for vocabulary, reading for reference and reading for inference) were

analyzed separately through computing the mean and percentage of each skill. The findings are summed up in tables and illustrated by diagrams.

The first and third questionnaires were analyzed by calculating the percentage of each aspect of the Likert scale. However, with reference to the second questionnaire about awareness of reading and writing processes, the analysis comprises the ordinal level of measurement which is related to the degree of students' approval or shows an ordering of measurements. Thus, in order to determine comparison between the two samples under study before and after the treatment regarding students' awareness of reading and writing processes, the participants responses need to be converted into interval scores by calculating the mean to get more accurate data and to be able to track the change that may occur in the participants' answers.

#### **4.1.6.2. Qualitative analysis:**

The qualitative data for this study were collected through a focus group interview with 10 participants from the experimental group. Since the data revolve around specific themes, a content analysis procedure was used to analyze the data. Thus, as long as the themes can be identified, content analysis can be used to extract the categories and sub categories from the interview transcripts. In order to achieve substantial categories, coding was used as it plays a crucial role in content analysis and helps in organizing and categorizing data from a careful analysis of the transcripts (Bryman & Burgess, 1994).

In order to analyze the experimental subjects' responses to the interview, six coding themes were used: opinion related to engaging in CBL, reading and writing development as a result of online learning, advantages and disadvantages of the e-course, difficulties in using the MOODLE learning platform, and suggestions for the improvement of CBL methodology. These themes were formed on the basis of the interview questions. The categories, sub-categories and meaning that emerged from the transcripts after the interview were classified and summarized in tables and illustrated by examples from the interview transcripts.

## **Conclusion**

The present chapter aimed at describing the research design of the study in order to investigate the effect of collaborative blended learning on developing first year degree students' literacy skills in English at university. For this purpose, a quasi-experimental design was opted for this study and three research tools were used to fulfill the stated objective. The sample population for this experiment involves 100 first year degree students and is divided into two groups: 50 experimental subjects and 50 control subjects. In the pre-treatment phase, both samples were evaluated in order to determine their reading and writing proficiency before starting the study. Then the treatment, which was based on the use of CBL for literacy skills development, was done to the experimental group while the control group received the conventional method of reading and writing instruction. In the post treatment phase, both samples were post evaluated to determine the impact of the intervention and to render comparison possible between the two groups. Three research tools were utilized to make the findings valid and reliable. These involved a reading and writing test, three questionnaires, and a focus group interview. In addition, an online e-course was created for the experimental subjects to study beyond the classroom. To analyze the data, two types of analytical methods were used namely: quantitative and qualitative methods to describe, interpret and compare the findings according to the research variables. This chapter has also described the pilot study and provided an in-depth description of the research procedure, research instruments, and data analysis procedure. The following chapter deals with data analysis and presentation of results.

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**CHAPTER 5:  
DATA ANALYSIS  
AND  
PRESENTATION OF RESULTS**

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## Chapter 5

### Data analysis and presentation of results

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## **Introduction:**

While the preceding chapter provided a description of the research design and procedure of the present research study, the present empirical chapter aims at analyzing and presenting the results elicited from the research instruments. Therefore, the different findings which emerged from the research tools were analyzed using quantitative and qualitative analytical methods. This empirical chapter is divided into two sections. The first section deals with the pre-treatment phase in which the analysis of the reading and writing pre-test and questionnaires about experimental subjects' characteristics and awareness of reading and writing processes took place. The second section is devoted to the post-treatment phase which includes the analysis of the reading and writing post-test, questionnaire about students' awareness of reading and writing processes, perceptual questionnaire and focus group interview.

This research study is conducted to answer three research questions:

1. Does collaborative blended learning enhance students' ability to read and write effectively?
2. Does engaging in collaborative blended learning raise students' awareness of reading and writing processes?
3. What are the students' perceptions of using collaborative blended learning to develop their reading and writing skills?

Thus, this investigation seeks to examine the effect of using collaborative blended learning on three dependent variables: participants' reading and writing ability, awareness of reading and writing processes and perceptions of using CBL. As in many empirical studies involving manipulation of variables, the present research study aims at finding the causal relationship between the research independent variable and dependent variables.

## **5.1. Results of the pre-treatment phase to experimental and control subjects:**

This stage seeks to assess the experimental and control subjects' reading and writing ability to determine their level of proficiency before starting the intervention. This was achieved by administering a reading and writing pre-test to both samples (EXP and CTR) under study. As described in chapter 4, the test was followed by two questionnaires. The first questionnaire, which was administered to the experimental subjects only, was about the experimental subjects' characteristics, and the second questionnaire administered to both groups under study was about the participants' awareness of reading and writing processes. Hence, through administering the mentioned instruments, a clear picture could be drawn prior to embarking on the intervention itself that is based on the use of collaborative blended learning to develop literacy skills and implemented only with the experimental subjects. The data obtained through these research instruments (test and questionnaires) were analyzed quantitatively and qualitatively. The section below presents the results of the analysis of questionnaire 1 administered to the experimental subjects.

### **5.1.1. Analysis of questionnaire 1: Experimental subjects' characteristics**

This questionnaire was administered to the experimental subjects only and sought to identify their characteristics. It consists of three sections namely: Experimental subjects' profile in relation to ICT use, identifying the subjects' learning styles and determining their learning needs in relation to reading and writing skills. The results of this questionnaire served as a foundation for the design of the e-course as described in the preceding chapter, the discussion of the findings related to this questionnaire are presented in chapter 4. The next section deals with analysis of the experimental subjects' profile.

#### **5.1.1.1. Experimental subjects' profile:**

**Instruction to students:** *You are kindly requested to answer the following questions and tick in the right box(es). There are no right or wrong answers .*

Section (a) of the questionnaire was meant to identify the experimental participants' profile in relation to ICT use. Table 5.1 below presents the findings which emerged from the experimental subjects' responses to the 6 questions:

<b>N</b>	<b>Question (s)</b>	<b>Items</b>	<b>Results</b>	
<b>1</b>	As a student, do you use technology in education?	Technology use in education	<b>Yes</b>	<b>100%</b>
			<b>No</b>	<b>0</b>
<b>2</b>	What kind of technological devices do you often use for learning? (Tick all that apply)	Technological devices	<b>Smart phone</b>	<b>88%</b>
			<b>Laptops</b>	<b>64%</b>
			<b>Tablets</b>	<b>29%</b>
			<b>Desktop computers</b>	<b>17%</b>
<b>3</b>	How do you rate your digital skills?	Digital skills rating	<b>Very good</b>	<b>21%</b>
			<b>Good</b>	<b>74%</b>
			<b>Fair</b>	<b>05%</b>
<b>4</b>	Do you have access to the internet?	Internet access	<b>Yes</b>	<b>100%</b>
			<b>No</b>	<b>0</b>
<b>5</b>	If yes, what type of internet connection do you have? (Tick all that apply)	Type of internet connection	<b>ADSL</b>	<b>55%</b>
			<b>4G</b>	<b>43%</b>
			<b>3G</b>	<b>29%</b>
<b>6</b>	Where do you prefer to study online?	Online learning preference	<b>At home</b>	<b>93%</b>
			<b>At university</b>	<b>7%</b>
			<b>At an internet café</b>	<b>0%</b>

**Table 5.1: Experimental subjects' profile in relation to ICT use**

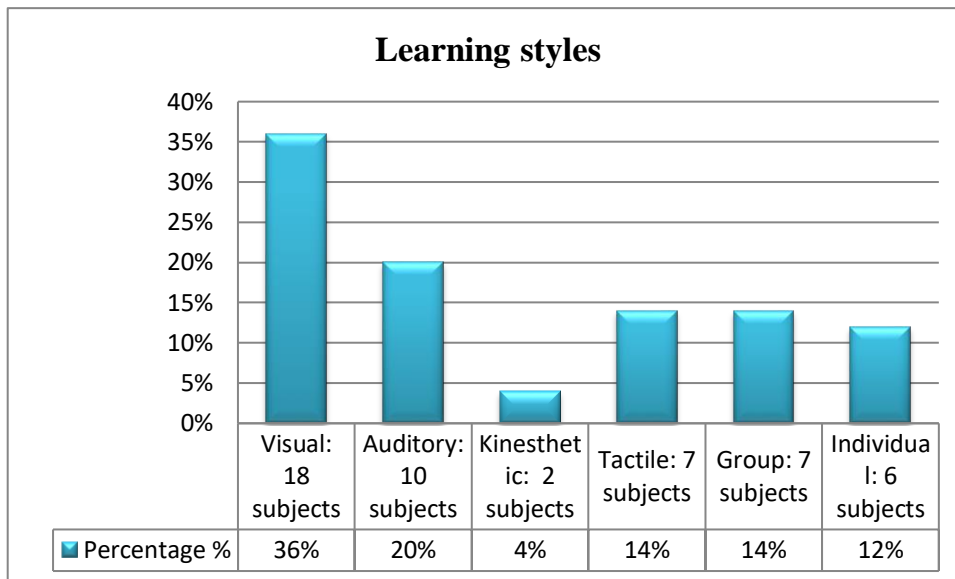
Table 5.1 shows the experimental subjects' profile in relation to technology use. The analysis experimental subjects' profile in relation to

technology use reveals that all participants (100%) in this study use technology in education. The technological devices that they use most for learning include smart phones (89%) and laptops (64%), but the least used for learning are tablets (29%) and desktop computers (17%). Moreover, all experimental subjects expressed different levels of digital literacy ranging from good (74%), very good (21%), to fair (5%). Given that blended learning requires the use of online learning, it is necessary to find out whether the subjects have access to the internet. The results show that all subjects (100%) have access to the internet through using different networks: ADSL (55%), 4G (43%), and 3G (29%). In addition, the majority of the experimental subjects prefer learning online at home (93%), and only (7%) like studying online at university. The section below presents the results related to section (b) of questionnaire 1.

#### **5.1.1.2. Identifying experimental subjects' learning styles:**

**Instruction to students:** *This question is meant to help you identify the way(s) you learn best or the way(s) you prefer to learn. Read each statement and respond to the statements as they apply to your learning at university. Decide whether you agree or disagree with each statement by ticking the following: 5= Strongly agree, 4= Agree, 3= Undecided, 2=Disagree, 1=Strongly disagree*

This question aimed at identifying the learning styles of the experimental subjects in order to take their learning style preferences into consideration in the design of the online learning activities. This section of questionnaire 1 was adapted from Reid's (1995). The results of the experimental subjects' learning styles are presented in diagram 5.1 below:



**Diagram 5.1: Experimental subjects’ learning style preferences**

Diagram 5.1 displays the learning style preferences of the experimental subjects. It is apparent from the findings presented in diagram 5.1 above that the learning style preferences for the majority of the experimental subjects is the visual learning style (36%) followed by auditory learning style (20%) and tactile learning style (14%). The group learning style preference is (14%), and the individual learning style preference is (12%). The next section shows the analysis of the experimental subjects’ learning needs.

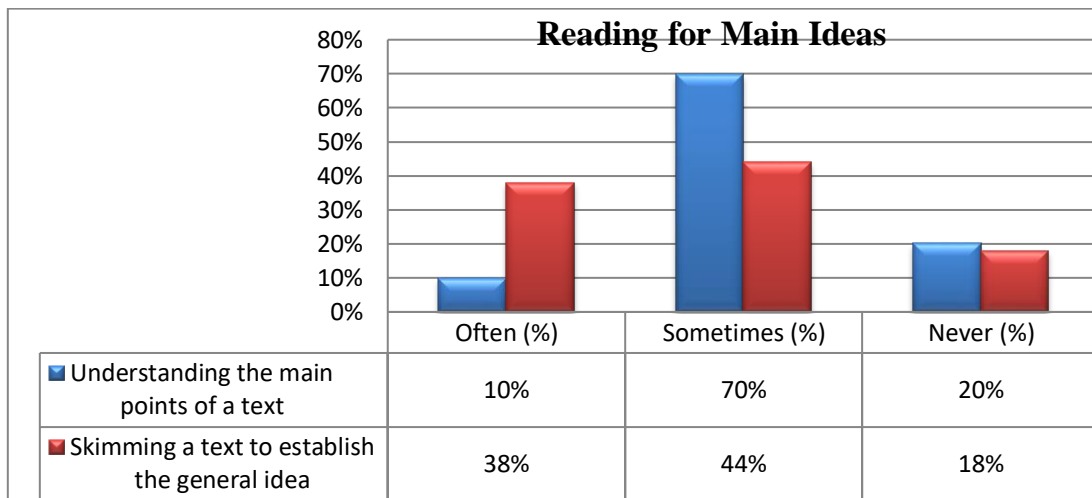
### 5.1.1.3. Determining experimental subjects’ learning needs:

**Instruction to students:** *Indicate how often you have difficulty with each of the following: Please circle the appropriate choice: Never (1), Sometimes (2), Often (3).*

The learning needs of the experimental subjects regarding reading and writing skills are used to determine the content of the online learning platform. The experimental subjects were asked to identify their learning needs through rating a three-point Likert scale with the following descriptors: 1 = never 2 = sometimes, 3 = often. The results of the experimental subjects’ learning needs related to the reading skill are presented in the section below.

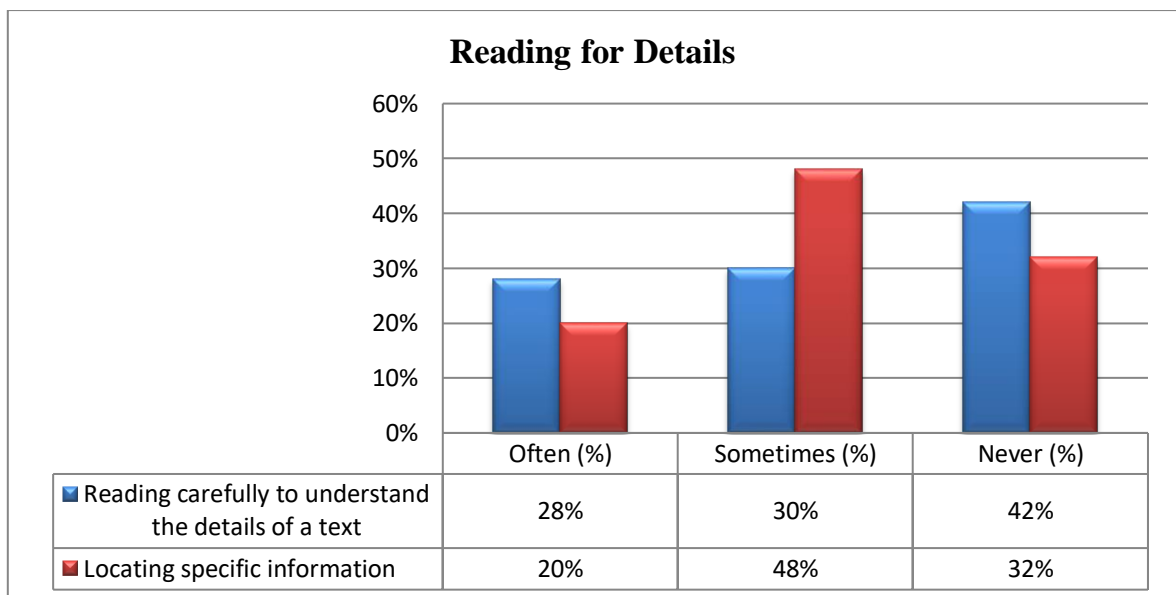
- **Learning needs regarding the reading skill:**

The results of the analysis are presented in the diagrams below:



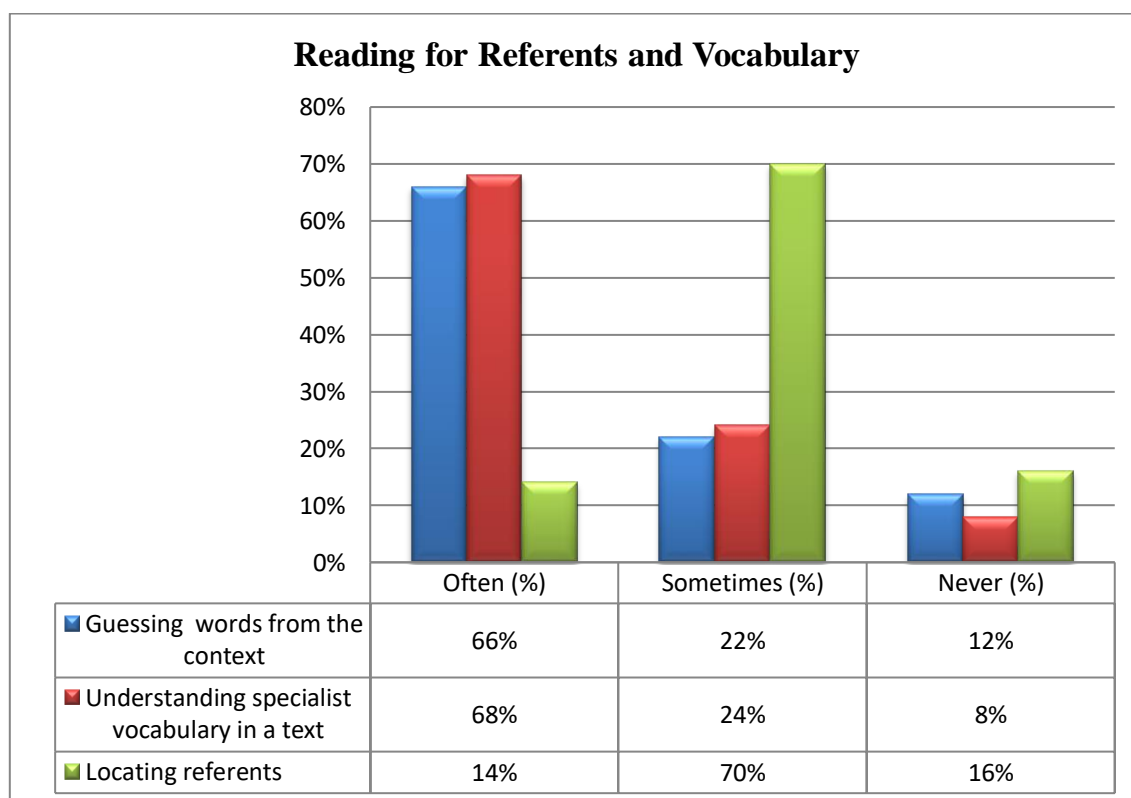
**Diagram 5.2: Learning needs for reading for main ideas**

Diagram 5.2 presents the learning needs regarding reading for main ideas. The results, presented in diagram 5.2, reveal that the experimental subjects sometimes face difficulties in understanding the main points of a text (70%) and skimming the text to extract its general idea (44%). The diagram below presents the results of reading for details learning needs.



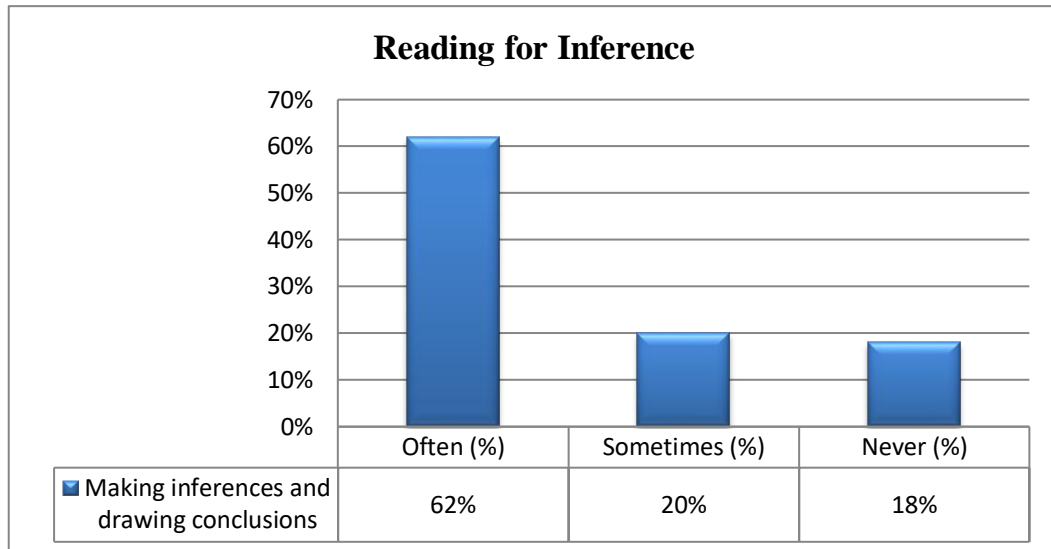
**Diagram 5.3: Learning needs for reading for details**

Diagram 5.3 shows the experimental subjects' learning needs for reading for details. Starting from the findings shown in diagram 5.3 above, the experimental subjects report that that they never (42%) have difficulties in reading the text carefully to achieve understanding. However, 48% say that they sometimes face deficiencies in locating specific information in a text. The diagram below demonstrates the results of the experimental subjects' learning needs for reading for referents and vocabulary.



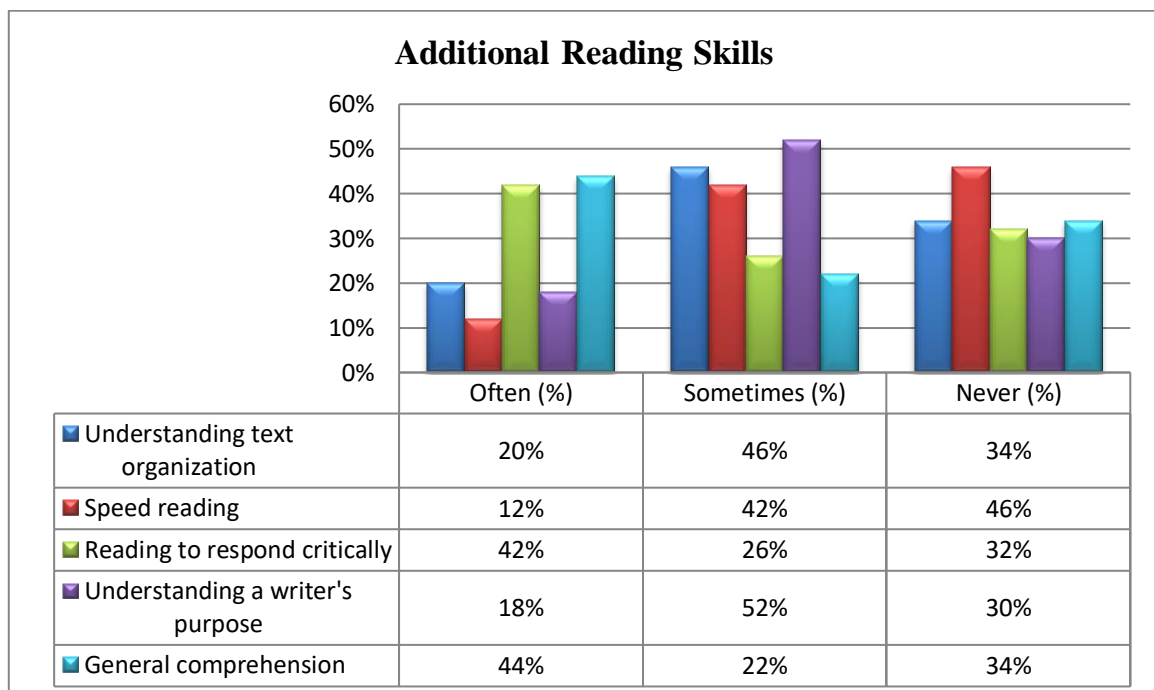
**Diagram 5.4: Learning needs for reading for referents and vocabulary**

Diagram 5.4 displays the learning needs of the experimental subjects for reading for referents and vocabulary. As can be seen from the data displayed in diagram 5.4 above, the experimental subjects express the need for developing reading for referents and vocabulary skills. Thus, they often face difficulties in guessing unknown words from the context (66%) and understanding specialist vocabulary in a text (68%). They sometimes find it difficult to locate referents within a passage (70%). Diagram 5.5 below shows the findings of reading for inference.



**Diagram 5.5: Learning needs for reading for inference**

Diagram 5.5 presents the experimental subjects' learning needs for reading for inference. The data presented in diagram 5.5 reveal that the participants often (62%) face difficulties in making inferences and drawing conclusions from a passage. The diagram below displays the results of additional reading skills.

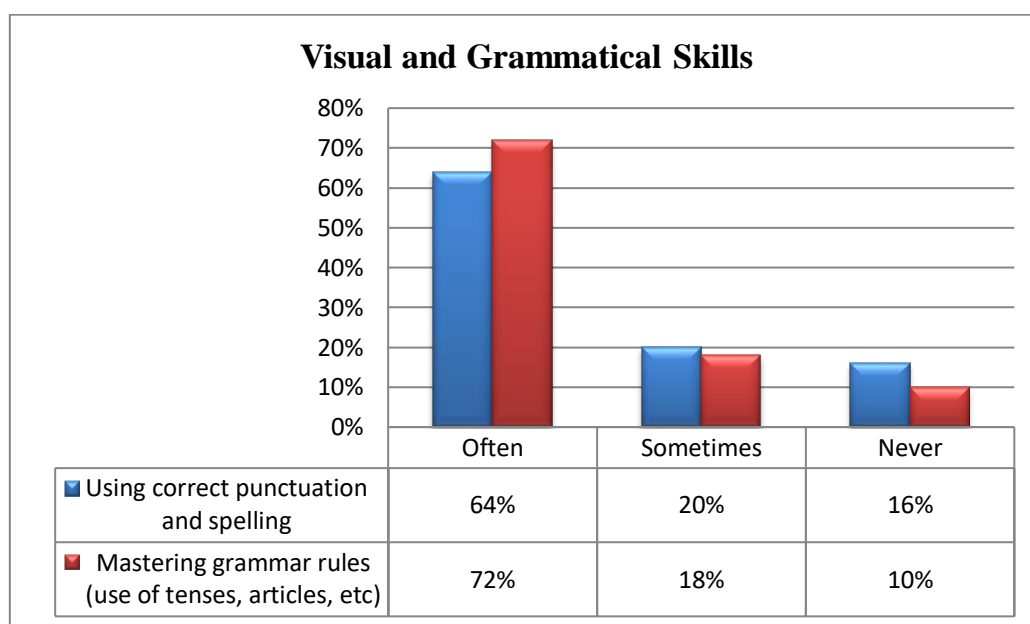


**Diagram 5.6: Learning needs for additional reading skills**

Diagram 5.6 shows the experimental subjects' learning needs for additional reading skills. It is apparent from diagram 5.6 above that the experimental subjects report that they sometimes find difficulties in understanding the writer's purpose (52%) and text organization (46%), but they often have difficulties in reading to respond critically (42%) and achieving general comprehension of a text (44%). However, 46% say that they never have problems in reading speed. The next section deals with the analysis of results of the experimental subjects' learning needs regarding the writing skill.

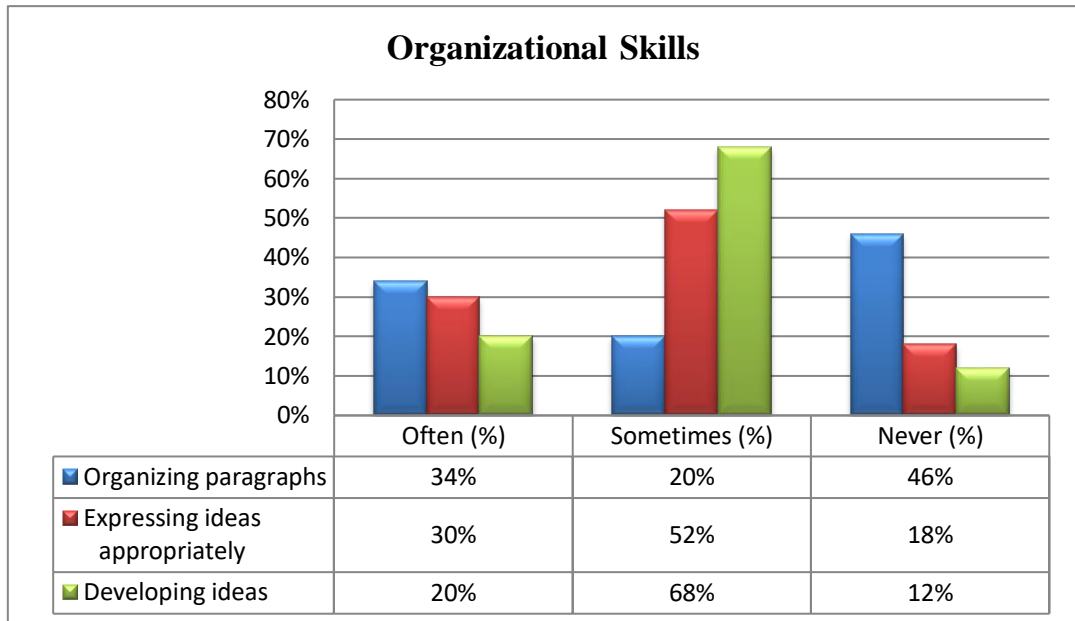
- **Learning needs regarding the writing skill:**

The results of the analysis of the experimental subjects' learning needs related to the writing skill are displayed in the diagrams below:



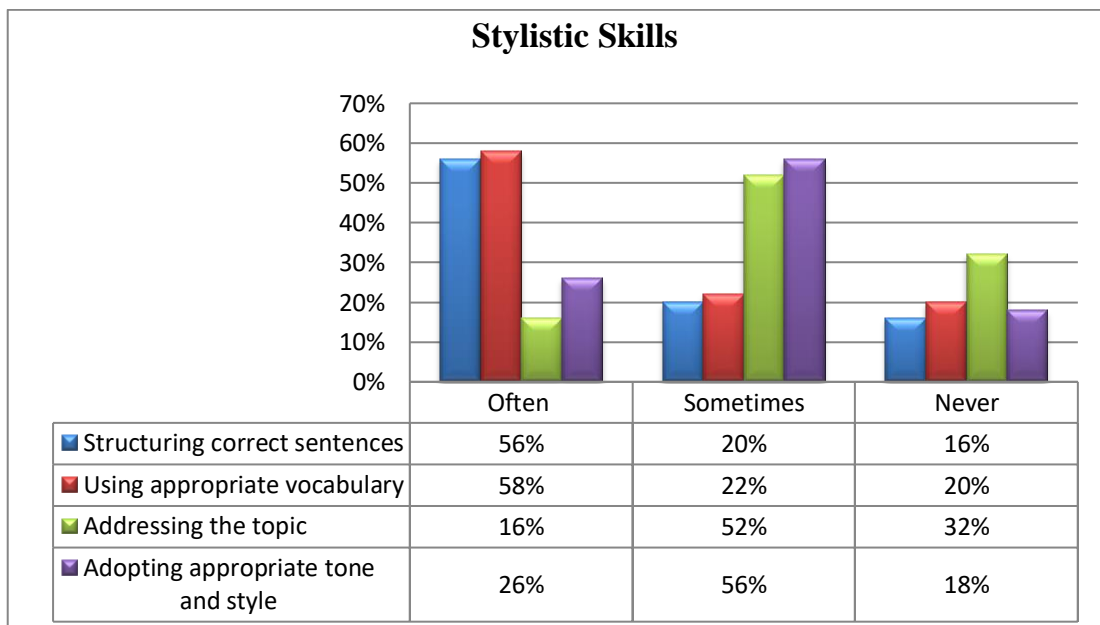
**Diagram 5.7: Learning needs for visual and grammatical skills**

Diagram 5.7 shows the experimental subjects' learning needs for visual and grammatical skills. As can be seen from diagram 5.7, the experimental subjects report that they often (64%) have constraints in using correct punctuation and spelling, and 72% of the respondents claim that they often face difficulties in employing correct grammar rules. Diagram 5.8 below presents the findings of organizational skills.



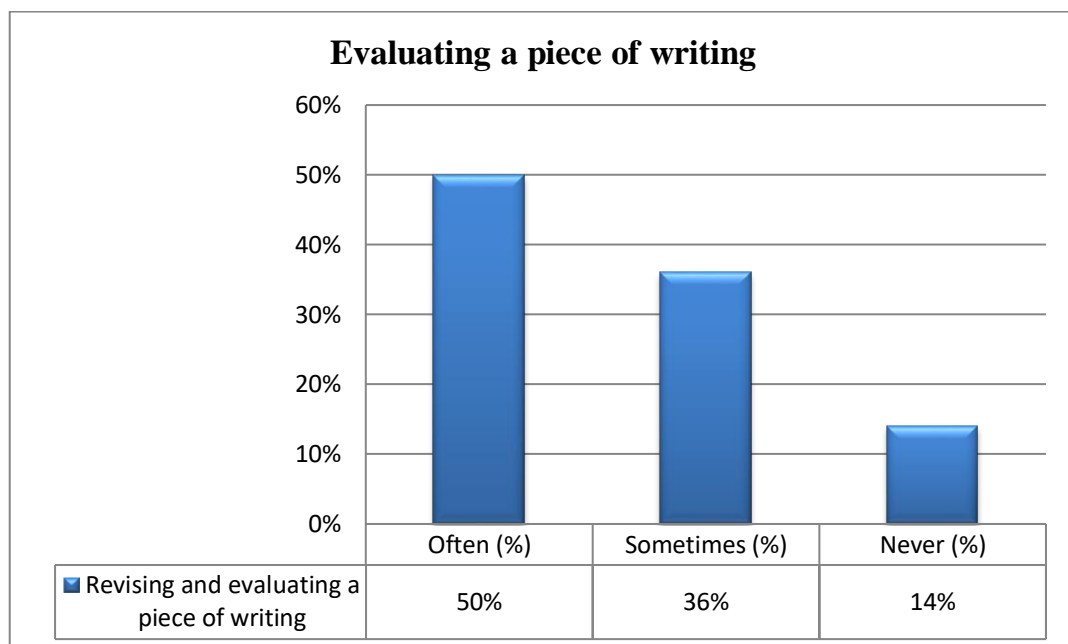
**Diagram 5.8: Learning needs for organizational skills**

Diagram 5.8 shows the experimental subjects' learning needs for organizational skills. It appears from the findings presented in diagram 5.8 above that only 46% of the experimental subjects do not have deficiencies in organizing paragraphs. However, the participants sometimes face deficits in developing (68%) and expressing ideas appropriately (52%). The diagram below demonstrates the results of stylistic skills.



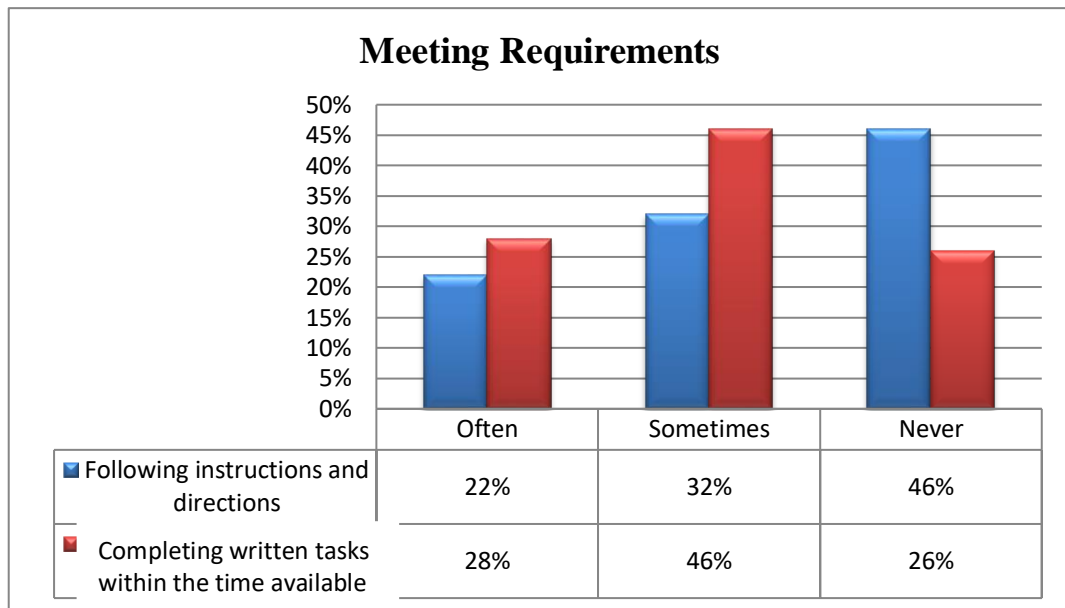
**Diagram 5.9: Learning needs for stylistic skills**

Diagram 5.9 presents the experimental subjects' learning needs for stylistic skills. As can be shown in diagram 5.9 above, the experimental subjects report that they often face difficulties in structuring correct sentences (56%) and in using appropriate vocabulary (58%). Besides, addressing the topic (52%) and adopting appropriate tone and style (56%) are the most frequent difficulties that the experimental subjects sometimes face in writing. Diagram 5.10 below displays the results of evaluating a piece of writing.



**Diagram 5.10: Learning needs for evaluating a piece of writing**

Diagram 5.10 demonstrates the experimental subjects' learning needs regarding evaluating an essay. It appears from diagram 5.10 above that half of the participants report that they often (50%) have constraints on how to revise and evaluate a piece of writing. Diagram 5.11 shows the results of meeting writing requirements.



**Diagram 5.11: Learning needs for meeting writing requirements**

Diagram 5.11 presents the experimental subjects' learning needs for meeting requirements while writing. Starting from the findings presented in diagram 5.11 above, 46% of the participants sometimes have difficulties in completing written tasks on time. However, 46% report that they can follow instructions and directions easily.

On the basis of the aforementioned results regarding experimental subjects' characteristics, the learning style preference for the majority of the experimental subjects is the visual learning style. Students who possess a visual learning style rely mainly on seeing the information through using drawings, pictures, watching videos and reading texts. The results indicate that the visual learning style is followed by the auditory learning style. Students, who possess the auditory learning style, are more interested in studying in pair or group, and they prefer listening to lectures and participating in discussions. From these results, the e-course materials consist of videos, PowerPoint presentations, diagrams, colors, and discussion boards to cater to students' learning styles.

Moreover, the experimental subjects in the present study identified several difficulties or learning needs related to the reading and writing skills. Regarding the reading skill, the majority of the experimental subjects expressed the need to

develop reading for vocabulary and reference (guessing words from the context and locating referents), reading for inference (making inferences and drawing conclusions), reading for details (locating specific information in a text) and reading for main ideas (understanding the main ideas of a text and understanding the gist). Concerning the writing skill, the experimental subjects highlighted the need to develop visual skills (spelling and punctuation), grammatical skills (Grammar rules), organizational skills (expressing and developing ideas), and stylistic skills (sentence structure, using appropriate vocabulary, addressing the topic and adopting appropriate tone and style). It is worth mentioning that priority is placed on the mentioned skills through selecting appropriate texts and resources to answer students' needs and develop their ability to read and write effectively. Therefore, the e-course involves different activities that focus on answering students reading and writing learning needs and provides regular practice and training in these reading and writing areas to help them develop their reading and writing outcomes.

In the present study, the general goals of designing the e-course for literacy skills are threefold: (1) to develop students' reading ability, (2) to develop students' writing ability and (3) to raise students' awareness of the reading and writing processes. The goals and behavioral objectives of online learning, as part of blended learning, are as follows:

**Goal: To develop students' reading skills**

**Learning objectives:** students will be able to

- Identify the main and supporting ideas of texts;
- Analyze and evaluate reading material; make inferences; determine a writer's purpose; and apply reading strategies.
- Apply vocabulary-building strategies to improve their understanding of texts
- Locating referents

**Goal: To develop students' writing skills**

**Learning objectives:** students will be able to

- Focus on a purpose for writing

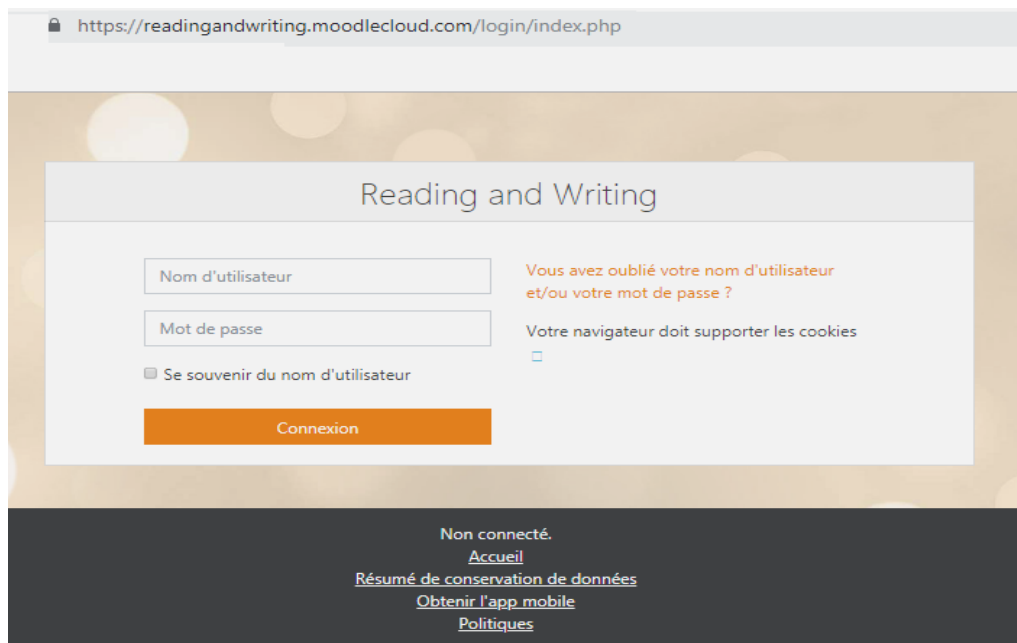
- Write well-structured sentences and paragraphs/ essays.
- Evaluate their own and others' writing

**Goal: To raise students' awareness of the reading and writing processes**

**Learning objectives:** students will be able to

- Make use of appropriate resources to support their academic reading and writing, including dictionaries, spelling, usage, grammar, style guides; and EFL resources;
- Approach a writing task as a process of planning, editing, and revising;
- Approach a reading task as a process of before, during and after reading.

After identifying the experimental subjects' characteristics, the subjects were given usernames and passwords in order to have access to the MOODLE Cloud platform. The image below shows the login page.

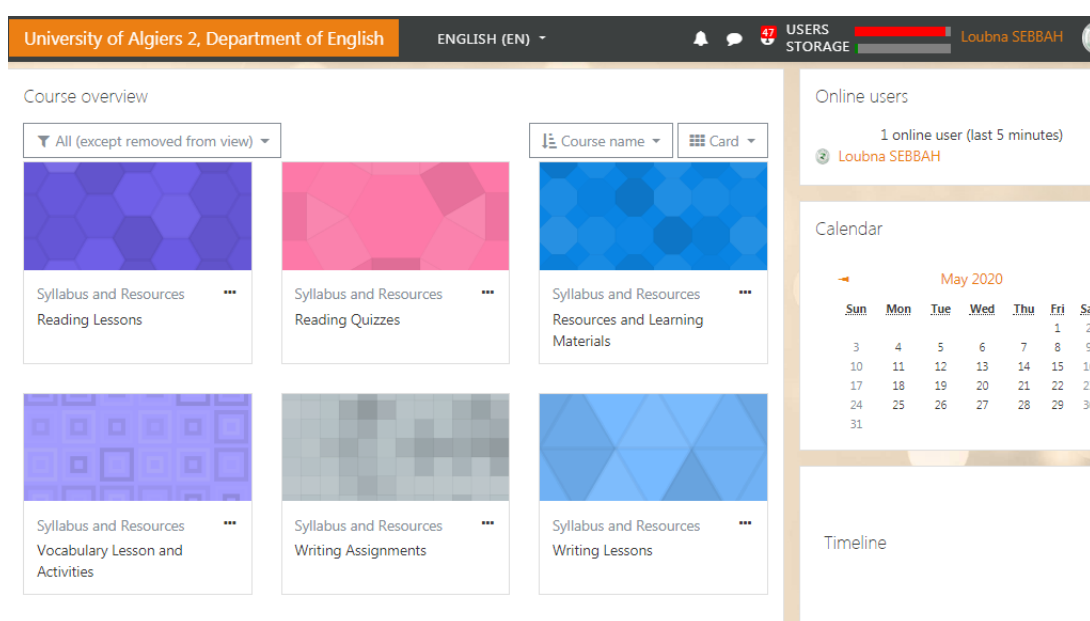


**Image 5.1. Login page**

- **Content page:**

The online learning platform contains four courses. The first MOODLE course is called resources and learning materials. It consists of instructions on how to use the platform and some enrichment learning resources that the experimental participants can refer to. The second course is about the reading

skill. It encompasses six lessons about introduction to academic reading, previewing, reading for details, reading for main ideas, reading for reference and vocabulary, reading for inference and summarizing. The third course is related to the writing skill; it involves seven lessons which cover introduction to academic writing, types of sentences, punctuation, essay organization, and patterns of organization (argumentative/opinion, compare/contrast, and cause/effect essays). The lessons are in the form of texts, videos, and PowerPoint presentations to help students revise and deepen their understanding of reading and writing lessons.



**Image 5.2. Content page**

- **Synchronous and Asynchronous tools:**

The asynchronous tools are meant to help students communicate at a time that suits them. For example, forums and email are used by the subjects to send their written productions or share their enquiries. However, the synchronous tools enable the students to communicate and send instant messages to their peers or the teacher when they log on to the same system.



**Image 5.3. Synchronous and Asynchronous Tools**

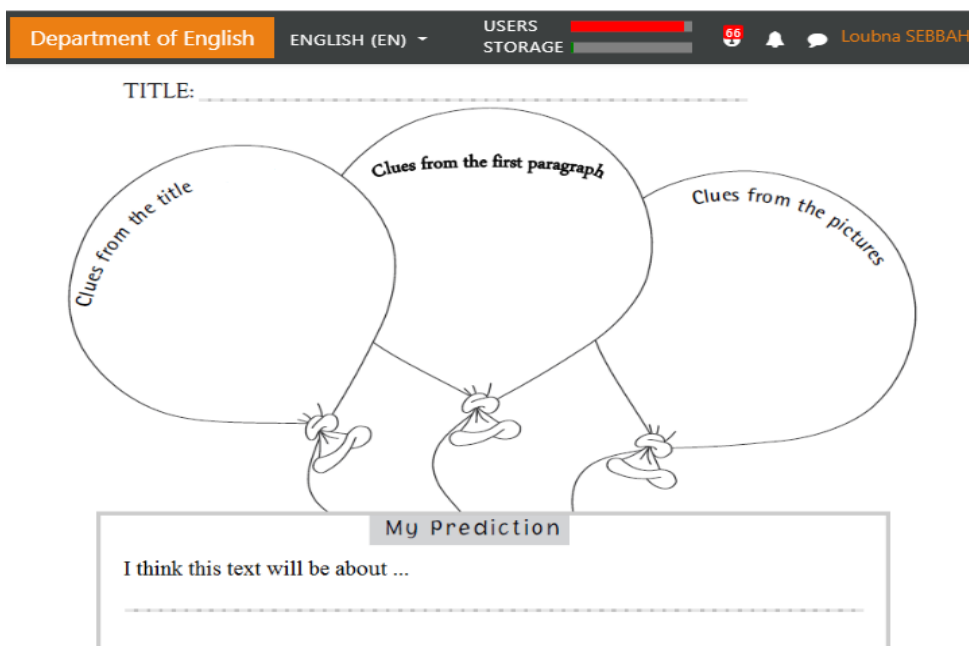
These communication tools enable the students to ask questions related to the lessons and allow them to reinforce their understanding or comprehension.

- **MOODLE tools:**

Varied tools are incorporated in the MOODLE platform. These consist of quizzes, chat, and lessons which involve PowerPoint presentations, images, diagrams, graphic organizers, and embedded videos.



**Image 5.4. Example of an embedded video into a writing lesson**



**Image 5.5. An embedded diagram into a reading lesson**

The next section presents the results of the reading and writing pretest.

### **5.1.2. Results of the reading and writing pretest:**

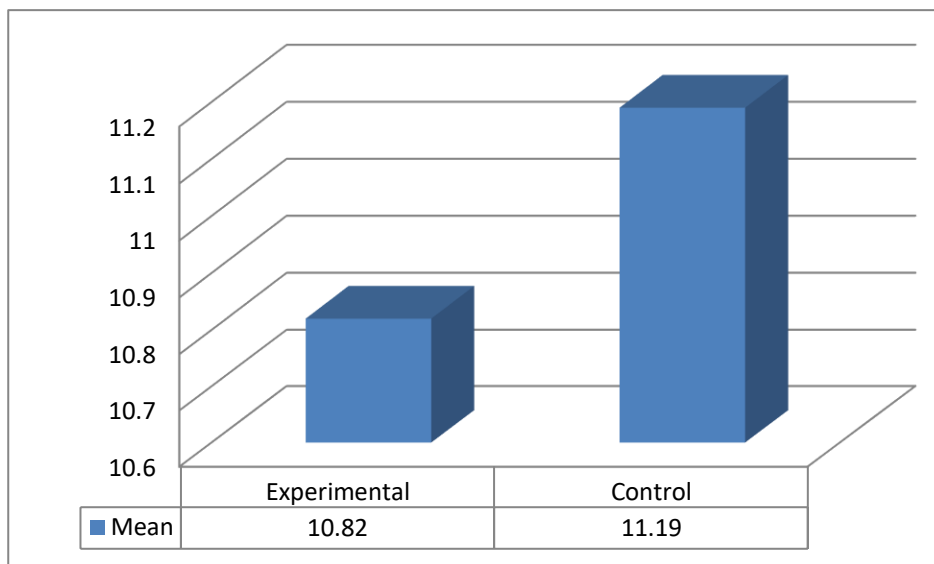
#### **5.1.2.1. Results of the reading pretest analysis:**

The reading and writing pretest was administered to the experimental and control subjects before the treatment phase to see whether both subjects have the same reading and writing level. The reading test was marked out of fifty points then it was converted to a scaled score of twenty points. Table 5.2 and diagram 5.12 below present the results of descriptive statistics regarding the pretest of reading administered to both experimental and control subjects.

<b>Group</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>
<b>EXP</b>	50	10,82	3,48
<b>CTR</b>	50	11,19	4,00

**N**= Number of the participants    **SD**= Standard deviation

**Table 5.2: Descriptive statistics of EXP and CTR reading means**



**Diagram 5.12: Mean scores of experimental and control groups in the reading pre-test**

Table 5.2 and diagram 5.12 demonstrate the mean scores of experimental and control subjects in the reading pretest. From table 5.2 and diagram 5.12 above, the mean of the control group is 11.19 with a standard deviation of 4, and the mean of the experimental group is 10.82 with a standard deviation of 3.48. Although there is a slight underachievement on the part of the experimental subjects, we can say that the analysis of scores shows an average level in the reading skill for both samples.

However, in order to see whether the difference in the mean scores of both groups is significant, it is crucial to conduct an independent samples t-test. The results of the independent samples t-test are illustrated in table 5.3 below:

Group	N	Mean	SD	T value	Df	Critical value	Decision
EXP	50	10.82	3.48	-0.66	98 (approx 100)	1.98 Alpha level= 0.05	Not significant
CTR	50	11.19	4.00				

N= Number of participants    SD= Standard deviation    Df= degree of freedom

**Table 5.3: Results of independent samples t-test of both groups in the reading pretest**

Table 5.3 compares the mean scores for both experimental and control subjects in the reading pre-test. As can be seen from table 5.3 above, the calculated t-value is -0.66, and it is lower than the critical value (1.98) at an alpha level of 0.05. Thus, the p-value is higher than the alpha level  $p > .05$ .

Moreover, to obtain more detailed results on the experimental and control subjects' reading skills, the results of the five reading skills (i.e. reading for main ideas (4 points), reading for details (17 points), reading for vocabulary (14 points), reading for referents (7 points) and reading for inference (8 points) for each group are analyzed and presented in table 5.4 below:

Reading Skills	Total Score/ 50	EXP Group		CTR Group	
		Mean	%	Mean	%
Reading for main ideas	4	2.68	67%	2.82	71%
Reading for details	17	8.8	52%	9.48	55%
Reading for vocabulary	14	8.06	57%	7.66	54%
Reading for referents	7	3.56	50%	3.82	54%
Reading for inference	8	3.92	49%	4.18	52%

**Table 5.4: Results of the reading skills of the experimental and control subjects in the pre-treatment phase**

Table 5.4 demonstrates the results related to the experimental and control subjects' reading skills in the pre-treatment phase. It can be seen from table 5.4 above that the results of the control subjects are slightly higher than those of the experimental subjects except for reading for vocabulary. The experimental subjects' percentage of reading for vocabulary is 57% while that of the control subjects is 54%.

The section below presents the results of the writing pretest administered to both experimental and control subjects.

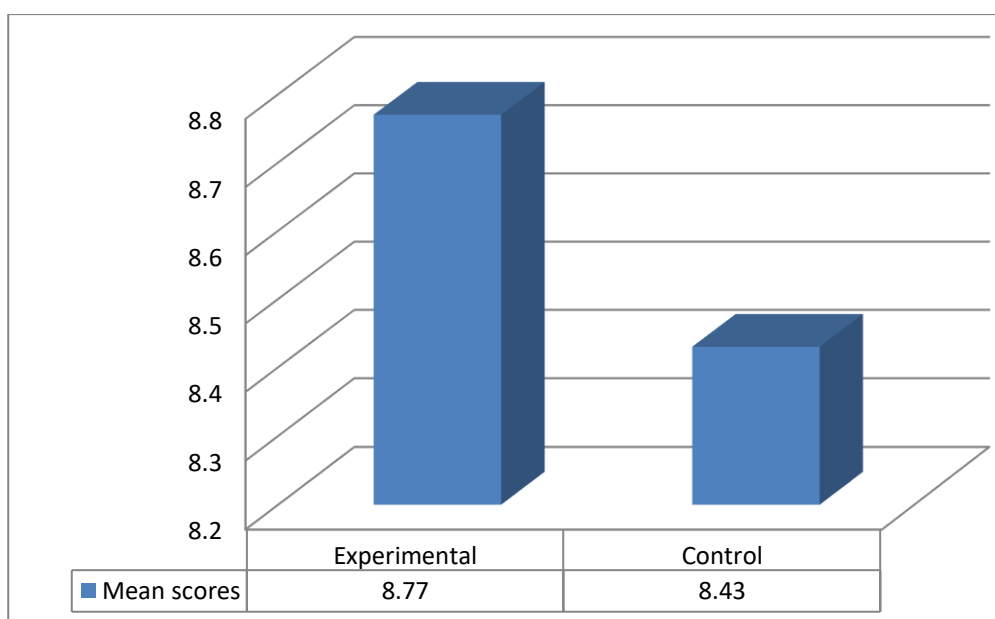
### 5.1.2.2. Results of the writing pretest analysis:

Descriptive and inferential statistics were adopted to analyze the results of the writing pre-test. The writing test was marked out of six points then it was converted to a scaled score of twenty points. Table 5.5 and diagram 5.13 below show the results of descriptive analysis of the writing pretest administered to both experimental and control subjects.

Group	N	Mean	SD
EXP	50	8.77	2.55
CTR	50	8.43	1.98

N= Number of participants    SD= standard deviation

**Table 5.5: Descriptive statistics of EXP and CTR writing means**



**Diagram 5.13: Mean scores of experimental and control groups in the writing pretest**

Table 5.5 and diagram 5.13 above present the mean score of the writing pretest for both experimental and control subjects. The mean score for the experimental group is 8.77 with a standard deviation of 2.55 and for the control group is 8.43 with a standard deviation of 1.98. It can be noticed that the results showed a below average level 10/20 in the writing skill for both samples. However, to see whether the difference in the mean scores for both groups is

significant, it is necessary to conduct an independent samples t-test. The findings of the independent samples t-test are presented in table 5.6 below:

Group	N	Mean	SD	T-test	Df	Critical value	Decision
EXP	50	8.77	2.55	0.85	98	1.98	Not significant
CTR	50	8.43	1.98		(approx 100)	Alpha= 0.05	

N= Number of participants      SD= Standard deviation      Df= degree of freedom

**Table 5.6: Results of independent samples t-test applied of both groups in the writing pretest**

Table 5.6 demonstrates the results of the independent samples t-test applied with experimental and control subjects in the writing pretest. From table 5.4 above, it can be seen that the calculated t-value is 0.85, and it is lower than the critical value 1.98 at an alpha level of 0.05. Hence, the p-value is higher than the alpha level  $p > .05$ .

Moreover, the writing skills (i.e. organizational, visual, grammatical and stylistic skills) for both experimental and control subjects are analyzed in detail through using frequency analysis and presented in table 5.7 and 5.8 below:

EXP subjects' Writing skills		Low		Needs improvement		Good		Very good	
		AF	%	AF	%	AF	%	AF	%
Organizational skills	Organization	26	56%	20	40%	4	8%	0	0%
	Coherence	28	56%	19	38%	3	6%	0	0%
	Using appropriate details	24	48%	22	44%	3	6%	1	2%
	Relevance to the topic	22	44%	23	46%	5	10%	0	0%
Visual skills	Punctuation	19	38%	27	54%	3	6%	1	2%
	Spelling	21	42%	25	50%	2	4%	2	4%
Grammar	Tenses	18	36%	27	54%	5	10%	0	0%

	Subject verb agreement	27	<b>54%</b>	19	<b>38%</b>	2	<b>4%</b>	2	<b>4%</b>
	Articles	8	<b>16%</b>	34	<b>68%</b>	6	<b>12%</b>	2	<b>4%</b>
<b>Stylistic skills</b>	Vocabulary	13	<b>26%</b>	29	<b>58%</b>	6	<b>12%</b>	2	<b>4%</b>
	Sentence structure	17	<b>34%</b>	28	<b>56%</b>	3	<b>6%</b>	2	<b>4%</b>

**AF**= Absolute frequency

**Table 5.7: Results of the experimental subjects' writing skills in the pre-treatment phase**

Table 5.7 shows the findings related to the experimental subjects' writing skills in the pre-treatment phase. Regarding organizational skills, the results presented in table 5.7 above indicate that 26 participants have low organizational skills, and 28 participants have low coherence in writing. Besides, the use of appropriate details is low for 24 participants, and 23 participants need to be relevant to the topic. With regard to visual skills, 27 participants need to improve their punctuation, and 25 participants need to ameliorate their spelling. Regarding grammatical skills, 27 participants need to improve their use of tenses and subject-verb agreement. However, 34 participants need to improve the use of correct articles. Moreover, the results related to stylistic skills demonstrate that 29 participants need to develop their vocabulary use, and 28 participants need to improve their sentence structure.

Table 5.8 below presents the results of the control subjects' writing skills.

<b>Writing skills CTR subjects</b>		<b>Low</b>		<b>Needs improvement</b>		<b>Good</b>		<b>Very good</b>	
		<b>AF</b>	<b>%</b>	<b>AF</b>	<b>%</b>	<b>AF</b>	<b>%</b>	<b>AF</b>	<b>%</b>
<b>Organizational skills</b>	Organization	13	<b>26%</b>	31	<b>62%</b>	6	<b>12%</b>	0	<b>0%</b>
	Coherence	9	<b>18%</b>	28	<b>56%</b>	13	<b>26%</b>	0	<b>0%</b>
	Using appropriate details	7	<b>14%</b>	31	<b>62%</b>	12	<b>24%</b>	0	<b>0%</b>

	Relevance to the topic	1	2%	27	54%	22	44%	0	0%
Visual skills	Punctuation	26	52%	23	46%	1	2%	0	0%
	Spelling	13	26%	34	68%	3	6%	0	0%
Grammatical skills	Tenses	9	18%	36	72%	5	10%	0	0%
	Subject verb agreement	27	54%	20	40%	2	4%	1	2%
	Articles	7	14%	35	70%	8	16%	0	0%
Stylistic skills	Vocabulary	8	16%	31	62%	11	22%	0	0%
	Sentence structure	7	14%	38	76%	5	10%	0	0%

**Table 5.8: Results of the control subjects' writing skills in the pre-testing phase**

Table 5.8 displays the results of the control subjects' writing skills in the pre-testing phase. The results presented in table 5.8 above show that 31 control participants need to improve their essay organization and ameliorate coherence. Moreover, 31 participants need to develop their use of appropriate details, and 27 students need to be relevant to the topic. When it comes to visual skills, the results displayed in table 5.8 above demonstrate that 26 participants' use of correct punctuation is low, and 34 participants need to improve their spelling. The results related to grammatical skills show that 36 control participants need to improve their use of tenses, and 27 control participants' use of subject-verb agreement is low. Besides, 35 control participants need to improve their use of correct articles. The findings related to stylistic skills indicate that 31 control participants need to improve their vocabulary, yet 38 participants need to develop their sentence structure.

The next section deals with the analysis of the second questionnaire administered to the experimental and control subjects.

### **5.1.3. Analysis of questionnaire 2: Experimental and control subjects' awareness of reading and writing processes**

The second questionnaire used in the present study is about students' awareness of the reading and writing processes. It aims at finding out whether the participants approach the writing and reading tasks as a process of pre reading/ writing stage, while reading/writing stage and post reading/writing stage and whether they apply the appropriate reading and writing strategies in each stage. The questionnaire was administered twice before and after the treatment phase to both experimental and control subjects to see whether there is any change that might occur in the participants' responses. The results related to section (a) (i.e. the writing process) of questionnaire 2 are presented in the section below:

#### **5.1.3.1. The writing process:**

**Instruction to students:** *Please read each statement and circle the number indicating how true of you the statement is: 1= Never true of me, 2=somewhat true of me, 3= usually true of me, 4= always true of me*

This section of questionnaire 2 aims at findings out the strategies that the experimental and control subjects employ before, during and after writing tasks. Scores were attributed to the participants' answers to the Likert scale questionnaire to ease the process of analysis and to render comparison possible between the two samples under study. Thus, a score was created for each participant through summing the values of each selected option. The results related to the pre-writing stage are presented in the section below.

- **Before I start writing an essay:**

Scores were attributed to the participants' responses to the Likert scale questionnaire. The referential score of pre-writing phase is from 0 to 20. The interval scores related to pre-writing phase for both experimental and control subjects are demonstrated in table 5.9 below:

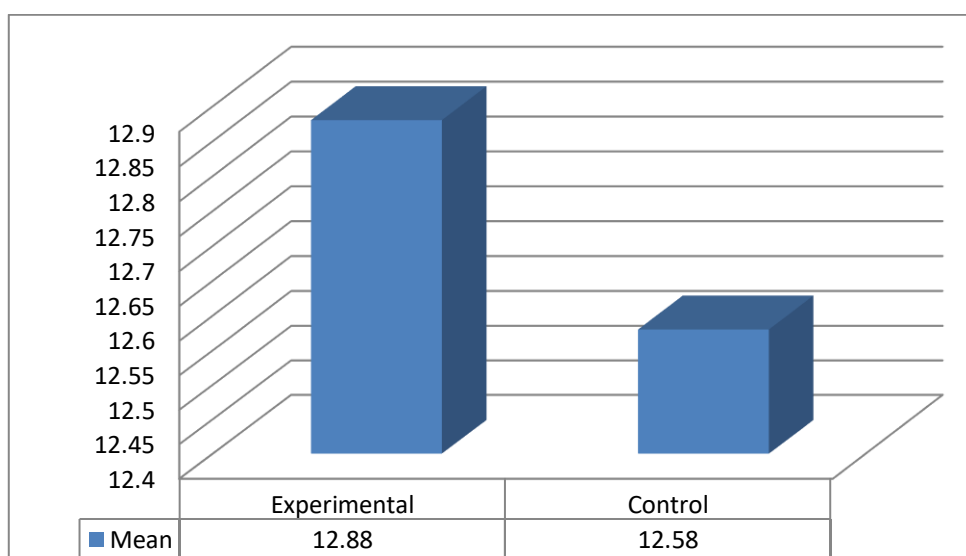
<b>Referential scores</b>	<b>From 0 to 20</b>
<b>Experimental subjects' interval score</b>	From 8 to 17
<b>Control subjects' interval score</b>	From 9 to 17

**Table 5.9: Statistical results related to pre-writing phase**

Table 5.9 presents the interval scores obtained by the experimental and control subjects in pre-writing phase. The experimental subjects' interval score varies from 8 to 17 points. And the control subjects' interval score ranges from 9 to 17 points. Moreover, the mean of the scores related to the participants' answers was calculated for each group in order to compare the results before starting the intervention. The results of the analysis are presented in table 5.10 and diagram 5.14 below:

	<b>Experimental group</b>	<b>Control group</b>
<b>Min and Max scores</b>	8-17/20= -0.45	9-17/20 =-0.4
<b>Mean= Sum of scores/ number of participants</b>	644/50 = 12.88	629/50 = 12.58
<b>Percentage= Mean/ Total score</b>	12.88/20 = 64.4%	12.58/20= 62.9%

**Table 5.10: Mean scores and percentage of pre-writing phase for EXP and CTR subjects**



**Diagram 5.14: Mean scores of pre-writing phase for EXP and CTR groups**

Table 5.10 and diagram 5.14 present the results of the mean scores of pre-writing phase for both experimental and control subjects. The results, as shown in table 5.10 and diagram 5.14 above, indicate that the mean score for the experimental subjects is 12.88, and the mean score for the control subjects is 12.58. The results of the mean scores of while-writing phase for both subjects are demonstrated in the section below.

- **While writing an essay:**

The referential score of while writing phase varies from 0 to 36. The interval scores of each group are displayed in table 5.11 below:

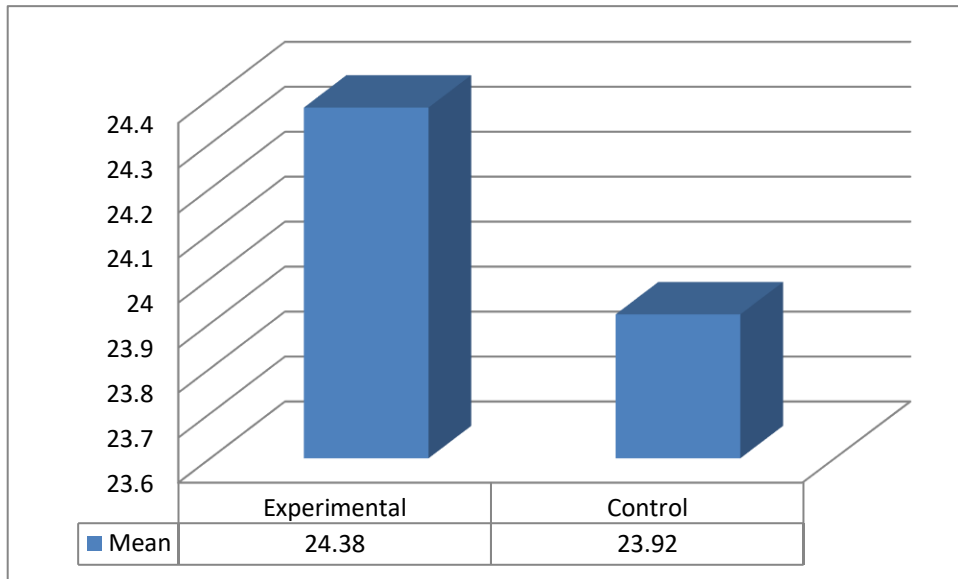
<b>Referential scores</b>	<b>From 0 to 36</b>
<b>Experimental subjects' interval score</b>	From 18 to 30
<b>Control subjects' interval score</b>	From 16 to 29

**Table 5.11: Statistical results related to while writing phase**

Table 5.11 displays the interval scores obtained by the experimental and control subjects in while writing phase. The experimental subjects' scores vary from 18 to 30. The scores of the control group range from 16 to 29. The mean of the scores of the participants' answers in while writing phase is calculated for each group in order to be able to compare the results before and after the intervention. The findings are displayed in 5.12 table and diagram 5.15 below:

	<b>Experimental group</b>	<b>Control group</b>
<b>Min and Max scores</b>	18-30/36 = -0.33	16-29/36 = -0.36
<b>Mean= Sum of scores/ number of participants</b>	1219/50 = 24.38	1196/50 = 23.92
<b>Percentage= Mean/ Highest score</b>	24.38/36= 67.7%	23.92/36= 66.4%

**Table 5.12: Mean scores and percentage of while writing phase for EXP and CTR subjects**



**Diagram 5.15: Mean scores of prewriting phase for EXP and CTR subjects**

Table 5.12 and diagram 5.15 present the results of the mean scores of the while writing phase for both the experimental and control subjects. From table 5.12 and diagram 5.15 above, it can be seen that the mean score for the experimental subjects is 24.38, and the mean score for the control subjects is 23.92. The results related to the post writing phase are displayed in the next section.

- **When revising:**

The referential score of post writing phase ranges from 0 to 48. The interval scores for both experimental and control subjects are presented in table 5.13 below:

<b>Referential scores</b>	<b>From 0 to 48</b>
<b>Experimental subjects' interval score</b>	From 19 to 38
<b>Control subjects' interval score</b>	From 18 to 37

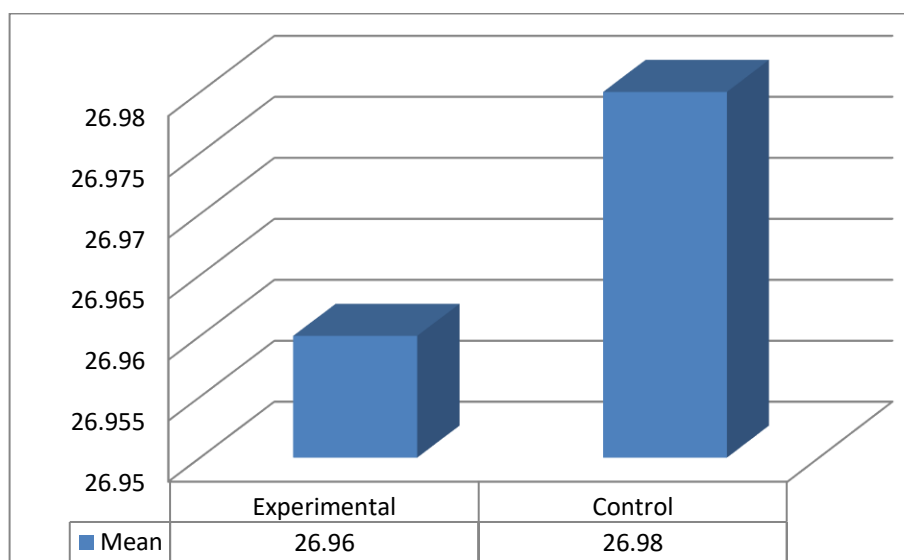
**Table 5.13: Statistical results related to post-writing phase**

Table 5.13 presents the statistical results related to post-writing phase. The interval score of the experimental group varies from 19 to 38 and that of the control group varies from 18 to 37. Furthermore, the mean of the scores related

to the participants' answers in the post writing phase was calculated for each group. The results are presented in table 5.14 and diagram 5.16 below:

	Experimental group	Control group
<b>Min and Max scores</b>	19-38/48 = -0.39	18-37/48 = -0.39
<b>Mean= Sum of scores/ number of participants</b>	1348/50 = 26.96	1349/50 =26.98
<b>Percentage= Mean/ Total score</b>	26.96/48= 56.1%	26.98/48= 56.2%

**Table 5.14: Mean scores of post writing phase for the experimental and control groups**



**Diagram 5.16: Mean scores of EXP and CTR groups**

Table 5.14 and diagram 5.16 show the mean scores of the while writing phase for the experimental and control subjects. From the results illustrated in table 5.14 and diagram 5.16 above, it can be noticed that the mean score for experimental group is 26.96, and that of the control group is 26.98. The next section presents the results of the reading process for both experimental and control subjects.

### 5.1.3.2. The reading process:

**Instruction to students:** *Think about what strategies you rely on to help you understand a reading text better before, during and after you read it. Read each of the lists of four statements and decide which one of them would help you the most. It is just what you think would help the most. Circle the letter of the statement you choose.*

This question sought to identify the experimental and control subjects' awareness of the reading process and evaluate their awareness of the need to match strategies to the appropriate reading phase (before, during and after reading). The results related to the pre-reading phase are displayed in the section below.

- **Before reading a text:**

The pre-reading phase focuses on five strategies namely predicting and verifying (2points), previewing (2 points), purpose setting (2 points), self questioning (1point), and drawing from background knowledge (3points). The pre-reading phase was marked out of 10 points. The scores for each group are presented in table 5.15 below:

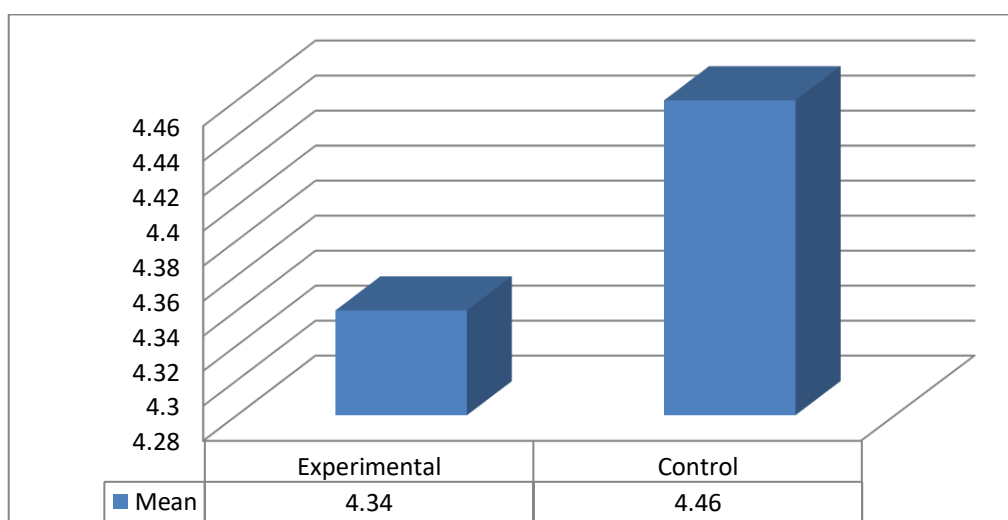
<b>Referential Scores</b>	<b>From 0 to 10</b>
<b>Experimental subjects' interval score</b>	From 1 to 8
<b>Control subjects' interval score</b>	From 0 to 8

**Table 5.15: scores related to pre-reading phase**

Besides, the mean of the scores related to the participants' answers in the pre-reading phase was computed for each group. The results are shown in table 5.16 and diagram 5.17 below:

	Experimental group	Control group
<b>Min and Max scores</b>	1-8/8= -0.87	0-8/8= 0
<b>Mean= Sum of scores/ number of participants</b>	217/50 = 4.34	223/50 = 4.46
<b>Percentage= Mean/ Total score</b>	4.34/10= 43.4%	4.46/10= 44.6%

**Table 5.16: Mean scores of the pre-reading phase for experimental and control subjects**



**Diagram 5.17: Mean score of the pre-reading phase**

Table 5.16 and diagram 5.17 present the findings of the pre-reading phase for the experimental and control subjects. It is apparent from table 5.16 and diagram 5.17 above that the mean score for the experimental group is 4.34, and the mean score for the control group is 4.46.

Moreover, the mean score for each reading strategy was calculated for both groups. The results are presented in table 5.17 below:

Group	Predicting and verifying		Previewing		Purpose setting		Self questioning		Drawing from background knowledge	
	M	%	M	%	M	%	M	%	M	%
<b>EXP</b>	1.18	59%	1.36	68%	0.6	30%	0.28	28%	0.92	31%
<b>CTR</b>	1.26	63%	1.44	48%	0.52	26%	0.34	34%	0.90	30%

M= Mean

**Table 5.17: Mean score and percentage of the strategies applied by EXP and CTR subjects in the pre-reading phase**

Table 5.17 demonstrates the results of the mean score and percentage of the reading strategies applied by both groups in the pre-reading phase. It can be seen from the data presented in table 5.17 above that the percentage of purpose setting for the experimental subjects is 30% and for the control subjects is 26%. The percentage of self questioning for the experimental subjects is 28% and for the control subjects is 34%. For the experimental subjects, the percentage of drawing from background knowledge is 31% and for the control subjects is 30%. The results of while-reading phase are presented in the next section.

- **While-reading phase:**

This phase involves questions about predicting and verifying (4 points), self questioning (2 points), drawing from background knowledge (1 point) and applying fix up strategies and summarizing (3points). The while-reading phase is marked out of 10 points. The score of the while-reading phase for the experimental and control subjects are displayed in table 5.18 below:

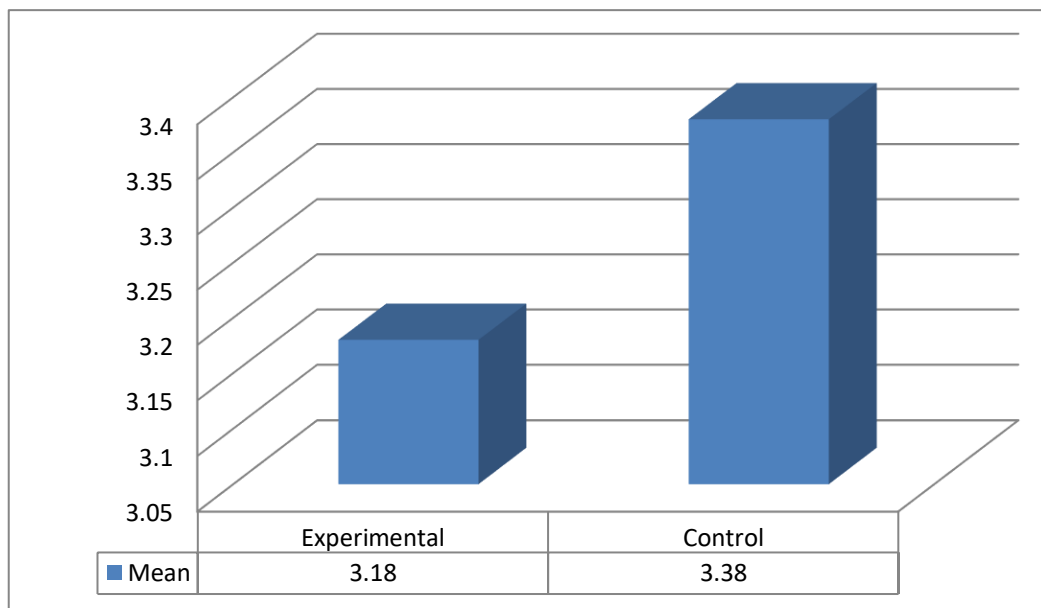
<b>Referential Scores</b>	<b>From 0 to 10</b>
<b>Experimental subjects' interval score</b>	From 1 to 7
<b>Control subjects' interval score</b>	From 0 to 7

**Table 5.18: Scores related to while reading phase**

Furthermore, the mean scores of the experimental and control subjects' answers of the while reading phase was calculated for each group. Table 5.19 and diagram 5.18 below demonstrate the results obtained from the analysis:

	<b>Experimental group</b>	<b>Control group</b>
<b>Min and Max scores</b>	1-7/10= -0.6	0-7/10= -0.7
<b>Mean= Sum of scores/ number of participants</b>	159/50 = 3.18	169/50 = 3.38
<b>Percentage= Mean/ Total score</b>	3.18/10= 31.8%	3.38/10= 33.8%

**Table 5.19: Mean scores of while reading phase for EXP and CTR subjects**



**Diagram 5.18: Mean scores of while reading phase for EXP and CTR groups**

Table 5.19 and diagram 5.18 show the results of the mean score of the while-reading phase for the experimental and control subjects. The data presented in table 5.19 and diagram 5.18 above reveal that the mean score for the experimental group is 3.18, and the mean score for the control group is 3.38. Descriptively, this denotes that the mean of the experimental group is slightly lower than the mean of the control group in while reading phase.

Besides, the mean score of the reading strategies applied by both experimental and control subjects in while reading phase was calculated for both groups under study. Table 5.20 below displays the findings obtained from the analysis:

Group	Predicting and verifying		Self questioning		Drawing from background knowledge		Summarizing and applying fix up strategies	
	M	%	M	%	M	%	M	%
EXP	1.4	35%	0.9	45%	0.28	28%	0.64	21%
CTR	1.2	30%	1.04	52%	0.32	32%	0.82	27%

**Table 5.20: Mean and percentage of the strategies applied by the EXP and CTR subjects in while reading phase**

Table 5.20 shows the mean score and percentage of the reading strategies applied by the experimental and control subjects in while reading phase. It is apparent from the data presented in table 5.20 above that the percentage of predicting and verifying for the experimental subjects is 35% and for the control subjects is 30%. The percentage of self questioning for the experimental subjects is 45% and for the control subjects is 52%. For the experimental subjects, the percentage of drawing from background knowledge is 28%, and for the control subjects is 32%. Besides, the percentage of summarizing and applying fix-up strategies for the experimental subjects is 21%, and for the control subjects is 27%. The findings related to post reading phase are displayed in the next section.

- **Post reading phase:**

The post reading stage encompasses five questions about predicting and verifying (1 point), purpose setting (1point), drawing from background knowledge (2 points), and applying fix up strategies and summarizing (1 point). The post-reading phase is marked out of 5 points. The scores obtained by the experimental and control subjects are displayed in table 5.21 below.

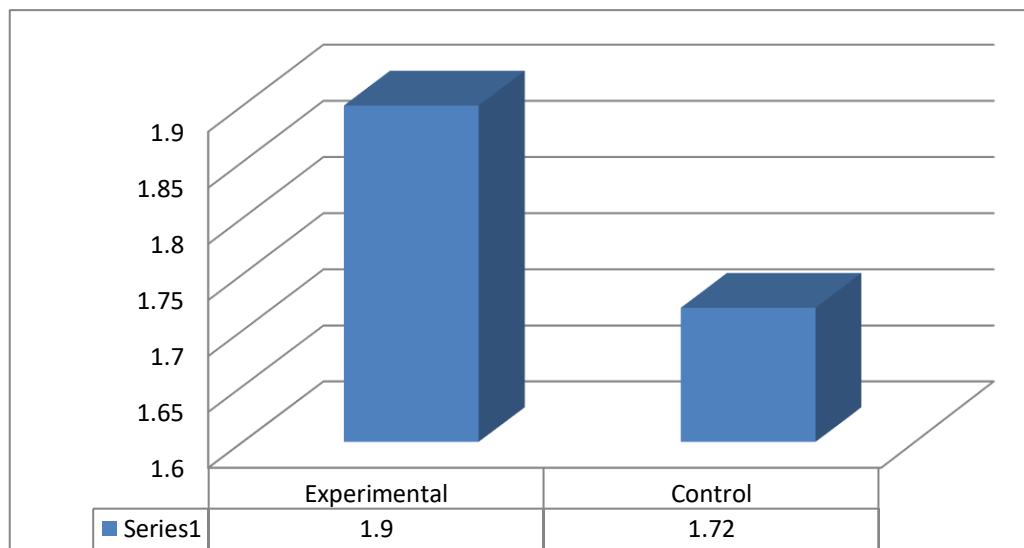
<b>Referential Scores</b>	<b>From 0 to 5</b>
<b>Experimental subjects' interval score</b>	From 0 to 4
<b>Control subjects' interval score</b>	From 0 to 5

**Table 5.21: Scores related to post reading phase**

Moreover, the mean score related to the experimental and control subjects' responses in the post reading phase was calculated. Table 5.22 and diagram 5.23 below present the results of the analysis:

	<b>Experimental group</b>	<b>Control group</b>
<b>Min and Max scores</b>	0-4/5= -0.8	0-5/5= -1
<b>Mean= Sum of scores/ number of participants</b>	95/50 = 1.9	86/50 = 1.72
<b>Percentage= Mean/ Total score</b>	1.9/5= 38%	1.72/5= 34.4%

**Table 5.22: Mean scores of post reading phase for EXP and CTR subjects**



**Diagram 5.19: Mean scores of post reading phase**

Table 5.22 and diagram 5.19 demonstrate the results of the mean score of post-reading phase for both experimental and control subjects. The findings presented in table 5.22 and diagram 5.19 above show that the mean score of the post reading phase for the experimental group is 1.9, and the mean score for the control group is 1.72.

Furthermore, the mean of each reading strategy in post-reading phase was calculated for both samples under study. The results are presented in table 5.23 below:

Group	Predicting and verifying		Purpose setting		Drawing from background knowledge		Summarizing and applying fix up strategies	
	M	%	M	%	M	%	M	%
EXP	0.42	42%	0.52	52%	0.6	30%	0.36	36%
CTR	0.36	36%	0.44	44%	0.62	31%	0.32	32%

**Table 5.23: Mean and percentage of the strategies applied by EXP and CTR subjects in post reading phase**

Table 5.23 indicates the mean and percentage of the strategies applied in post reading phase. In both groups, the results displayed in table 5.23 above show that the percentage of purpose setting for both control and experimental participants is higher than the percentages of drawing from background

knowledge, summarizing and applying fix-up strategies and predicting and verifying. The section below deals with presentation of results regarding the post-treatment phase.

## **5.2. Results of the post-treatment phase to experimental and control subjects:**

The post treatment phase seeks to analyze and compare the data obtained from the research instruments after implementing the treatment with the experimental subjects. The research instruments that were used in the post-treatment phase involve: a reading and writing posttest, a questionnaire about awareness of reading and writing processes, a perceptual questionnaire and a focus group interview. The next section deals with the presentation of the reading and writing posttest results.

### **5.2.1. Analysis of the reading and writing post-test:**

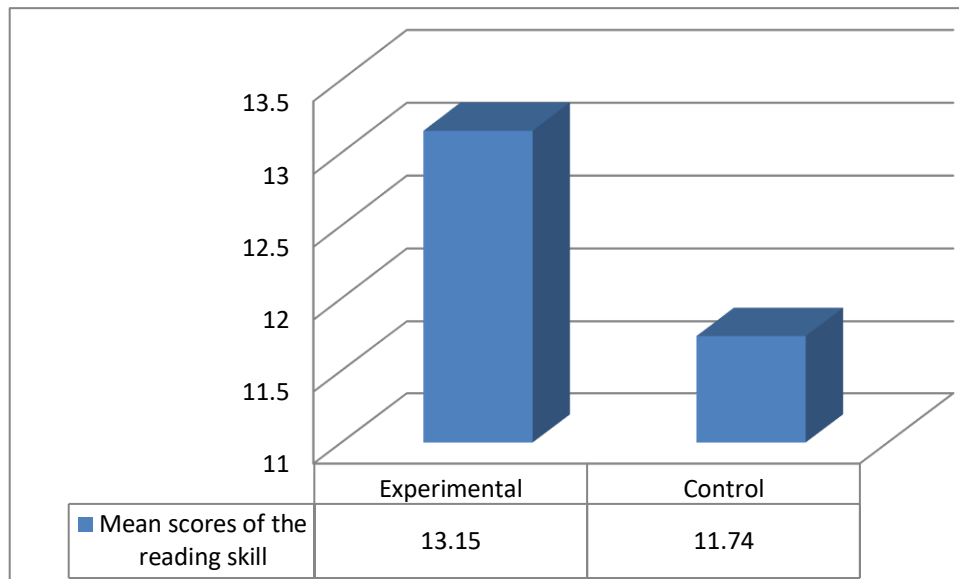
#### **5.2.1.1. Analysis of the reading posttest administered to experimental and control subjects:**

The reading posttest was first analyzed descriptively then inferentially. Thus, the means and standard deviations for both groups in addition to the t-test were calculated. The results of descriptive analysis are presented in table 5.24 and diagram 5.20 below:

<b>Group</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>
<b>EXP</b>	50	13.15	2.66
<b>CTR</b>	50	11.74	3.19

**N**= number of participants    **SD**= Standard Deviation

**Table 5.24: Descriptive statistics of EXP and CTR subjects reading mean scores in the post treatment phase**



**Diagram 5.20: Mean scores of EXP and CTR subjects in the reading posttest**

Table 5.24 and diagram 5.20 present the findings of the mean scores of both experimental and control subjects in the reading posttest. From table 5.24 and diagram 5.20 above, it can be seen that the mean of posttest scores for the experimental group is 13.15 with a standard deviation of 2.66, and the mean for the control group is 11.74 with a standard deviation of 3.19.

However, in order to see whether the difference in the mean scores of both groups is statistically significant, an independent samples t-test and paired samples t-test were computed. The independent samples t-test helps in comparing the means for both groups; however, the paired sample t-test aids to evaluate the effect of the intervention or traditional method on the participants' achievement within the same group. The results of independent samples t-test applied with experimental and control subjects are presented in table 5.25 below:

Group	N	Mean	SD	T value	Df	Critical value	Decision
EXP	50	13.15	2.66	2.43	98	1.98 at alpha =0.05	Significant
CTR	50	11.74	3.19				

**Table 5.25: Independent samples t-test of the reading posttest applied with EXP and CTR subjects**

Table 5.25 presents the results of independent samples t-test applied with experimental and control subjects in the reading posttest. The findings in table 5.25 above indicate that the calculated t-value 2.43 is higher than the critical value 1.98 at an alpha level 0.05.

Besides, a paired-samples t-test was conducted to evaluate the effect of collaborative blended learning intervention on the experimental subjects reading comprehension test score. The results of paired samples t-test applied with the experimental subjects are displayed in table 5.26 below:

<b>EXP</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Df</b>	<b>T value</b>	<b>Critical Value</b>	<b>Decision</b>
<b>Pretest</b>	50	10.82	2.69	50-1=49	(-)6.29	2 at alpha = =0.05	Significant
<b>Posttest</b>		13.15					

N= number of participants SD= standard deviation Df= Degree of freedom

**Table 5.26: Paired t-test statistic of reading test for EXP subjects**

Table 5.26 shows the findings of the paired sample t-test of the reading test for experimental subjects. As can be seen in table 5.26 above, the results reveal that the t-value is 6.29 with significance test p-value sig. (2-tailed) = 2.00. That is p-value is less than the alpha level 0.05.

The findings of paired samples t-test applied with control subjects are presented in table 5.27 below:

<b>CTR</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>DF</b>	<b>T value</b>	<b>Critical value</b>	<b>Decision</b>
<b>Pretest</b>	50	11.19	1.80	50-1=49	(-)2.34	2 at alpha = 0.05	Significant
<b>Posttest</b>		11.74					

N= number of participants SD= standard deviation Df= Degree of freedom

**Table 5.27: Paired t-test statistic of reading test for CTR subjects**

Table 5.27 demonstrates the findings of paired t-test of reading test for control subjects. The results presented in table 5.27 above indicate that the t-value is 2.34 with significance test p-value sig. (2-tailed) = 2.00. Hence, p-value is lower than the alpha level 0.05.

Furthermore, the findings of the reading skills (i.e. reading for main ideas, details, vocabulary, reference and inference) for both experimental and control subjects are analyzed and presented in table 5.28 below:

Reading Skill	Total Score/ 50	EXP group		CTR group	
		Mean	%	Mean	%
Reading for main ideas	4	3.08	<b>77%</b>	2.86	<b>72%</b>
Reading for details	17	10.16	<b>59%</b>	9.84	<b>58%</b>
Reading for vocabulary	14	10.32	<b>73%</b>	7.32	<b>52%</b>
Reading for reference	7	4.82	<b>69%</b>	5.04	<b>72%</b>
Reading for inference	8	4.52	<b>57%</b>	4.94	<b>62%</b>

**Table 5.28: The mean and percentage of EXP and CTR subjects' reading skills in the post-treatment phase**

Table 5.28 shows the mean score and percentage of experimental and control subjects' reading skills in the post treatment phase. As can be seen in table 5.28 above, reading for main ideas, details and vocabulary are higher for the experimental group than the control subjects. However, reading for reference and inference are higher for the control subjects than the experimental subjects. The results of the change in mean score for the experimental subjects' reading skills are analyzed and presented in table 5.29 below.

EXP Subjects	Before		After		Absolute Change	
	M1	%	M2	%	M2-M1	%
Reading skills						
Reading for main ideas	2.68	<b>67%</b>	3.08	<b>77%</b>	<b>+0.4</b>	<b>+10%</b>
Reading for details	8.8	<b>52%</b>	10.16	<b>59%</b>	<b>+1.36</b>	<b>+7%</b>
Reading for vocabulary	8.06	<b>58%</b>	10.32	<b>73%</b>	<b>+2.26</b>	<b>+15%</b>
Reading for reference	3.56	<b>51%</b>	4.82	<b>69%</b>	<b>+1.26</b>	<b>+18%</b>
Reading for inference	3.92	<b>49%</b>	4.52	<b>57%</b>	<b>+0.6</b>	<b>+8%</b>

CTR Subjects	Before		After		Absolute Change	
	M1	%	M2	%	M2-M1	%
Reading skills	2.82	71%	2.86	72%	+0.04	+1%
Reading for main ideas	9.48	56%	9.84	58%	+0.36	+2%
Reading for details	7.66	55%	7.32	52%	-0.34	-3%
Reading for vocabulary	3.82	55%	5.04	72%	+1.22	+17%
Reading for reference	4.18	52%	4.94	62%	+0.76	+10%

**Table 5.29: Absolute change in mean score and percentage of EXP and CTR subjects' reading skills.**

Table 5.29 above shows the absolute change in mean score and percentage of experimental subjects' reading skills. The results displayed in table 5.29 above reveal that the change in mean score for reading for main ideas is +10% while for reading for details is +7%. Besides, reading for vocabulary mean score is improved with a change of +15% and reading for reference with a change of +18%. The mean change for reading for inference is +8%. Besides, concerning the control subjects, the findings mentioned in table 5.29 above show that the change in mean score for reading for main ideas is +1% and for reading for details is +2%. The mean change for reading for reference is +17% and for reading for inference is +10%. However, there is a decline in the mean score of reading for vocabulary (-3%). The next section deals with the analysis of the writing posttest administered to experimental and control subjects.

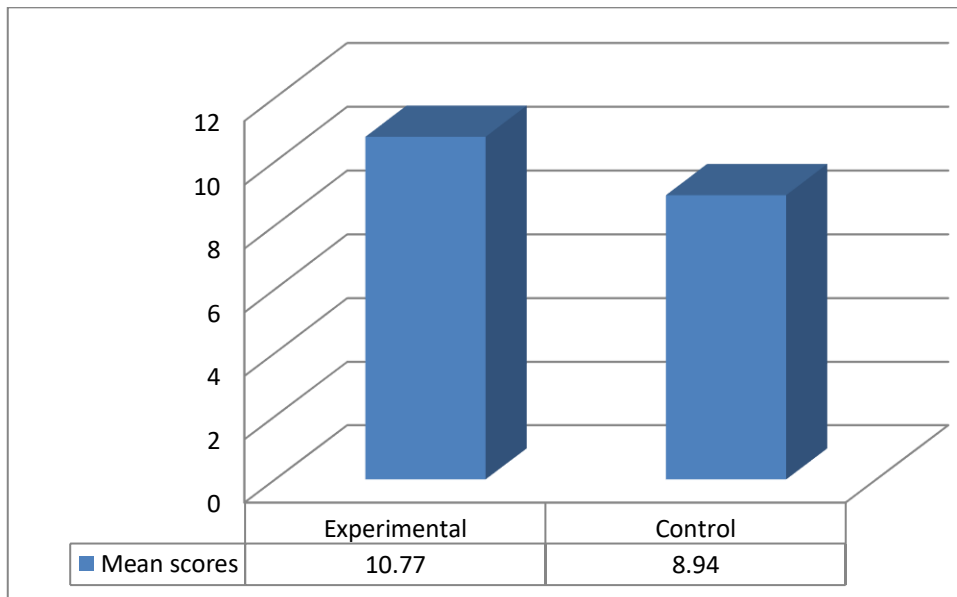
#### **5.2.1.2. Results of the writing posttest administered to experimental and control subjects:**

The writing posttest was administered to the experimental and control subjects after the testing phase. To analyze the results of the writing posttest, Descriptive and inferential statistics are used. To see whether there was a significant difference in the mean scores of the experimental and control subjects, an independent samples t-test is calculated in addition to a paired sample t-test to evaluate the effect of the intervention (i.e. CBL) on the

experimental subjects writing test score. The results of descriptive analysis are demonstrated in table 5.30 and diagram 5.21 below:

<b>Group</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>
<b>EXP</b>	50	10.77	2.81
<b>CTR</b>	50	8.94	3.11

**Table 5.30: Mean scores for EXP and CTR in the writing posttest**



**Diagram 5.21: Mean scores for EXP and CTR in the writing posttest**

Table 5.30 and diagram 5.21 present the results of the mean scores for experimental and control subjects in the writing posttest. From the data presented in table 5.30 and diagram 5.21 above, it can be seen that the mean for the experimental subjects is 10.77 with a standard deviation of 2.81, and the mean for the control subjects is 8.94 with a standard deviation of 3.11.

In order to compare the means for experimental subjects and control subjects in the writing posttest, an independent samples t-test is calculated. Table 5.31 below demonstrates the findings of the independent samples t-test applied with the experimental and control subjects:

Group	N	Mean	SD	T-test	Df	Critical value	Decision
EXP	50	10.77	2.94	3.15	98	1.98 at Alpha= 0.05	Significant
CTR	50	8.94	3.11				

**Table 5.31: Independent samples t-test of EXP and CTR in the writing posttest**

Table 5.31 shows the results of the independent samples t-test for experimental and control subjects in the writing posttest. The results in table 5.31 above show that the calculated t-value 3.15 is higher than the critical value 1.98 at an alpha level 0.05.

Moreover, a paired sample t-test was conducted with the experimental group. Table 5.32 below shows the results of the paired sample t-test applied with the experimental subjects:

EXP	N	Mean	SD	t-test	Df	Critical value	Decision
Pretest	50	8.77	3.14	7.65	49	2 at alpha= 0.05	Significant
Posttest		10.77	2.94				

N= number of participants SD= standard deviation Df= Degree of freedom

**Table 5.32: paired sample t-test of writing test for EXP subjects**

Table 5.32 presents the findings of the paired sample t-test applied with the experimental subjects. The results in table 5.32 above indicate that the t-value is 7.65 with the significance test p-value sig. (2-tailed) = 2.00. Therefore, the p-value is lower than the alpha level 0.05.

Moreover, paired-samples t-test is applied with control subjects. The results of paired sample t-test analysis are displayed in table 5.33 below:

CTR	N	Mean	SD	T test	Df	Critical value	Decision
Pre test	50	8.43	1.98	1.47	49	2 at Alpha= 0.05	Not significant
Post test		8.94	3.11				

N= number of participants SD= Standard deviation Df= Degree of freedom

**Table 5.33: Paired sample t-test of writing test for CTR subjects**

Table 5.33 presents the results of paired sample t-test for control subjects in the writing test. As can be seen from table 5.33 above, the results demonstrate that the t-value is 1.47 with significance test p-value sig. (2-tailed) = 2.00. Thus, the p-value is higher than the alpha level 0.05.

Moreover, the results of the rubric analysis regarding experimental subjects' writing skills are presented in table 5.34 below:

Writing skills		Low		Needs improvement		Good		Very good	
		AF	%	AF	%	AF	%	AF	%
Organizational skills	Organization	0	0%	10	20%	33	66%	7	14%
	Coherence	11	22%	16	32%	17	34%	6	12%
	Using appropriate details	14	28%	19	38%	13	26%	4	8%
	Relevance to the topic	13	26%	22	44%	10	20%	5	10%
Visual skills	Punctuation	9	18%	22	44%	16	32%	3	6%
	Spelling	12	24%	12	24%	19	38%	7	14%
Grammatical skills	Use of Tenses	5	10%	22	44%	12	24%	11	22%
	Subject verb agreement	18	20%	21	36%	5	30%	6	14%
	Articles	2	4%	20	38%	19	18%	9	18%
Stylistic skills	Vocabulary	4	8%	12	24%	18	36%	16	32%
	Sentence structure	6	12%	18	36%	19	38%	7	14%

**Table 5.34: Results of the EXP subjects' writing skills in the post-treatment phase**

Table 5.34 presents the results of experimental subjects' writing skills in the post-treatment phase. As shown in table 5.34 above, the results related to organizational skills reveal that 33 experimental participants are good at essay organization, and 17 participants achieve good coherence. Moreover, 13

experimental participants write good supporting details, and the essays of 10 participants are relevant to the topic. Regarding visual skills, the results, presented in table 5.34 above, show that 16 participants are good at punctuation, and 19 participants are good at spelling. The findings related to grammatical skills reveal that 12 participants' use of tenses is good, and 21 participants' use of subject-verb agreement needs improvement. Besides, 19 participants are good at employing correct articles. The findings related to stylistic skills show that 18 participants display good command of vocabulary, and 19 participants are good at sentence structure. The results related to the control subjects' writing skills are displayed in table 5.35 below.

Writing skills		Low		Needs improvement		Good		Very good	
		AF	%	AF	%	AF	%	AF	%
<b>CTR subjects</b>									
Organizational skills	Organization	11	22%	24	48%	12	24%	3	6%
	Coherence	7	14%	31	62%	8	16%	4	8%
	Using appropriate details	4	8%	27	54%	14	28%	5	10%
	Relevance to the topic	9	18%	19	38%	19	38%	3	6%
Visual skills	Punctuation	16	32%	25	50%	6	12%	3	6%
	Spelling	15	30%	19	38%	15	30%	1	2%
Grammatical skills	Tenses	29	58%	16	32%	4	8%	1	2%
	Subject verb agreement	14	28%	26	52%	6	12%	4	8%
	Articles	10	20%	35	70%	8	27%	0	0%
Stylistic skills	Vocabulary	9	18%	30	60%	9	18%	2	4%
	Sentence structure	17	34%	15	30%	13	26%	5	10%

**Table 5.35: Results of the CTR subjects' writing skills in the post-testing phase**

Table 5.35 presents the results of the control subjects' writing skills in the post-testing phase. The results displayed in table 5.35 above indicate that 12

control participants are good at essay organization, but 31 participants need to improve coherence. Besides, 14 participants are good at using appropriate details, and the essays of 19 control participants show good relevance to the topic. Regarding visual skills, the findings mentioned in table 5.35 above show that 6 participants' use of correct punctuation is good, and 15 participants are good at spelling. The results related to grammatical skills reveal that 4 control participants are good at employing correct tenses, and 6 control participants' use of subject-verb agreement is good. Besides, 8 control participants are good at employing correct definite and indefinite articles. The results related to stylistic skills indicate that 9 participants are good at employing varied vocabulary, and 13 participants structure good sentences. The next section deals with the analysis of the second research tool used for the present study.

### **5.2.2. Analysis of questionnaire 2: experimental and control subjects' reading and writing processes**

This questionnaire aims at investigating the students' awareness of reading and writing processes. It was administered before and after the intervention to both samples. The questionnaire traces the change that might occur in the participants' answers regarding the employment of strategies before, during and after reading and writing tasks. The next section presents the analysis of the experimental and control subjects' writing process.

#### **5.2.2.1. Analysis of experimental and control subjects' writing process:**

**Instruction to students:** *Please read each statement and circle the number indicating how true of you the statement is (1= never true of me, 2= somewhat true of me, 3= usually true of me, 4= always true of me)*

This section seeks to find out the strategies that students employ before, during and after writing tasks. The answers were attributed scores in order to compare the results between the two samples under study after the treatment phase.

- **Before I start writing an essay in English:**

Referential scores related to experimental and control subjects' answers regarding pre-writing phase in before and after the testing phase are displayed in table 5.36 below:

	<b>Before</b>	<b>After</b>
<b>Referential scores</b>	<b>From 0 to 20</b>	
<b>EXP subjects' interval score</b>	From 8 to 17	From 10 to 18
<b>CTR subjects' interval score</b>	From 9 to 17	From 10 to 17

**Table 5.36: Scores related to pre-writing phase**

The results presented in table 5.36 seem worth further investigation to establish comparison between the two groups and to see the change that occurred before and after the treatment. Hence, the mean of the scores related to the experimental and control subjects' answers was calculated. Table 5.37 below shows the results of descriptive analysis applied with experimental and control subjects.

<b>Experimental subjects</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	<b>8-17/20 = -0.45</b>	<b>10-18= -8</b>
<b>Mean= Sum of scores/ number of participants</b>	644/50 = <b>12.88</b>	690/50= <b>13.8</b>
<b>Percentage= Mean/ Total score</b>	12.88/20 = <b>64.4%</b>	13.8/20= <b>69%</b>
<b>Absolute change: Mean 2 – Mean 1</b>	13.8-12.88= <b>+0.92 (+5%)</b>	

<b>Control subjects</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	<b>9-17 = -8</b>	<b>10-17= -7</b>
<b>Mean= Sum of scores/ number of participants</b>	629/50 = <b>12.58</b>	663/50= <b>13.26</b>
<b>Percentage= Mean/ Total score</b>	12.58/20= <b>62.9%</b>	13.26/20= <b>66%</b>
<b>Absolute change: Mean 2 – Mean 1</b>	13.26-12.58= <b>+0.68 (+3%)</b>	

**Table 5.37: Absolute change in mean scores and percentage of pre-writing phase for EXP and CTR subjects**

Table 5.37 is about the change in mean scores and percentage of pre-writing phase for the experimental and control subjects. For the experimental subjects, it can be noticed from the results displayed in table 5.37 above that the mean score of the pre-writing phase in the pre- treatment phase is 12.88 with a percentage of 64.4%. And the mean score of the pre-writing phase after the treatment phase is 13.8 with a percentage of 69%. The change in mean score is +5%. Regarding the control subjects, it is apparent that the mean score of pre-writing phase for the control group before the testing phase is 12.58 with a percentage of 62.9%. Yet, the mean score of the pre-writing phase after the testing phase is 13.26 with a percentage of 66%. The control group enhanced with a change of +3% in pre-writing phase. The next section deals with presentation of results related to while writing phase.

- **While writing:**

Referential scores related to experimental and control subjects’ answers regarding while writing phase in before and after the treatment are presented in table 5.38 below:

	Before	After
<b>Referential scores</b>	<b>From 0 to 36</b>	
<b>EXP subjects’ interval score</b>	From 18 to 30	From 21 to 33
<b>CTR subjects’ interval score</b>	From 16 to 29	From 18 to 29

**Table 5.38: scores related to while-writing phase**

Table 5.38 presents the referential scores related to while-writing phase for experimental and control subjects. From the results displayed in table 5.38, it can be seen that both experimental and control subjects’ scores improved. Moreover, the mean of the scores related to the experimental and control subjects’ answers in while writing phase was calculated to compare the results before and after the intervention, thereby measuring the change that may occur

before and after using CBL with the experimental subjects. The findings of descriptive analysis applied with experimental and control subjects are demonstrated in table 5.39 below:

<b>Experimental group</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	18-30/36 = <b>-0.33</b>	21-33/36 = <b>-0.33</b>
<b>Mean= Sum of scores/ number of participants</b>	1219/50 = <b>24.38</b>	1325/50 = <b>26.5</b>
<b>Percentage= Mean/ Total score</b>	24.38/36= <b>68%</b>	26.5/36= <b>74%</b>
<b>Absolute Change: Mean 2 – Mean 1</b>	26.5-24.38= <b>+2.12 (+6%)</b>	
<b>Control group</b>		
<b>Control group</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	16-29/36 = <b>-0.36</b>	18-29/36 = <b>-0.30</b>
<b>Mean= Sum of scores/ number of participants</b>	1196/50= <b>23.92</b>	1217/50= <b>24.34</b>
<b>Percentage= Mean/ Total score</b>	23.92/36= <b>66%</b>	24.34/36= <b>68%</b>
<b>Absolute Change: Mean 2 – Mean 1</b>	24.34-23.92= <b>+0.42 (+2%)</b>	

**Table 5.39: Absolute change in mean scores and percentage of while writing phase for EXP and CTR subjects**

Table 5.39 shows the absolute change in mean scores and percentage of while writing phase for the experimental and control subjects. Concerning the experimental subjects, the findings presented in table 5.39, it can be noticed that the mean of while writing phase for the experimental subjects before the treatment is 24.38 and after the treatment is 26.5 with a change of +6%. As regards the control subjects, it can be seen that the mean of while-writing phase for the control subjects in the pre-treatment phase is 23.92 and after the treatment is 24.34. The results also reveal that the mean change is +2%. The next section presents the results of the post writing phase “when revising” for both experimental and control subjects.

- **When revising:**

Experimental and control subjects' referential scores are presented in table 5.40 below:

	<b>Before</b>	<b>After</b>
<b>Referential scores</b>	<b>From 0 to 48</b>	
<b>EXP subjects' interval score</b>	From 19 to 38	From 25 to 39
<b>CTR subjects' interval score</b>	From 18 to 37	From 21 to 32

**Table 5.40: scores related to post-writing phase**

Table 5.40 demonstrates the scores related to post-writing phase for both experimental and control subjects. The findings, which are displayed in table 5.40 above, show that the experimental subjects' scores improved as compared to the control subjects'.

Further, the mean of the scores related to the experimental and control subjects' answers in post-writing phase was calculated. The results of descriptive analysis are shown in the table 5.41 below:

<b>Experimental subjects</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	19-38/48= <b>-0.39</b>	25-39/48 = <b>-0.29</b>
<b>Mean= Sum of scores/ number of participants</b>	1348/50 = <b>26.96</b>	1601/50= <b>32.05</b>
<b>Percentage= Mean/ Total score</b>	26.96/48= <b>56%</b>	32.05/48= <b>68%</b>
<b>Absolute change: Mean 2 – Mean 1</b>	32.05-26.96= <b>+5.09 (+12%)</b>	
<b>Control subjects</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	18-37/48= <b>-0.39</b>	21-32/48= <b>-0.22</b>
<b>Mean= Sum of scores/ number of scores</b>	1349/50 = <b>26.98</b>	1350/50= <b>27</b>
<b>Percentage= Mean/ Total score</b>	26.98/48= <b>56.2%</b>	27/48= <b>56.2%</b>
<b>Absolute change: Mean 2 – Mean 1</b>	27-26.98= <b>+0.02 (0%)</b>	

**Table 5.41: Absolute change in mean scores and percentage of post writing phase for EXP and CTR subjects**

Table 5.41 presents the results related to the change in mean scores and percentage regarding post-writing phase for experimental and control subjects. The findings indicate that before the treatment phase the mean score for experimental subjects is 26.96 and it is 32.05 after the treatment. The findings also indicate that the change in mean is +12%. With regard to the control subjects, it can be observed from the data presented in table 5.41 that there is no change 0% in control subjects' answers.

The next section deals with the analysis of the results of the experimental and control subjects' reading process.

#### **5.2.2.2. Analysis of experimental and control subjects' reading process:**

**Instruction to students:** *Think about what strategies you rely on to help you understand a reading text better before, during and after you read it. Read each of the lists of four statements and decide which one of them would help you the most. It is just what you think would help the most. Circle the letter of the statement you choose.*

This section of questionnaire 2 aims at identifying experimental and control subjects' awareness of the reading process after the testing phase. It is meant to trace any change that may occur in the subjects' responses through comparing the subjects' answers before and after the testing phase. Besides, it seeks to evaluate their awareness of the need to match strategies to the appropriate reading phase (before, during and after reading). The results of pre-reading phase are demonstrated in the section below.

- **Before I start reading a text:**

The results of experimental and control subjects' scores regarding pre-reading phase are highlighted in table 5.42 below:

	Before	After
<b>Referential Scores</b>	<b>From 0 to 10</b>	
<b>EXP subjects' interval score</b>	From 1 to 8	From 4 to 8
<b>CTR subjects' interval score</b>	From 0 to 8	From 1 to 7

**Table 5.42: Scores related to pre-reading phase**

Moreover, the mean scores, related to the experimental and control subjects, is calculated for each group in order to compare the results before and after the intervention. The results of descriptive analysis of pre-reading phase are displayed in table 5.43 below:

<b>Experimental subjects</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	1-8/10= -0.7	4-8/10= -0.4
<b>Mean= Sum of scores/ number of participants</b>	217/50= <b>4.34</b>	293/50= <b>5.86</b>
<b>Percentage= Mean/ Total score</b>	4.34/10= <b>43%</b>	5.86/10= <b>58%</b>
<b>Absolute Change= Mean 2 – Mean 1</b>	5.86-4.34= <b>+1.52 (15%)</b>	
<b>Control subjects</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	0-8/10= <b>-0.8</b>	1-7/10= <b>-0.6</b>
<b>Mean= Sum of scores/ number of participants</b>	223/50= <b>4.46</b>	213/50= <b>4.26</b>
<b>Percentage= Mean/ Total score</b>	4.46/10= <b>44.6%</b>	4.26/10= <b>43%</b>
<b>Absolute Change= Mean 2 – Mean 1</b>	4.26-4.46= <b>-0.2 (-1.6%)</b>	

**Table 5.43: Absolute change in mean scores and percentage of pre- reading phase for EXP and CTR subjects**

Table 5.43 shows the results of the absolute change in mean scores and percentage of pre-reading phase for experimental and control subjects. As shown in table 5.43 above, the experimental subjects' mean scores increased from mean (before) 4.34 to mean (after) 5.86 with a change of 15%. Moreover, it can be seen that the mean score for the control subjects in the pre-testing phase is 4.46.

In the post testing phase, the mean score of pre-reading phase is 4.26. Thus, the absolute change in mean scores for the control subjects is -1.6%.

Moreover, the mean score for each reading strategy is calculated for both experimental and control subjects to see whether there is a change in the subjects' mean scores before and after the testing phase. The results are displayed in table 5.44 and 5.45 below.

- **Experimental subjects:**

EXP	Predicting and verifying		Previewing		Purpose setting		Self questioning		Drawing from background knowledge	
	M	%	M	%	M	%	M	%	M	%
<b>Before</b>	1.18	59%	1.36	68%	0.6	30%	0.28	28%	0.92	31%
<b>After</b>	1.50	75%	1.46	73%	0.9	45%	0.6	60%	1.4	47%
<b>Change</b>	+0.32 (+16%)		+0.1 (+5%)		+0.3(+15%)		+0.32(+32%)		+0.48 (+16%)	

**Table 5.44: Absolute change in mean scores and percentage of the strategies used in pre-reading phase by EXP subjects**

Table 5.44 shows the change in mean scores and percentage of the strategies used in pre-reading phase by experimental subjects. The findings presented in table 5.44 reveal that there is an increase in self questioning (+32%), predicting and verifying (+16%), drawing from background knowledge (+16%), purpose setting (+15%), and previewing (+5%). Table 5.45 below presents the results related to the control subjects.

- **Control subjects:**

CTR	Predicting and verifying		Previewing		Purpose setting		Self questioning		Drawing from background knowledge	
	M	%	M	%	M	%	M	%	M	%
<b>Before</b>	1.26	63%	1.44	60%	0.52	26%	0.34	34%	0.9	30%

<b>After</b>	1.06	53%	1.2%	48%	0.72	36%	0.44	44%	0.84	28%
<b>Change</b>	<b>-0.2 (-10%)</b>		<b>-0.24 (-12%)</b>		<b>+0.2 (+10%)</b>		<b>+0.1(+10%)</b>		<b>-0.06 (-2%)</b>	

**Table 5.45: Change in mean scores and percentage related to strategies used in pre-reading phase by CTR subjects**

Table 5.45 presents the results of the change in control subjects' mean scores and percentage of the pre-reading strategies used in before and after the testing phase. It is apparent from table 5.45 that there is a decline in predicting and verifying (-10%), previewing (-12%) and drawing from background knowledge (-2%). However, there is a slight improvement regarding purpose setting (+10%) and self questioning (+10%). The next section deals with the analysis of the findings of the strategies applied by both experimental and control subjects in while reading phase. The findings related to while-reading phase are presented in the next section.

- **While reading a text:**

Table 5.46 below shows experimental and control subjects' scores related to the strategies applied in while reading phase:

	<b>Before</b>	<b>After</b>
<b>Referential Scores</b>	<b>From 0 to 10</b>	
<b>EXP subjects' interval score</b>	From 1 to 7	From 4 to 8
<b>CTR subjects' interval score</b>	From 0 to 7	From 2 to 6

**Table 5.46: Scores related to while reading phase**

As shown in table 5.46, the answers of the experimental subjects exhibit a remarkable progress in while-reading phase as compared to the control group participants' answers.

Furthermore, the mean of the scores of the experimental and control subjects' answers in while reading phase is calculated for each group, and the results are demonstrated in table 5.47 below.

<b>Experimental subjects</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	1-7/10= -0.6	4-8/10= -0.4
<b>Mean= Sum of scores/ number of participants</b>	159/50= <b>3.18</b>	304/50= <b>6.08</b>
<b>Percentage= Mean/ Total score</b>	3.18/10= <b>32%</b>	6.08/10= <b>61%</b>
<b>Absolute Change= Mean 2 – Mean 1</b>	6.08-3.18= <b>+2.9 (+29%)</b>	
<b>Control subjects</b>		
<b>Min and Max scores</b>	0-7/10= -0.7	2-6/10= -0.4
<b>Mean= Sum of scores/ number of participants</b>	169/50= <b>3.38</b>	210/50= <b>4.2</b>
<b>Percentage= Mean/ Highest score</b>	3.38/10= <b>34%</b>	4.2/10= <b>42%</b>
<b>Absolute change= Mean 2 – Mean 1</b>	4.2-3.38= <b>+0.82 (+8%)</b>	

**Table 5.47: Absolute change in mean scores and percentage of while-reading phase for EXP subjects**

Table 5.47 highlights the absolute change in mean scores and percentage of while reading phase for experimental subjects. The findings shown in table 5.47 above indicate that the mean score for the experimental group before the intervention is 3.18 and after the intervention is 6.08 with a change of +29%. Besides, the findings demonstrated in table 5.46 above show that the mean score for control subjects before the intervention is 3.38 and it is 4.2 after the intervention. The absolute change in mean scores before and after the testing phase is +8%.

Moreover, the mean for each reading strategy applied in wile reading phase was calculated for both experimental and control subjects. The results are presented in table 5.48 and table 5.49 below:

- **Experimental group:**

EXP group	Predicting and verifying		Self questioning		Drawing from background knowledge		Summarizing and applying fix up strategies	
	M	%	M	%	M	%	M	%
<b>Before</b>	1.4	35%	0.9	45%	0.28	28%	0.64	21%
<b>After</b>	2.18	55%	1.38	69%	0.88	88%	1.64	55%
<b>Change</b>	<b>+0.78 (+20%)</b>		<b>+0.48 (+24%)</b>		<b>+0.6 (+60%)</b>		<b>+1 (+34%)</b>	

**Table 5.48: Absolute change in EXP participants' answers related to the strategies applied in while reading phase**

Table 5.48 presents the findings of the absolute change in experimental subjects' responses related to the while reading strategies. The results, as shown in table 5.48 above, show that the reading strategies that are improved by experimental subjects include predicting and verifying (+20%), self questioning (+24%), drawing from background knowledge (+60%), and summarizing and applying fix up strategies (+34%).

- **Control group:**

CTR group	Predicting and verifying		Self questioning		Drawing from background knowledge		Summarizing and applying fix up strategies	
	M	%	M	%	M	%	M	%
<b>Before</b>	1.2	30%	1.04	52%	0.32	32%	0.82	27%
<b>After</b>	1.42	36%	1.24	62%	0.58	58%	0.96	32%
<b>Change</b>	<b>+0.22 (+6)</b>		<b>+0.2 (+10%)</b>		<b>+0.26 (+26%)</b>		<b>+0.14 (+5%)</b>	

**Table 5.49: Change in CTR participants' mean scores of the strategies applied in while reading phase**

Table 5.49 displays the results related to the change in control subjects' mean scores of the strategies used in while reading phase. The findings presented in table 5.48 above reveal that the strategies that are used and improved by the control subjects are predicting and verifying (+6%), self questioning (+10%),

drawing from background knowledge (+26%), and summarizing and applying fix up strategies (+5%). The next section deals with the analysis of the control and experimental subjects' answers in post reading phase.

- **After reading a text:**

The post-reading phase involves five questions about predicting and verifying, purpose setting, drawing from background knowledge, and summarizing and applying fix-up strategies and summarizing. The results of experimental and control subjects' referential scores are presented in table 5.50 below:

	<b>Before</b>	<b>After</b>
<b>Scores</b>	<b>From 0 to 5</b>	
<b>EXP subjects' interval score</b>	From 0 to 4	From 1 to 5
<b>CTR subjects' interval score</b>	From 0 to 5	From 1 to 4

**Table 5.50: Scores related to post reading phase**

As presented in table 5.50, the experimental subjects' answers show a progress in post-reading phase as compared to the control subjects' answers.

Besides, the mean of the scores of the experimental and control subjects' answers in post reading phase is computed. Table 5.51 below displays the findings obtained from the analysis of the second questionnaire:

<b>Experimental group</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	0-4/5= -0.8	1-5/5= -0.8
<b>Mean= Sum of scores/ number of participants</b>	95/50= <b>1.9</b>	168/50= <b>3.36</b>
<b>Percentage= Mean/ Total score</b>	1.9/5= <b>38%</b>	3.36/5= <b>67%</b>
<b>Absolute Change= Mean 2 – Mean 1</b>	3.36-1.9= <b>+1.46 (+29%)</b>	
<b>Control group</b>	<b>Before</b>	<b>After</b>
<b>Min and Max scores</b>	0-5/5= -5	1-5/5= -4

<b>Mean= Sum of scores/ number of participants</b>	86/50= <b>1.72</b>	107/50= <b>2.14</b>
<b>Percentage= Mean/ Total score</b>	1.72/5= <b>34.4%</b>	2.14/5= <b>43%</b>
<b>Absolute Change= Mean 2 – Mean 1</b>	2.14-1.72= <b>+0.42 (+9%)</b>	

**Table 5.51: Absolute change in mean scores and percentage of post reading phase for EXP and CTR subjects**

Table 5.51 demonstrates the absolute change in mean and percentage of post reading phase for experimental subjects. The findings presented in table 5.51 above reveal that the mean for experimental and control subjects before the intervention is 1.9 and after the intervention is 3.36. The change in mean scores is +29%. The mean for control subjects in pre-testing phase is 1.72, and the mean in post-testing is 2.14 with a mean change of +9%.

Moreover, the mean and percentage of each reading strategy are calculated for both experimental and control subjects. The results of the analysis are displayed in table 5.52 and table 5.53 below:

- **Experimental subjects:**

<b>EXP</b>	<b>Predicting and verifying</b>		<b>Purpose setting</b>		<b>Drawing from background knowledge</b>		<b>Summarizing and applying fix up strategies</b>	
	<b>M</b>	<b>%</b>	<b>M</b>	<b>%</b>	<b>M</b>	<b>%</b>	<b>M</b>	<b>%</b>
<b>Before</b>	0.42	42%	0.52	52%	0.6	30%	0.36	36%
<b>After</b>	0.64	64%	0.76	76%	1.12	56%	0.84	84%
<b>Change</b>	<b>+0.22 (+22%)</b>		<b>+0.24 (+24%)</b>		<b>+0.52 (+26%)</b>		<b>+0.48 (+48%)</b>	

**Table 5.52: Absolute change in EXP subjects' answers related to the strategies applied after reading**

Table 5.52 presents the change in experimental subjects' answers regarding the strategies applied in post-reading phase. The results shown in table 5.52 above indicate that the strategies that are applied and improved by experimental subjects are summarizing and applying fix up strategies (+48%),

drawing from background knowledge (+26%), purpose setting (+24%) and predicting and verifying (+22%).

- **Control subjects:**

CTR	Predicting and verifying		Purpose setting		Drawing from background knowledge		Summarizing and applying fix up strategies	
	M	%	M	%	M	%	M	%
Before	0.36	36%	0.44	44%	0.62	31%	0.32	32%
	0.44	44%	0.52	52%	0.72	36%	0.46	46%
Change	+0.08 (+8%)		+0.08 (+8%)		+0.1 (+5%)		+0.14 (+14%)	

**Table 5.53: Absolute change in CTR subjects' answers related to the strategies applied after reading**

Table 5.53 shows the change in control subjects' answers regarding the strategies applied in post reading phase. The findings presented in table 5.53 above reveal that the reading strategies that are used and upgraded by the control subjects involve summarizing and applying fix up strategies (+14%), purpose setting (+8%), predicting and verifying (+8%), and drawing from background knowledge (+5%).

The analysis of the questionnaire that focuses on experimental subjects' perceptions of using CBL to develop their literacy skills is presented in the section below.

### **5.2.3. Analysis of experimental subjects' perceptions of using CBL to develop their literacy skills:**

This questionnaire was adapted from Chang and Fisher's (2003) perceptual questionnaire and aims at finding out students' perceptions of using blended learning. The questionnaire consists of four scales namely access, interaction, response and results. Each scale has 8 items, and each item has a five

point Likert format: almost always (5), often (4), sometimes (3), seldom (2), and almost never (1).

**Instruction to students:** *This part seeks to find out your perceptions in using online and collaborative learning. Please read each statement and circle the appropriate choice: Almost always=5, often=4, sometimes=3, seldom=2, almost never=1.*

The perceptual questionnaire was administered at the end of the treatment to the experimental subjects only in order to explore their perceptions of using collaborative blended learning to develop their literacy skills. Frequency analysis is used to analyze the perceptual questionnaire through converting the data into percentages. The results of the first scale of questionnaire 3 are presented in the section below.

- **Scale 1: Access**

The first scale is called “Access”; it aims at determining the convenience of accessing the online learning platform in terms of flexibility and autonomy. The results of the analysis are displayed in table 5.54 below:

N	Items	Almost always (%)		Often (%)		Sometimes (%)		Seldom (%)		Almost never (%)	
		AF	%	AF	%	AF	%	AF	%	AF	%
1	I can access the learning activities at times convenient to me.	15	<b>30%</b>	16	<b>32%</b>	16	<b>32%</b>	2	<b>4%</b>	1	<b>2%</b>
2	The online learning materials are available at locations suitable for me.	17	<b>34%</b>	17	<b>34%</b>	12	<b>24%</b>	1	<b>2%</b>	3	<b>6%</b>
3	I can use time saved in travelling and on campus class attendance for study and other commitments.	6	<b>12%</b>	12	<b>24%</b>	24	<b>48%</b>	6	<b>12%</b>	6	<b>4%</b>

4	I can study at my own pace.	11	<b>22</b> %	19	<b>38</b> %	11	<b>22</b> %	5	<b>10</b> %	4	<b>8%</b>
5	I decide how much I want to learn in a given period.	10	<b>20</b> %	16	<b>32</b> %	14	<b>28</b> %	9	<b>18</b> %	1	<b>2%</b>
6	I decide when I want to learn.	18	<b>36</b> %	13	<b>26</b> %	14	<b>28</b> %	4	<b>8%</b>	1	<b>2%</b>
7	The flexibility allows me to meet my learning goals.	16	<b>32</b> %	24	<b>48</b> %	10	<b>20</b> %	0	<b>0%</b>	0	<b>0%</b>
8	The flexibility allows me to explore my own areas of interest.	17	<b>34</b> %	24	<b>48</b> %	8	<b>16</b> %	1	<b>2%</b>	0	<b>0%</b>

**AF**= Absolute frequency

**Table 5.54: Results related to experimental subjects' perceptions of Access scale**

Table 5.54 presents the experimental subjects' perceptions of "Access". From the findings presented in table 5.54 above, it is apparent that the experimental subjects' answers related to the first item range between always (30%) and sometimes (32%) regarding accessing the learning activities at convenient times, and only (4%) report that they seldom have access to the learning materials at convenient times. Moreover, 34% of the experimental subjects claim that they almost always use time saved for studying through using the online platform. The participants are often allowed to study at their own pace (38%) and decide how much they learn in a given period (32%), and about half of them (48%) report that flexibility allows them to meet their learning goals and can explore their own areas of interest. Furthermore, 36% of the experimental subjects always decide when they want to learn. The results of the second scale are displayed in the next section.

- **Scale 2: Interaction**

This scale contains statements about flexibility, reflection, interaction, quality, feedback and collaboration. The results of analysis are displayed in table 5.55 below:

N	Items	Almost always (%)		Often (%)		Sometimes (%)		Seldom (%)		Almost never (%)	
		AF	%	AF	%	AF	%	AF	%	AF	%
9	I communicate with my peers in this subject by using email, forum, and chat.	28	<b>56%</b>	3	<b>6%</b>	12	<b>24%</b>	2	<b>4%</b>	5	<b>10%</b>
10	In this learning environment, I have to be self-disciplined in order to learn successfully.	31	<b>62%</b>	9	<b>18%</b>	3	<b>6%</b>	5	<b>10%</b>	2	<b>4%</b>
11	I can contact and ask my teacher to re-explain what I do not understand.	23	<b>46%</b>	13	<b>26%</b>	13	<b>26%</b>	1	<b>2%</b>	0	<b>0%</b>
12	I can ask my classmates what I do not understand.	21	<b>42%</b>	16	<b>32%</b>	11	<b>22%</b>	1	<b>2%</b>	1	<b>2%</b>
13	Other students respond promptly to my questions.	8	<b>16%</b>	20	<b>40%</b>	13	<b>26%</b>	7	<b>14%</b>	2	<b>4%</b>
14	I regularly participate in self-evaluations.	12	<b>24%</b>	20	<b>40%</b>	15	<b>30%</b>	2	<b>4%</b>	1	<b>2%</b>
15	I regularly participate in peer evaluation.	15	<b>30%</b>	16	<b>32%</b>	11	<b>22%</b>	6	<b>12%</b>	2	<b>4%</b>
16	My classmates supported and encouraged me to learn.	22	<b>44%</b>	15	<b>30%</b>	9	<b>18%</b>	4	<b>8%</b>	0	<b>0%</b>

**Table 5.55: Results related to experimental subjects' perceptions of interaction scale**

Table 5.55 displays the experimental subjects' perceptions of interaction scale. The findings presented in table 5.55 above indicate that the majority of the experimental subjects almost always (56%) communicate with their peers through using asynchronous and synchronous tools. 62% of the experimental subjects respond that they often feel that they must be self-disciplined when

engaged in online learning environment. The subjects also report that they often ask the teacher (46%) and their classmates (46%) to re-explain what they did not understand. Moreover, the experimental subjects claim that they sometimes (40%) receive prompt answers from their peers, and participate in self-evaluations (40%) and peer evaluation (32%). Besides, 44% of the participants maintain that they are always supported and encouraged to learn. Findings of the third scale are analyzed and displayed in the next section.

- **Scale 3: Response**

This scale focuses on the experimental subjects' satisfaction, confidence, achievement, success, frustration and tedium. The results of this scale are demonstrated in table 5.56 below:

N	Items	Almost always (%)		Often (%)		Sometime s (%)		Seldom (%)		Almost never (%)	
		AF	%	AF	%	AF	%	AF	%	AF	%
17	Collaborative blended learning enables me to interact with my peers and the teacher using e-mail or instant messaging.	AF	%	AF	%	AF	%	AF	%	AF	%
		21	<b>42%</b>	16	<b>32%</b>	11	<b>22%</b>	2	<b>4%</b>	0	<b>0%</b>
18	I felt a sense of satisfaction and achievement about this blended learning environment.	29	<b>58%</b>	14	<b>28%</b>	6	<b>12%</b>	1	<b>2%</b>	0	<b>0%</b>
19	I enjoy learning in this environment.	27	<b>54%</b>	15	<b>30%</b>	4	<b>8%</b>	4	<b>8%</b>	0	<b>0%</b>
20	I could learn more in this blended learning environment.	26	<b>52%</b>	15	<b>30%</b>	6	<b>12%</b>	3	<b>6%</b>	0	<b>0%</b>
21	It is easy to work in groups or pairs.	7	<b>14%</b>	23	<b>46%</b>	15	<b>30%</b>	5	<b>10%</b>	0	<b>0%</b>

22	It is easy to work collaboratively with other classmates involved in a group for a project.	14	<b>28 %</b>	16	<b>32 %</b>	12	<b>24 %</b>	6	<b>12 %</b>	2	<b>4%</b>
23	Collaborative blended learning environment held my interest throughout my course of study.	17	<b>34 %</b>	22	<b>44 %</b>	7	<b>14 %</b>	4	<b>8%</b>	0	<b>0%</b>
24	I felt a sense of boredom towards the end of my course of study.	2	<b>4 %</b>	8	<b>16 %</b>	10	<b>20 %</b>	12	<b>24 %</b>	18	<b>36 %</b>

**Table 5.56: Results related to experimental subjects' perceptions of Response scale**

Table 5.56 shows the experimental subjects' perceptions of Response scale. The results, as presented in table 5.56 above, reveal that the majority of those who were questioned feel that blended learning environment often (42%) enables them to interact with other students and the teacher using e-mail or instant messaging. Also the experimental subjects often feel a sense of satisfaction (58%) and enjoyment (54%) about engaging in this learning environment, and they often (52%) learn more in this learning environment. Furthermore, 46% of the experimental subjects claim that it is sometimes easy to work in groups and work collaboratively with other students (32%), and they report that blended learning environment often (44%) holds their interest throughout the course of study. Besides, 36% of the experimental subjects almost never feel sense of boredom towards the end of the course. The results of the fourth scale are presented in the section below.

- **Scale 4: Results**

This scale is concerned with the organization of the online learning platform and whether the structure of the online learning activities is adequate. The results of analysis are highlighted in table 5.57 below:

N	Items	Almost always (%)		Often (%)		Sometimes (%)		Seldom (%)		Almost never (%)	
		AF	%	AF	%	AF	%	AF	%	AF	%
25	The learning objectives are clearly stated in each lesson.	32	<b>64%</b>	9	<b>18%</b>	8	<b>16%</b>	1	<b>2%</b>	0	<b>0%</b>
26	The organization of each lesson is easy to follow.	25	<b>50%</b>	19	<b>38%</b>	5	<b>10%</b>	0	<b>0%</b>	1	<b>2%</b>
27	The structure of the lessons keeps me focused on what is to be learned.	29	<b>58%</b>	14	<b>28%</b>	6	<b>12%</b>	0	<b>0%</b>	1	<b>2%</b>
28	Expectations of assignments or activities are clearly stated.	26	<b>52%</b>	13	<b>26%</b>	8	<b>16%</b>	3	<b>6%</b>	0	<b>0%</b>
29	Activities are planned carefully.	36	<b>72%</b>	10	<b>20%</b>	3	<b>6%</b>	1	<b>2%</b>	0	<b>0%</b>
30	The online course is appropriate for delivery on the web.	25	<b>50%</b>	13	<b>26%</b>	8	<b>16%</b>	2	<b>4%</b>	2	<b>4%</b>
31	The presentation of the subject content is clear.	28	<b>56%</b>	13	<b>26%</b>	9	<b>18%</b>	0	<b>0%</b>	0	<b>0%</b>
32	The quizzes in the web-based learning platform enhanced my reading and writing skills.	37	<b>74%</b>	9	<b>18%</b>	4	<b>8%</b>	0	<b>0%</b>	0	<b>0%</b>

**Table 5.57: Results related to experimental subjects' perceptions of Results**

Table 5.57 presents the experimental subjects' perceptions of results scale. From table 5.57 above, it can be seen that the experimental subjects report that the learning objectives are almost always clearly stated in each lesson (64%), the

organization of each lesson is easy to follow (50%), and the structure keeps them focused on what is to be learned (58%). More than half of the experimental subjects think that the expectations of assignments are almost always clearly stated (52%), the activities are planned carefully (72%), the online subject is appropriate for delivery on the web (50%), and the presentation of the content is clear (56%). In addition, 74% of the participants questioned say that the quizzes in the web-based learning platform almost always enhance their reading and writing skills. The next section deals with the analysis of the third research instrument used in the present study.

#### **5.2.4. Analysis of focus group interview findings:**

A focus group interview was conducted with ten participants (3 males and 7 females) from the experimental group to explore their perceptions of CBL and to back up the results of the perceptual questionnaire. The interview was audio-recorded with permission from the participants and was transcribed for data analysis. Content analysis was used to analyze the interview findings. The results related to the 6 interview questions are presented below:

**Question 1:** *What is your general opinion about engaging in collaborative blended learning?*

This question aimed at exploring students' general opinion of using collaborative blended learning to develop their literacy skills and finding out their experience in learning in such an environment. The theme of the first interview question is named "experimental subjects' opinion of using CBL", and five categories and five sub-categories were extracted. The results are presented in table 5.58 below:

<b>Theme</b>	<b>Category</b>	<b>Sub-category</b>
	<b>Lowering the affective filter</b>	- It enhances self-confidence and boosts self-esteem.
	<b>Interaction and communication</b>	- It promotes the sharing of ideas and exchange of opinions. - It encourages students to participate. - It boosts communication with the

<b>Experimental subjects’ opinion of CBL</b>		teacher and classmates.
	<b>Feedback</b>	<ul style="list-style-type: none"> <li>- Students feel more comfortable in making mistakes.</li> <li>- Students’ can scaffold and correct their own and others’ mistakes.</li> <li>- They can provide explanation to each other.</li> </ul>
	<b>Enjoyment and efficiency</b>	<ul style="list-style-type: none"> <li>- It enhances satisfaction and positive attitudes towards learning.</li> <li>- It promotes utility.</li> </ul>
	<b>Enhanced learning</b>	<ul style="list-style-type: none"> <li>- It enriches students’ knowledge.</li> <li>- It develops their reading and writing skills.</li> <li>- It enhances communicative skills.</li> <li>- It promotes flexibility</li> </ul>

**Table 5.58: Experimental subjects’ opinion of using CBL to develop their literacy skills**

Table 5.58 presents the results of the experimental subjects’ opinion of using CBL to develop their literacy skills. Data from the interview, as presented in table 5.58, show that 5 categories emerged. The first category is named lowering the affective filter and its sub-category is about enhancing self-confidence and self-esteem. The verbal data relating to the first category are as follows:

**Student 1:** *“I think the first thing is that it improves our self-esteem; it boosts our confidence to take parts in activities.”*

**Student 2:** *“It improves my confidence.”*

**Student 4:** *“I find it very effective to develop myself.”*

The second category is called interaction and communication. As presented in table 5.58 above, the interviewees mention that collaborative blended learning helps in sharing ideas, participating in group discussion, and enhancing communication. With regard to the second category, the interviewees provided the following responses:

**Student 1:** *“It enhances communicative skills. You can learn how to communicate better, especially when you send to the teacher, you learn how to be more academic.”*

**Student 3:** *“For me collaborative learning is based on participation in class, sharing ideas among students and knowing how to work with peers.”*

**Student 4:** *“Personally I find that this experience is really effective to develop our level of English, especially in the module of reading and writing because in collaborative learning we depend on communicating in class, sharing ideas.”*

**Student 7:** *“I think collaborative learning helped us to share ideas, opinions, and knowledge.”*

**Student 8:** *“It helped us to communicate as my classmate said (pause) in communicating with other students, talking and speaking with many students and the teacher (pause) helped us a lot.”*

The third category related to the first interview question is entitled Feedback. The interviewees point out to three sub-categories namely delivering feedback, feeling more comfortable in making mistakes and scaffolding one another. The interviewees provided the following data:

- **Student 7:** *“I think CBL helped us to share ideas, opinions, and knowledge( pause)correct our mistakes (pause) we explain to each other(pause)we correct the mistakes of each other.”*
- **Student 9:** *“I think that collaborative learning is based on participation and in case the student couldn’t improve their (pause) his skills or write in an academic way, other students can help him and give him confidence.”*

The fourth category of the first interview question is entitled enjoyment and efficiency. Two sub-categories emerged: enhancing satisfaction and promoting utility. The interviewees provided the following verbal data:

- **Student 4:** *“Personally, I find that this experience is really effective to develop our level of English, especially in the module of reading and writing because in collaborative learning we depend on communicating in*

*class, sharing ideas. And the way of teaching(pause), I find it very effective to develop myself.”*

- **Student 6:** *“We learned more, and for me I think it is a good method to understand.”*
- **Student 5:** *“As you know I am repeating the year, so I learned before (pause) For me (pause) this time personally it is a higher level because it is a great way of learning. It changed from (pause)I don’t know how to express(pause),but it is different from the other teaching methods or strategies but in a good way because it helped me.”*
- **Student 10:** *“It is the best way of learning.”*

Further, the fifth category, which emerged from interview findings related to the first question, is entitled “Enhanced learning”. Four sub-categories emerged from the analysis of the interviewees’ verbal responses; these consist of enriching knowledge, developing literacy skills, enhancing communicative skills, and promoting flexibility. The experimental subjects’ comments below illustrate the previous findings:

- **Student 7:** *“I think CBL helped us to share ideas, opinions, and knowledge (pause) correct our mistakes (pause)we explain to each other (pause)we correct the mistakes of each other. And online learning is a new way of learning that helped me to develop my skills, experience new things, communicate with others and make good efforts in learning.”*
- **Student 6:** *“For me it is a great step for learning English. It improves our reading and writing. I think that it is a strategy that really developed our English for writing and learning.”*
- **Student 3:** *“Firstly, for me collaborative learning is based on participation in class, sharing ideas among students and knowing how to work with peers. However, online learning is more reliable nowadays*

*because it is quite easier (pause)and because of accessibility, flexibility and access to resources.”*

The results related to the second interview question are presented below.

**Question 2:** *Do you think that online learning enhanced your writing skills? If yes, in what way? Could you please describe the writing stages that were most developed?*

The second question of the focus group interview sought to find out whether online learning developed students’ writing skill and to describe the writing stage (s), namely planning, writing and editing, that were most developed as a result of online learning. The theme of the second interview question is called “online learning and writing skill development”; the analysis of the subjects’ verbal data related to the second interview question led to the emergence of three categories and subcategories. The findings are demonstrated in table 5.59 below:

<b>Theme</b>	<b>Category</b>	<b>Sub-category</b>
<b>Online learning and writing skill development</b>	<b>The planning stage</b>	- Outlining - Clustering - Jotting down ideas and words
	<b>The editing stage</b>	- Avoiding mistakes - correcting writing mistakes - Checking vocabulary
	<b>Use of educational technologies</b>	- E-dictionaries - Online learning platform

**Table 5.59: Online learning and writing skill development**

Table 5.59 displays the results related to online learning and writing skill development. From the results presented in table 5.59 above, three main categories emerged from the second interview question namely: the planning stage, the editing stage and use of educational technologies. In the first category, the interviewees mention outlining, clustering and jotting down ideas and words. The following comments illustrate the findings obtained:

- **Student 1:** *“Yes, it does. For me, it was planning and editing, because I learned how to plan in order to avoid messy words and not writing*

*directly and also I learned what mistakes to avoid and the correct way to re-correct them or improve them.”*

- **Student 2:** *“Writing strategies are very useful to develop myself, especially the stage of outlining. It helped me to write a brief summary of all my ideas (pause)to write a very organized(pause)and well-structured essay.”*
- **Student 5:** *“Outlining helped me to organize my thoughts, my ideas and how to use my knowledge effectively.”*
- **Student 4:** *“it helped me to get clear ideas.”*

Furthermore, the second category is named the editing stage, and the three sub-categories emerged which are avoiding mistakes, correcting writing mistakes, and checking vocabulary. The comments of the interviewees that relate to the second interview question and second category are presented below:

- **Student 2:** *“I think that outlining helped me a lot because I have never used it before (laughing) it didn’t exist for me, but now I cannot write an essay or even a paragraph without using it, so it helped me a lot to avoid many errors.”*
- **Student 5:***“Planning was developed most because I used to have many ideas, but I didn’t know how to organize them. Now, I write for example a paragraph or an essay, I plan then I write it.”*

The interviewees assert that they use educational technologies to develop their writing skills such as the use of e-dictionaries and the online learning platform. The interviewees’ comments that are related to the second interview question are displayed below:

- **Student 3:** *“We could also use dictionaries or search ...for new information to make our work better.”*
- **Student 4:** *“We could have immediate access without looking for the book or for a specific word; we could find more information and more vocabulary that help us to write a good essay.”*
- **Student 9:** *“Especially in online learning, we find many essays and examples, so we learn how to upgrade our skills and check vocabulary.”*

The findings related to third interview question are presented below.

**Question 3:** *Do you think that engaging in online learning enhanced your reading comprehension skills? If yes, in what way? Discuss your opinion.*

This question intended to see whether engaging in online learning helped the students develop their reading skills. It required the interviewees to discuss the reading skills that were most enhanced as a result of engaging in online learning. The general theme of the third interview question is entitled “online learning and reading skill development”; the different categories and sub-categories that emerged from the analysis of the subjects’ responses are identified and set out in table 5.60 below.

<b>Theme</b>	<b>Category</b>	<b>Sub-category</b>
<b>Online learning and reading skill development</b>	<b>Reading for vocabulary</b>	- Introduction of new vocabulary - Checking the meaning of new words
	<b>Reading for details and main ideas</b>	- It helps students peruse a text effectively and find supporting details easily. - It provides intensive practice. - The skimming strategy was reinforced.
	<b>Time management</b>	- It helps students manage their time. - It increases concentration.
	<b>Flexibility</b>	- Student-led small groups - It helps students read at their own pace
	<b>Feedback</b>	- Correcting mistakes. - Comparing answers.

**Table 5.60: Online learning and reading skill development**

Table 5.60 shows the results related to online learning and reading skill development. As can be seen from table 5.60 above, the general theme is about online learning and reading skill development. This theme gives rise to five categories. The first category identified is that online learning helps develop reading for vocabulary. The interviewees maintain that reading online introduces new vocabulary and helps them check the meaning of difficult words. The interviewees claim that:

- **Student 1:** *“It introduces new vocabulary every time.”*
- **Student 4:** *“It helped me check vocabulary.”*
- **Student 3:** *“I think online learning helped me to develop reading comprehension; each time I read online it helped me to find new words, vocabulary, new expressions and their definitions and when to use them.”*

Additionally, the second category emerged is about reading for details and main ideas. The interviewees say that using online learning regularly develops scanning and skimming strategies and helps them identify supporting details and main ideas quickly. For example, student 7 says *“it helped me to find supporting details.”* And student 10 agrees that *“Skimming and scanning were most improved. CBL helped me to understand the reading task better.”*

Furthermore, the third category is named time management. The interviewees claim that using online learning to develop the reading skill helps them manage their time well and raises their level of concentration. As an illustration, one interviewee says:

- **Student 1:** *“It forces you to concentrate more on the task, so you will learn how to invest time on each exercise and to manage time well.”*

And another interviewee claims that:

- **Student 7:** *“Reading online is more useful; you concentrate when you are alone; it’s calm; you understand more.”*

Besides, another interviewee asserts that:

- **Student 4:** *“I agree with my classmate, when we apply reading strategies online, we are more concentrated rather than in class at home; it’s calm; it helped me check vocabulary.”*

The fourth category is called flexibility. The interviewees agree that this learning methodology helps them to read and do reading tasks at their own pace. As an illustration, one interviewee comments:

- **Student 8:** *“Through online learning, I can read whenever and wherever I want and this is a good thing to improve my reading skills.”*

The interviewees also mention student-led small groups. The comments describing this finding are stated below:

- **Student 9:** *“Reading collaboratively helped me to know my mistakes, and other students can help me to correct mistakes and spell words correctly.”*
- **Student 7:** *“It helped me... to compare ideas to see my level.”*

The findings which concern the fourth interview question are presented below.

**Question 4:** *What are the advantages or disadvantages of collaborative blended learning?*

This question aimed at finding out the merits and drawbacks of using collaborative and online learning as part of a blended learning approach to develop students’ reading and writing skills. The different categories and sub-categories which emerged from the analysis of the students’ verbal responses to the fourth interview question are presented in table 5.61 below:

<b>Theme</b>	<b>Category</b>	<b>Sub-category</b>
<b>Advantages of using CBL to develop literacy skills</b>	<b>Building self-confidence</b>	- Fluency. - Preventing from being shy
	<b>Awareness raising</b>	- Identifying mistakes and correcting them
	<b>Enhancing interaction</b>	- Exchanging ideas - Taking parts in discussions
	<b>Time management</b>	- Knowing how to invest time and remain focused.

**Table 5.61: Advantages of using CBL to develop students’ literacy skills**

Table 5.61 presents the results of the advantages of using CBL to develop students’ literacy skills. As presented in table 5.61, the general theme of the fourth interview question is about advantages of using CBL to develop literacy skills. The first category is named “building self confidence”, and the interviewees refer to two sub-categories which are fluency and confidence. Illustrating this, two interviewees say:

- **Student 1:** *“Collaborative learning for me it stopped me from being shy too much. I am able to express myself more than I was at the beginning of the year, and also ideas are unlimited. When you are in a group, each person shows his own talents. Ideas are constant; each one is continuously giving ideas.”*

Another interviewee comments:

- **Student 4:** *“Online learning helps me... develop our self confidence.”*

The second category is called “awareness raising”, and it consists of one subcategory. The sub-category is about identifying errors and correcting them.

For example, two interviewees put it:

- **Student 7:** *“From the collaborative work, it helped me to find my mistakes for both reading and writing.”*
- **Student 4:** *“The quizzes are very effective and reliable; they helped me to do many activities to correct mistakes”*

The third category is entitled “enhancing interaction”, and two sub-categories emerged which are exchanging ideas and taking part in group discussion. For instance, one interviewee comments:

- **Student 3:** *“Collaborative learning helped me to communicate with others and get many ideas and knowledge. In Online learning, we can depend on ourselves to answer the questions.”*

In addition, another advantage stated by the interviewees is that relying on collaborative and online learning improves their time management. The interviewees claim that this mode of learning aids them to know how to invest time and how to remain focused. The interviewees assert that:

- **Student 4:** *“Actually...online learning helps me to find information, organize our time and develop our self confidence.”*
- **Student 5:** *“I think that online and collaborative work has one shiny advantage is to remain focused.”*

Concerning the challenges, the interviewees claimed that they did not encounter any problems while using CBL to develop their literacy skills.

- **Student 7:** *“I couldn’t find any (laughing)”*

The results related to question 5 of the focus group interview are displayed in table 5.62 below.

**Question 5:** *Did you encounter any difficulties using the MOODLE learning platform? If yes, can you describe the problems you faced and what bothered you most?*

This question intended to find out whether there were any challenges that students encountered while using the MOODLE learning platform as part of a blended learning approach. The interviewees' responses related to the fifth theme entitled "difficulties in using the MOODLE learning platform" were analyzed qualitatively. The different categories and sub-categories are stated in table 5.62 below:

<b>Theme</b>	<b>Category</b>	<b>Sub-category</b>
<b>Difficulties in using the MOODLE learning platform</b>	<b>Access to network infrastructure</b>	- Difficulties in logging on the system
	<b>Student's technology proficiency</b>	- Expressing difficulties in knowing how to use MOODLE.

**Table 5.62: Challenges in using the MOODLE learning platform**

Table 5.62 presents the findings related to challenges in using the MOODLE learning platform. It is apparent from table 5.62 that the interviewees referred to two main challenges regarding the MOODLE learning platform. The first main difficulty is related to access to network infrastructure. The interviewees claim that they sometimes faced difficulties logging on the system because of the lack of internet network. For example, two interviewees comment:

- **Student 2:** *"(Laughing) sometimes it is not easy to access the platform because of our "Algérie télécom" (laughing)...the problem of the internet."*
- **Student 5:** *"Internet in Algeria is annoying."*

Moreover, the interviewees said that at the beginning they faced difficulties in knowing how to use the learning platform because they were not

familiar with it. However, once the instructions and clarifications were communicated by the teacher, they could use it easily as two interviewees say:

- **Student 7:** *“We found difficulties at the beginning because we didn’t know how to use the website. We were lost to find our info, but when we started using it regularly, we couldn’t drift away. We become more familiar with it. It is easy.”*
- **Student 1:** *“Not really, because once you set up the instructions on how to log in the site, we find clear instructions on how to solve the exercises. It wasn’t that difficult.”*

The results related to question 6 of the focus group interview are presented below.

**Question 6:** *What are your suggestions for the improvement of the implementation of collaborative blended learning in literacy skills learning?*

This question sought to find out any suggestions or recommendations that might be proposed by the interviewees to enhance the use of collaborative blended learning in reading and writing class. The students’ verbal responses related to the sixth theme, named “suggestions for the improvement of using CBL in reading and writing class”, were analyzed. Table 5.63 below presents the categories and sub-categories emerged from the interview data:

<b>Theme</b>	<b>Category</b>	<b>Sub-category</b>
Suggestions for the improvement of using CBL in reading and writing class	<b>Station-Rotation model</b>	- Using educational technologies inside the classroom such as MOODLE mobile application and projector.
	<b>Classroom book clubs</b>	- Motivating students to read more. - Building a reading community inside the classroom.
	<b>Gamification</b>	- Introducing game-based quizzes.

**Table 5.63: Suggestions for improving the implementation of CBL**

It is apparent from table 5.63 above that three main categories emerged namely: station rotation model, classroom book clubs and gamification. These categories surfaced mainly in what respects suggestions for the improvement of the use of CBL to develop students' literacy skills.

The interviewees mentioned the importance of using educational technologies in the classroom such the use of MOODLE mobile application and data show to do study online and to improve lesson presentation. For example, two interviewees comment:

- **Student 3:** *"We can learn with the MOODLE application in class. It is good."*
- **Student 9:** *"I think if some students want to discuss ideas, I think it is good to integrate data show in class to show information."*

Furthermore, the interviewees stress the idea of creating classroom book clubs to foster building a reading community, thereby encouraging students to read frequently. As an illustration, one interviewee says that:

- **Student 2:** *"Giving titles of books to each group, and we try to share the meaning and ideas that emerge from the book."*

Moreover, the integration of game-based learning is the fourth category that emerged from the analysis of the sixth interview question. The interviewees favored the introduction of game-based learning. For instance, two interviewees say that:

- **Student 3:** *"Quizzes can be in the form of games in order not to be bored."*
- **Student 4:** *"We should make more quizzes with correction."*

## **Conclusion**

The goal of the present research study was to examine the impact of collaborative blended learning on developing first year degree students' literacy skills in English language at university. Thus, this chapter sought to present the results which emerged from the analysis of the data obtained from a test, a questionnaire and a focus group interview and which relate to three dependent

variables: reading and writing ability, awareness of reading and writing processes, and students' perceptions of using CBL.

The reading and writing test was analyzed descriptively and inferentially. In the pre-treatment phase, the results of the test revealed that both experimental and control subjects exhibited low literacy scores. More precisely, their reading scores were average whereas the writing scores were below average. In the post treatment phase, the findings indicated that the experimental subjects' mean scores improved as compared to the control subjects' mean scores.

Moreover, three questionnaires were used in the present study and were analyzed descriptively. The first questionnaire, which was the foundation of the design of the e-course, was meant to determine the experimental subjects' characteristics. Therefore, the experimental subjects' profile in relation to technology use, their learning styles and learning needs regarding reading and writing skills were identified. The second questionnaire aimed to find out both experimental and control subjects' awareness of reading and writing processes before and after the treatment. The third questionnaire was meant to identify the experimental subjects' perceptions of using CBL to develop their literacy skills. To provide more detailed data regarding students' perception of using CBL, a third research tool was employed. This consisted of a focus group interview which was conducted with 10 participants from the experimental group. The perceptual questionnaire was analyzed descriptively, and content analysis was adopted to analyze the focus group interview. The discussion of results obtained from the analysis of the data emerged from the aforementioned research instruments is discussed in the next chapter.

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**CHAPTER 6:**  
**DISCUSSION OF RESULTS**

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## Chapter 6

### Discussion of Results

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## **Introduction**

This chapter discusses the results that were analyzed and presented in Chapter Five. It seeks to shed light on the findings which emerged from three research instruments namely: a test, three questionnaires and a focus group interview, and to bring answers to the research questions set in the general introduction chapter. While the first research question aims at investigating the impact of using collaborative blended learning on enhancing students' ability to read and write effectively, the second research question seeks to see whether using collaborative blended learning raises students' awareness of reading and writing processes. The third research question is meant to explore students' perceptions of using collaborative blended learning to develop their literacy skills. This chapter aims also at confirming or infirming the research hypotheses which relate to the effectiveness of using collaborative blended learning to develop students' reading and writing ability, its impact on raising students' awareness of reading and writing processes, and students' perceptions of using CBL to develop their literacy skills. The chapter commences by discussing the results of the reading and writing test which is related to the first research question. Then it moves to discussing the results of the questionnaire which concerns the second research question of the present research study, and which sees whether CBL raises students' awareness of reading and writing processes. Finally, it presents the discussion of the perceptual questionnaire and focus group interview which concern the third research question about students' perceptions of CBL.

### **6.1. Effect of CBL on students' reading and writing ability:**

The first research question aimed at investigating the impact of using collaborative blended learning on developing first year EFL degree students' reading and writing ability. The discussion of the test results regarding reading ability is presented in the next section.

### **6.1.1. Effect of CBL on students' reading ability:**

The results of the current study revealed that both experimental and control subjects had an average level in reading, and they did not differ on pretest scores on a standardized test of reading skills. Moreover, the findings of the independent samples t-test showed that there was no significant difference in the mean scores for both groups in the reading pre-test. Therefore, the alternative hypothesis, which assumes that there is a significant difference between the pre-test scores of both control group and experimental group if the p-value is less than 0.05, is rejected, and the null hypothesis, which states that there is no difference between the means of the experimental and control subjects in the reading pre-test, is supported. It can be concluded that both experimental and control subjects had the same reading level before the implementation of CBL with the experimental subjects. The results of the current study also demonstrated that both subjects had an average score regarding the reading skills except for reading for main ideas which was above average for both experimental and control subjects.

After the use of CBL, the students' reading ability improved considerably as was presented in the reading post-test results. Hence, the experimental subjects outperformed the control subjects who were instructed through the conventional method, and one could conclude that there was a significant difference in performance between both groups in descriptive and inferential terms as was demonstrated in the results of the independent samples t-test. This led to rejecting the null hypothesis, which assumes that there is no difference between the experimental subjects and control subjects' means scores in the reading post-test, and supporting the alternative hypothesis which states that there is a difference between the experimental and control groups' means scores in the reading post-test. Therefore, the results of the experiment found clear support for the effectiveness of CBL in enhancing the students' reading ability.

Moreover, the findings of the current study showed that CBL was more effective to develop the students' reading ability than the traditional method of

teaching reading. This finding was clearly demonstrated in the results of the paired samples t-test which indicated that there was a significant difference between the mean of the pre-test and mean of the post-test regarding reading for the experimental subjects who were instructed through CBL. Hence, the null hypothesis, which assumes that there is no difference in the means scores of pre and post reading test for the experimental subjects, is infirmed, and the alternative hypothesis, which states that there is a difference in the mean scores of the pre and post reading test for the experimental subjects, is confirmed. The findings showed that the improvement in experimental group reading scores was statistically significant. The evidence from this study implies that there was a positive impact of using CBL on the reading scores of the experimental subjects in descriptive and statistical terms.

With respect to the results of the paired samples t-test applied with the control subjects, it could be noticed that there was a slight achievement in the control subjects' reading scores in the post-testing phase, and the t-value is higher than the critical value. That is to say the p-value is lower than the alpha level 0.05. Thus, the null hypothesis, which assumes that there is no difference in the mean scores of pre and post reading test for the control subjects, is rejected, and the alternative hypothesis, which presumes that there is a difference in the mean scores of the pre and post reading test for the control subjects, is confirmed. It can be concluded that the traditional approach to teaching reading had a positive effect on developing the students' reading ability. However, it is worthwhile inferring from the outcome of the paired samples t-test that although both experimental and control subjects improved significantly, one could conclude that the use of CBL had a higher impact than the traditional method on enhancing students' reading ability as was presented in the analysis of the reading posttest results.

When it comes to reading skills, the findings of the current study revealed that CBL enhances students' reading skills in terms of reading for vocabulary, reading for main ideas, and reading for inference. Hence, the students' lexical

repertoire was developed, and they were able to understand difficult words from context. They seemed also competent at locating referents and drawing inferences and conclusions from a text. Besides, the findings revealed that their skills in getting the gist or identifying main ideas and answering detail questions were upgraded.

The progress made by the students can be explained by the fact that students were given the opportunity to get involved in dual learning contexts namely face-to-face and online learning. This gave them the chance to practise the reading skill intensively and extensively, thereby benefiting from the learning modalities that each learning context offers. On the one hand, face-to-face learning focused on higher order thinking skills where students were engaged in hands-on tasks and active learning that was based on meaningful group discussion, peer-mediated learning, peers' and teacher's scaffolding and continuous feedback. Hence, through regular practice, modeling and explicit strategy instruction, the students could know how to monitor their understanding and how to approach a reading task effectively. According to Wells (1986), "talking to learn" is perceived as a cornerstone for developing students' understanding and thinking, and students could be assisted and scaffolded as they were reading which led them to internalize the necessary techniques and strategies to approach a reading task successfully. Therefore, as Wells (1999) rightly remarks: "when students work collaboratively, while participating in an activity, individuals are in the process of developing mastery of a practice or understanding a topic" (p. 333). On the other hand, online learning served as a meditational tool that helped students practise the reading skill beyond the classroom through posted instructional videos, new text formats, quizzes and activities. Therefore, the appropriation of meditational tools in the learning process can provide the students with continuous scaffolding which can help them internalize certain cognitive skills needed for their learning (Vygotsky, 1978). According to Renshaw (1998), "meditational tools do not simply amplify existing cognitive processes or provide a more efficient way to complete existing tasks— they fundamentally change the nature of the task, the required processes,

and the subjects who are the actors” (p.85). Therefore, this enabled the students to review reading lessons related to strategy use, acquire new vocabulary and deepen their lexical repertoire, practise through reading comprehension quizzes that were based on specific reading skills, apply the learnt reading strategies, receive instant feedback, share their inquiries with their peers and the teacher, manage their time and evaluate their own progress as readers.

Remarkably, the results of the current study, which revealed that the experimental subjects demonstrated better performance in the reading posttest as a result of using CBL, corroborate the findings of a great deal of previous research works in the field of blended learning. The findings of the current study are consistent with the empirical studies conducted by Challob et al. (2016); Yang (2012); Velandia et al. (2012); Maleki et al., (2010); Novita (2012); Lamri (2015); Lustyantje (2017) who found out that engaging students in collaborative and blended learning developed their reading ability, and there was a significant difference in students’ reading proficiency before and after the use of blended learning. Besides, using explicit strategy instruction enhanced students’ reading skills which concern extracting main ideas, scanning for specific information, and understanding difficult words in a text. Thus, engaging students in CBL could help them benefit from scaffolding and constructive feedback which led them to achieve better reading outcomes. The next section deals with the discussion of the writing test results.

#### **6.1.2. Effect of CBL on students’ writing ability:**

The students in both experimental and control groups had the same writing level before the implementation of CBL with the experimental subjects. Thus, the results of the writing pretest revealed that both experimental and control subjects had a below average level in the writing pretest, and there was no significant difference between the means of the experimental and control subjects in the writing pretest as was indicated in the independent samples t-test results (See chapter 5 section 5.1.2.2). These results led to confirming the null hypothesis, which assumes that there is no significant difference between the two groups’

scores in the writing pre-test if the significance value is greater than or equals 0.05, and infirming the alternative hypothesis, which presumes that there is a statistical difference between the mean scores of the experimental and control subjects in the writing pre test. It could be implied that both groups had a similar level of writing proficiency in the pre-testing phase.

The results of the current study also showed that both experimental and control subjects had deficits in organization and development, provided insufficient details to back up the thesis statement and topic sentences, used inappropriate choice of words and made errors in spelling, sentence structure and usage. Thus, their written productions were below average at the level of organizational, visual, stylistic skills as was described in the analysis of the rubric (See chapter 5 section 5.1.2.2). The deficits that the students had could be due to the lack of planning since students seemed not to brainstorm their ideas or outline their essay adequately which resulted in providing less details to support the thesis statement or the topic sentences. At the level of grammatical, visual and stylistic skills, the errors made by both experimental and control subjects could be related to overlooking the importance of the revision stage. Therefore, these errors and ambiguity in meaning can be avoided only when students give prime consideration to organizing their ideas and revising their written productions in terms of mechanics, grammar and vocabulary, leading to an appropriate writing style and a well-structured essay.

Moreover, it was found that the use of CBL developed the students' writing ability since the experimental subjects made a remarkable progress regarding the writing test and outperformed the control subjects. Besides, there was a significant difference between the means of the experimental and control subjects in the writing posttest as it was demonstrated in the independent samples t-test results of the writing post test (See chapter 5, section 5.2.1.2). This result rejected the null hypothesis which assumes that there will be no difference between the experimental and control groups' means scores in the writing post test and supported the alternative hypothesis which states that there will be a

difference between the experimental and control groups' means scores in the writing post test. The evidence from this study points towards the view that the use of collaborative blended learning proved to have a potential benefit on developing students' ability to write effectively.

The findings of the present study also indicated that the use of CBL to develop students' writing ability was more effective than the traditional method of teaching writing. This finding was demonstrated in the results of the paired samples t-test applied with the experimental group which revealed that the p-value was lower than the alpha level 0.05 (See chapter 5 section 5.2.1.2). This led to rejecting the null hypothesis, which states that there will be no difference in the means scores of pre and post writing test for the experimental group, and supporting the alternative hypothesis which assumes that there will be a difference in the means scores of the pre and post writing test for the experimental group. Yet, the results of the paired sample t-test conducted with the control subjects indicated that the p-value was higher than the alpha level 0.05 which led to conclude that the results were not statistically significant. That is to say the null hypothesis, which presumes that there will be no difference in the means scores of pre and post writing test for the control group, was supported, and the alternative hypothesis, which assumes that there will be a difference in the means scores of the pre and post writing test for the control group, was rejected. It can be inferred that these findings showed that the mean scores of control group improved descriptively but not statistically. Thus, the findings indicated that the experimental students demonstrated gains that were significantly higher than gains achieved by the control subjects.

Furthermore, the findings of the current study revealed that CBL is conducive to enhanced students' organizational, visual, grammatical and stylistic skills (See chapter 5 section 5.2.1.2). Therefore, after the extensive writing practice that the students had as a result of using CBL, the students' writing skills were upgraded, and their essays seemed to be well-organized in terms of writing an appropriate attention getter, thesis statement, topic sentences, details, and conclusion. Besides, their punctuation and spelling seemed to be upgraded. They

also displayed remarkable advancement in the employment of correct tenses and articles, yet subject- verb agreement needed some improvement. Their lexical repertoire and use of varied vocabulary were enhanced, and this can be due to the different vocabulary quizzes that students had to do online and in face-to-face sessions. The students also had the chance to fortify their stylistic skills, especially on how to write correct and varied sentence structures such as compound, complex and compound-complex sentences, through online assignments and quizzes that were designed purposively to answer this need.

The results of the study regarding the effectiveness of CBL on enhancing students' writing ability are compatible with the results obtained by Yang, (2012); Watanabe, (2014); Keshta and Harb (2013); Challob et al. (2016) and Arar (2015) and which advocated that blended learning helped students boost their writing skills. Thus, the results might be explained by the fact that through implementing collaborative learning in face-to-face instruction, students could produce good writing productions as a result of dialoguing and continuous scaffolding that peers and the teacher offered (Kessler, 1992; Hirvela, 1999; Grami, 2010). As stated in the literature review, Dipardo and Freedman (1988) purport: "Groups present an arena for intervening in the individual's writing process, for working collectively to discover ideas [...] for interacting with supportive others at various points in the composing process." (p.123). When students worked collaboratively to co-construct knowledge, audience awareness, motivation, and reflective thinking were enhanced and fostered. As students involved in peer-feedback and reviewing each others' work, their attention to language forms and discourse could be developed (Storch, 2013). Moreover, the literature also highlighted the pedagogic benefit of incorporating pedagogical tools and collaborative learning for developing students' writing ability as Prior (1998 quoted in Hyland 2016) claims: "Writing happens in moments that are richly equipped with tools (material and semiotic)...writing does not stand alone as the discrete act of writer, but emerges as a confluence of many streams of activity: reading, talking, observing...and thinking" (p.xi).

Furthermore, another possible explanation can be that the MOODLE learning platform allows students to learn at their own pace (Belhadj, 2016). It helped them practise the writing skill extensively and ask for feedback through using synchronous and asynchronous tools. They could also reinforce their understanding through reviewing previous lessons and seeking other enrichment resources that were dedicated mainly to the writing skill. It motivated them to leverage their writing outcomes since the activities answered their needs and accommodated their different learning styles. Therefore, considering online learning as a meditational tool can be conducive to enhanced students' learning outcomes in general and writing ability in particular as Vygotsky (1978) rightly remarks: "Like words, tools and nonverbal signs provide learners with ways to become more efficient in their adaptive and problem solving efforts" (p127). According to the research findings related to the first research question, it can be deduced that the first research hypothesis was confirmed. In what follows, the results related to the second research question are discussed.

## **6.2. Raising students' awareness of reading and writing processes through CBL:**

The second research question sought to investigate the impact of using collaborative blended learning on raising students' awareness of reading and writing processes. Discussion of the questionnaire results related to the reading process is presented in the section below.

### **6.2.1. Using collaborative strategic reading, as part of CBL, to raise students' awareness of the reading process:**

Before the implementation of CBL, the results of the present study indicated that the experimental and control subjects had low reading strategic awareness regarding the reading strategies applied in pre, while and post reading phases. Thus, they seemed to have low awareness of deciding why they are reading a specific text and of using self-generated questions and guesses as a reason for reading a text. They also overlooked the importance of activating background schemata and generating questions related to the text for the purpose

of making connections of what they already know regarding the topic they are reading. Moreover, the findings of the current study revealed that drawing from background knowledge, summarizing and applying fix-up strategies, and self questioning were reported to be the major reading strategies that the subjects were not aware of. Yet, in the post reading phase, both experimental and control groups seemed not to be aware of verifying the predictions made prior to reading the text, drawing conclusions to reflect on the information presented in the text, and summarizing the main points of the text to check their understanding.

After the use of CBL with the experimental subjects, it was proven that this methodology raised the students' awareness of the strategies applied in pre, while and post reading phases. The improvement made by the experimental subjects can be due to the extensive practice that students had in face-to-face learning through collaborative strategic reading and online learning through the MOODLE platform. According to Quesada (2005), in blended learning environments, "students can be exposed to extensive reading and writing through conceptualized practice...learners can exchange messages and discuss readings or they can read web-based stories and write comments to online reading peers" (p.15). As a result, in class, the students relied on collaborative strategic reading that emphasized the employment of reading strategies namely activating background knowledge and previewing before starting reading a text. Prior to reading, the students benefited from working collaboratively to preview the text and generate questions to encourage critical reading. Therefore, modeling the strategies, sharing ideas among peers and involving students in a meaningful group discussion aided them to reinforce their strategy use before reading a text (Cavendish & Hodnett, 2017). All of which provided the students with continuous scaffolding as Ohta (2001) claims: "When working together, students can provide scaffolded assistance to each other, and by pooling their different resources, achieve a level of performance that is beyond their individual level of competence" (p.41). It also raised their awareness of the importance of the previewing strategy and its goals which highlight the significance of generating interest and questions about the text and develop information provided by peers.

The gains made by the experimental subjects can be explained by the instruction they underwent and which was based on collaborative strategic reading and online learning. It is interesting to note that during reading, click and clunk strategy and get the gist strategy allowed the students to improve their lexical repertoire and understanding of a text. Click and clunk strategy encouraged students to self-monitor their understanding of difficult ideas or words of the text through applying fix-up strategies and extending the information provided in the text. According to Cavendish and Hodnett (2017), “clicking and clunking is designed to teach students to be aware of when they understand the text, and when they do not [...] students self-monitor their understanding as they are reading” (p.2). Besides, practicing get the gist strategy helped the students know how to identify the most important ideas in a text by paraphrasing and excluding unnecessary details. Through ongoing meaningful group discussion and peer-mediated learning, students could achieve better reading outcomes in terms of identifying words or concepts that they did not understand, applying fix-up strategies to understand the meaning of difficult words and relying on background schemata to extend ideas presented in the text. In addition, teacher’s support, scaffolding and monitoring of group work ensured students’ active involvement in the reading process and engagement in meaningful participation which in return would maximize student input and help them internalize reading strategies (Cavendish & Hodnett, 2017; Frankel et al., 2016). All this was reinforced by online practice which gave students the chance to practice the stated strategies extensively.

As far as the post reading phase is concerned, the increase in percentages may be explained by the increase in the experimental subjects’ awareness of the strategies applied in post-reading phase as a positive result of the instruction they undertook. As a result, the experimental subjects became aware of summarizing the key details of the text to draw conclusions, verifying the predicted ideas, and checking whether their purpose for reading a text was met. This could be explained by the fact that collaborative strategic reading helped students observe how their peers think, and the process they underwent to comprehend a text

(Dale, 1994). Therefore, in the current study, students became self-regulated learners who took control of the reading strategies and used them independently because their awareness of the strategies applied was increased. Besides, relying on collaborative strategic reading learning logs to record answers or ideas while applying reading strategies guided the students in applying the right reading strategies that go for each reading process. Hence,

CSR learning logs enable students to keep track of learning "as it happens" and provide a springboard for follow up activities...they furnish an additional way for all students to participate actively in their groups.

(Klingner & Vaughn, 1998, p. 35).

The findings of this study are consistent with the studies conducted by Fan (2009), Tok (2008), Ghaith (2003) and Novita (2012) which suggest that CSR promotes interaction with peers and can support the development of students' reading competence, including the reading process. Together these results provide important insights into the effectiveness of using collaborative blended learning to raise students' awareness of the reading process. As a result of using collaborative blended learning, the reading strategy use of the students exhibits characteristics of active strategic readers. This demonstrates that the experimental subjects consciously selected and used the appropriate reading strategies in each phase (before, during and after reading) to achieve comprehension and to monitor their understanding. They knew when to set purposes for reading, activate prior knowledge, generate questions, extract main ideas, apply fix-up strategies, and draw conclusions. Hence, modeling, giving specific feedback, and adjusting the level of support that needs to be provided to students are crucial in raising students' awareness of the reading process (Frankel et al., 2016). Discussion of the results regarding the writing process is presented in the next section.

### **6.2.2. Using collaborative writing, as part of CBL, to enhance students' writing process:**

The findings of the current study indicated that the means for both experimental and control subjects were above average in pre, while and post writing stages. However, there seems to be some contradiction in the students' answers regarding their awareness of the writing process. They appeared to be somehow aware of the writing stages that should be undergone, yet, the analysis of the writing test and the rubric proved the opposite.

After the implementation of CBL, one could notice a positive change in the experimental subjects' answers regarding awareness of the strategies that should be employed before, during and after writing tasks (See chapter 5 section 5.2.2.1). This increase in awareness can be explained by the use of collaborative learning in class where peer-feedback, peer-editing, and teacher scaffolding were highlighted in addition to the use of online learning outside class where students could practise the writing process extensively.

The results of the current study revealed that the students benefited from collaborative writing inside the classroom which provided a social context for learning that was based on peers' and teacher's scaffolding and feedback. Collaborative writing placed the student at the heart of the learning process and considered writing as a social activity rather than a solitary endeavor. It promoted negotiation of meaning where students could exchange and share knowledge and reflect on their own performance as writers (Daiute & Dalton, 1993). Regarding the pre-writing stage, through mutual interaction that was achieved by pair or group work, students while working in groups could observe how their peers approached the writing task and could initiate and generate ideas for their writing production through paying attention to careful planning that encompasses brainstorming and outlining in order to organize and clarify their ideas adequately. As far as the while writing phase is concerned, the students benefited from the discussion that they had prior to starting writing their first draft and relied on the outline and ideas that they had generated and this could help them focus more on content rather than mechanics. In the post writing phase, the students became aware of proofreading and revising each other's work through peer-editing and feedback

Thus, students' awareness of the writing process increased as they could have extended practice through online learning which focused on supplementary practice. The latter provided students with extra activities and lessons regarding the writing stages, thereby assisting them and raising their awareness of the writing process. They were encouraged to approach a writing task as a process of planning, writing and revising and using the synchronous and asynchronous tools to post their inquiries. Since learning will only occur in the zone of proximal development and when students have opportunities to maximize their learning process through active learning, this zone bridges the gap between what a student knows and what he can know through the assistance of other peers and mediational tools such as technology (Vygotsky, 1978). Hence, "A mixture of expert writers and novice writers in a team creates scaffolding" (Shin, 2014, p.34), and students can learn from each other the several writing strategies employed. The literature also stressed the advantages of online learning for developing the writing process as Shin (2014) opines: "With the scaffold of online materials available and time to work at their own pace, students would feel more empowered to share and contribute to the planning of the essay" (p. 38). From this perspective, relying on mediation by tools and on collaboration can achieve scaffolding that aids the student to perform out of his zone of proximal development which makes the student autonomous and active in the learning process. According to Shin (2014), "collaborative writing makes students in the group more mindful of the writing processes due to the awareness of "audience" reading their text[...] the presence of another writer other than the individual acts as a monitor to revise the work done" (p.35). Hence, students' awareness of the writing process can be raised through simplifying the activity, modeling, monitoring performance, engaging in group dialoguing, providing extensive practice, and giving constructive feedback (Rogoff, 1990). Starting from the aforementioned results related to the second research question, the second research hypothesis, which assumes that CBL raises students' awareness of reading and writing processes, is confirmed. The next section presents the discussion of the results related to the third research question.

### **6.3. Students' perceptions of CBL to develop their literacy skills:**

The third research question was meant to explore students' perceptions of using collaborative blended learning to develop their reading and writing skills. Taking into account how students perceive the instruction they undertook would help in evaluating the effectiveness of the suggested methodology in developing their literacy skills. The instruments that were administered to answer the third research question are a questionnaire and a focus group interview. For validity issues, the use of a second research tool i.e. a focus group interview would help in cross-checking the results obtained from the questionnaire. The next section presents the discussion of results of the perceptual questionnaire administered to the experimental subjects.

#### **6.3.1. Providing access to learning materials:**

The results of the present study demonstrated that the online learning platform encouraged easy access to the learning materials and helped students study at their own pace. Its flexibility allowed them to set learning goals and decide on which lessons need further understanding and practice (Belhadj, 2016); this led students to be autonomous and active in their learning process. Therefore, the experimental subjects in general agreed that blended learning environment provided a convenient and efficient way of accessing the learning activities. It also enhanced their autonomy of when and how they intended to access the learning materials and activities. For Tobin (1998 cited in Chang & Fisher, 2003), convenience is accomplished when students have the ability to control the time and the content that is to be learned, and efficiency is deemed to allow students to study beyond classroom setting. It can be said blended learning develops students' autonomy since it helps them take responsibility for their own learning process through doing the online assignments and interacting with peers and the teacher.

#### **6.3.2. Creating social space for students: Collaboration and reflective interaction**

The use of CBL to develop students' literacy skills fortifies students' collaboration and purposeful interaction which are reflected in the participants' responses to the questionnaire and focus group interview. The participants had positive perceptions of participating and interacting in collaborative blended environment since they were enabled to contact one another and participate in the different activities posted on the MOODLE platform. According to Ehlers (2013), the second generation of online learning "emphasizes the metaphor of participation learning is perceived as an interlinked, social process in which Web 2.0 tools are used to develop learning results through collaboration and communication" (p.28). Therefore, the synchronous and asynchronous tools helped students collaborate, scaffold each other, post their inquiries, send their written productions for correction and provide constructive feedback.

The students were also aware that they had to be self-disciplined when engaging in online learning, and they could take part in different evaluations and interact regularly in order to be a successful learner in this environment. Through interaction and participation, the students could develop their reading and writing skills and achieve better learning outcomes. According to King (2016), blended learning provides social space for students where communication, as a social activity, can be best fostered, and it optimizes collaboration in the learning process by allowing more time for both the teacher and the student. Moreover, Mason and Rennie (2007) hold the view that blended learning "supports collaborative work, thereby allowing users to develop the skills of working in teams." (p. 199). From this perspective, it can be deduced that collaboration and interaction can be viewed as the major cornerstones to accomplish desirable learning outcomes where the teacher is regarded as a guide and a facilitator rather than the mere provider of knowledge.

Moreover, CBL allows students to reflect on their progress through encouraging reflective interaction among peers. This is described by enabling students to use the synchronous and asynchronous tools outside class and collaborative learning in class to negotiate meaning, co-construct knowledge and

share ideas (See chapter 5 section 5.2.3). The findings of the current study also revealed that the students had the opportunity to get feedback from their peers and the teacher to increase their reading and writing outcomes. Hence, blended learning encourages the exchange of constructive feedback to help students evaluate their progress as readers and writers (Tobin, 1998 cited in Chang & Fisher, 2003). In this view, allowing students to have background knowledge and some practice before coming to class would help them apply their existing knowledge to get engaged in new reading and writing tasks in class. Overall, CBL helps the students sharpen their language skills through active learning, feedback and reflection.

### **6.3.3. Continuous support to students:**

The results of the current study demonstrated that the experimental subjects had positive perceptions of the different activities posted on the MOODLE online platform. The students felt a sense of achievement and satisfaction once they had completed the blended learning course. Another important finding was that the students expressed a high level of enjoyment, and they agreed that participation in this learning context boosted their confidence and helped them achieve successful learning outcomes. Since students are technology-savvy and have good digital skills, enjoyment can be explained by the success in using technological tools effectively. Hence, confidence can be boosted in blended learning environment because students have continuous support and encouragement either from their peers or the teacher. As noted by Johnson (2004), “collectively constructed support (scaffolding) provides not only the opportunity for input exchange among learners but also the opportunity to expand the learner’s own knowledge” (p. 130). Once the students are provided with successful learning and support, they can display their progress through regular practice, scaffolding, mediation and feedback (Tobin, 1998 cited in Chang & Fisher, 2003).

### **6.3.4. Extending students’ learning through online learning:**

Since CBL is based on dual learning contexts, the students had positive perceptions of online learning to develop their reading and writing skills. The current study found that the learning materials and the organization of the online platform help the students stay focused while learning online. The instructions in each activity also guided the students throughout their learning process. This implies that when the online learning platform is adequately designed by taking into account students' learning styles and needs, stating goals, stating objectives for each activity or quiz, varying content, and ensuring interactivity, the students will perceive it as effective and beneficial for enhancing their learning outcomes. On the basis of the questionnaire and focus group interview results, it might be concluded that stating learning objectives and organization of the blended learning materials are central in guiding students in their studies. Hence, providing students with extra learning that consists of online activities and quizzes can increase students' learning and provide them with adequate scaffolding outside the classroom.

Online learning enhances the students' writing skill and raises their awareness of the writing stages. The results of the current study indicated that the students' writing skills developed because they became aware of the writing strategies that are appropriate for each writing stage and this due to the extensive practice they had through online learning. Therefore, blended learning environments consider learning as an extended process as Singh (2003) notes: "the concept of blended learning is rooted in the idea that learning is not just a one-time-event, learning is a continuous process" (p.6). It can be said that online learning aided them to write regularly and exercise the writing stages more frequently. Online learning also allowed the students to improve their essays or paragraphs through the use of e-dictionaries to check vocabulary and spelling of words and relying on the learning platform to know how to write well-structured essays, to reinforce their understanding and to practise the writing skill extensively.

Online learning helps students develop their reading skills and strategies. As it was described in the students' responses to the perceptual questionnaire and

focus group interview, this methodology broadens students' lexical repertoire and improves their reading strategies in L2. Some reading strategies, such as previewing, scanning, skimming, drawing conclusions and summarizing were upgraded due to the online activities that were dedicated to improve them. Overall, the students expressed positive perceptions regarding the use of online learning to develop their reading and writing process as this raised their awareness of the recursive reading and writing stages that need to be taken into account while reading or writing. These findings are in agreement with the findings of Abdul Majid et al., (2015) and Lamri (2015) which showed that online learning enhances students' reading and writing skills since it offers an opportunity for the students to consolidate their learning, practise reading and writing skills extensively and be assessed continuously.

#### **6.3.5. Fostering time management and self-paced learning:**

CBL provides students with time flexibility and promotes time management. This learning methodology aided the students to study at their own pace and to manage their time (Marsh, 2012), thereby encouraging self-paced learning and raising their level of concentration. Thus, CBL offers students flexibility in when and where they engage with the learning activities and materials. The results of the present study also indicated that this didactical approach allowed the students to engage in student-led small groups where they could receive constructive feedback from their peers and the teacher which could reinforce their understanding and allow them to compare their answers and evaluate their own and others' work, thus increasing their autonomy. It also boosted their involvement as they engaged in group and peer work where they could exchange ideas and provide adequate scaffolding.

These results are consistent with the empirical study conducted by Bentayyab (2012), which demonstrated EFL students' positive perceptions of blended learning. The researcher indicated that the students who relied on blended learning expressed high levels of enjoyment, motivation and autonomy. Hence, the results of the present study regarding students' perceptions indicated

that the students had a seamless and engaging experience since they generated confidence, persistence and academic achievement as a result of using CBL. It can be concluded that the use of CBL matches the students' profile since they are considered as connected students who want to integrate aspects of online learning into their own educational process.

#### **6.3.6. CBL as an effective learning and teaching methodology:**

The findings of the current study indicated that CBL is perceived to be an effective learning and teaching methodology that aims at developing students' reading and writing skills. It was revealed that engaging in CBL helped students lower their affective filter and enhanced their confidence and self esteem as was described in the subjects' responses to the perceptual questionnaire and focus group interview. This would suggest that CBL fosters a supportive and social learning environment that promotes successful and active learning. Therefore, when students feel confident, their willingness to learn will raise and their reading and writing outcomes are likely to improve.

Furthermore, CBL enhanced students' intercommunication and interaction with the teacher and peers. The students were able to express themselves candidly while engaging in group discussion and maintained that CBL offered a continuous communication channel between classmates, promoted the sharing of ideas and exchange of opinions and propelled them to participate in different reading and writing activities. This methodology also invigorated constructive feedback which helped students feel more comfortable in making mistakes and scaffolding one another. They could rely on peer-evaluation to correct their own and others' mistakes through explaining and involving in ongoing group discussion and dialoguing. Using collaborative and online learning created a positive and productive learning atmosphere that promoted active and efficient learning that led to enhancing students' motivation and enjoyment.

Using collaborative and online learning enriched students' knowledge, developed their reading and writing ability and heightened their communicative skills. This finding could be explained by the fact that combining two learning

contexts, namely face-to-face and online learning, allowed students to extend learning hours and reinforce their understanding of reading and writing skills through regular practice and interaction with peers and the teacher. As mentioned in the literature review (e.g. Ruthven, 2003; Sitter et al., 2009; Huang et al., 2006; Singh, 2003), the use of CBL boosts students' self confidence and enables them to communicate candidly, to share ideas and to exchange opinions among peers. Moreover, online learning allows the students to study at their own pace, to prepare for classes and participate in discussions. Thus, it promoted flexibility and facilitated access to learning resources.

### **6.3.7. Merits and challenges of CBL:**

The results of the current study revealed that various advantages accrued from using CBL to develop students' literacy skills. Firstly, engaging in collaborative learning in the classroom and using the interactive mode in online learning boosts students' self confidence and allows them to express themselves freely. Secondly, this methodology develops students' language awareness through engaging in different reading and writing tasks that hinge on peer-mediated learning. Thus, peer-evaluation and intensive reading and writing practice proved to have a direct bearing on developing students' awareness of the errors that they made and how to correct them as it was described in their responses to the focus group interview. Thirdly, through working in groups and involving in deep dialoguing, using CBL enables the students to share and negotiate their ideas as well as interact with their peers and the teacher. It also fostered learner autonomy as students became self-dependent in their learning process and took greater responsibility for their own learning (Stacey & Gerbic, 2009). In addition, another advantage is that relying on collaborative and online learning improved time management as the quizzes and learning activities were timed which aided the students to fortify their organizational skills through careful planning and decision making. The findings of the present study are consistent with the study conducted by Huang et al. (2006) and which revealed that blended learning encourages personalized learning, fosters time management and promotes students' language skills.

However, despite the merits provided by CBL, the results of the current study demonstrated that the students faced some technical challenges while using online learning as part of a blended learning approach. The first main difficulty was related to access to network infrastructure. The students stated that they sometimes faced difficulties logging on the system due to the lack of internet network. According to Al-Zumor et al. (2013), connectivity problems and technological issues can hinder the process of online learning as some students cannot have access to online learning materials. Since the students were not familiar with the MOODLE platform, they faced some technical difficulties in knowing how to use the learning platform. Yet, once the instructions and clarifications were communicated by the teacher, they could use it easily. This would suggest that students can excel at MOODLE by using it regularly. Together these findings provide important insights into the introduction of MOODLE in the learning process. For Wilkins (2014), any attempts to incorporate online learning, especially the MOODLE learning platform, requires having regular access to network infrastructure and cognizance about using the educational platform to achieve good learning outcomes.

Some recommendations or suggestions were proposed by the students. The use of MOODLE mobile application and data show inside the classroom can be conducive to enhance lesson presentation and give students the opportunity to do some quizzes online in the classroom. This implies that students favor station-rotation model of blended learning in which the students work in groups and go through a series of stations among which is the use of technological tools in the classroom (Staker & Horn, 2012). Furthermore, creating classroom book clubs to foster building a reading community can encourage students to read frequently and discuss their readings with their peers. The integration of game-based learning was also highlighted since it can leverage enjoyment and motivation as it was described in the participants' responses to the focus group interview. From the aforementioned discussion of the results related to the third research question, it can be concluded that the third research hypothesis, which assumes that

students have positive perceptions of using CBL to develop their reading and writing skills, is confirmed.

## **Conclusion**

The current study sought to investigate the impact of using collaborative blended learning on developing first year EFL degree students' literacy skills. To this end, this chapter has discussed the findings which emerged from the analysis of the data obtained from three research instruments namely a test, three questionnaires and a focus group interview and brought answers to the research questions. Regarding the first research question, which aimed at investigating the impact of using collaborative blended learning on enhancing students' ability to read and write effectively, the reading and writing test findings revealed that CBL proved to have a positive impact on developing students' reading and writing ability. Therefore, through extensive practice that students had in face-to-face learning which consisted of collaborative strategic reading and collaborative writing, and online learning outside class, the students could improve their reading and writing outcomes. Moreover, the results related to the second research question which was meant to find out whether or not CBL raises students' awareness of reading and writing processes indicated that students' awareness of the strategies applied in pre, while and post reading and writing tasks increased. This suggests that collaborative learning fosters scaffolding, peer-mediated learning and sharing of ideas that increase students learning and help them internalize the strategies that need to be applied in pre, while and post reading and writing tasks. Besides, online learning, as part of a blended learning approach, aids students to extend learning hours beyond classroom education and have extensive practice on the reading and writing skills. As far as students' perceptions of using CBL to develop their literacy skills are concerned, the students expressed different constructive opinions regarding the use of CBL to develop their literacy skills. It can be said that CBL carries several pedagogic potentials that have a direct bearing on developing students' literacy skills. It is

based on flexibility which facilitates student learning and fosters self-paced learning and achieves convenience, easy access to learning resources, autonomy, and satisfaction. It also lowers students' affective filter, fosters social learning and intercommunication.

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# **GENERAL CONCLUSION**

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## **General Conclusion**

In today's digital age, it is undeniable that the use of ICTs has revolutionized pedagogical practices and has contributed to the development and enforcement of varied up-to-date learning and teaching approaches. This has led to a renewed interest in the incorporation of innovative approaches in the teaching-learning process for the purpose of increasing students' learning and improving teaching quality. Nowadays, EFL students have become accustomed to relying on educational technologies to perform certain tasks or learning activities; thus, it has become necessary to adapt the way of teaching to their profile so as to enhance their learning, meet their needs, cater to their varied learning styles and improve their language skills. Adapting teaching methods to the profile of the students may leverage their learning and enhance their willingness to learn. As far as language skills are concerned, in this doctoral thesis, the focus was drawn on literacy skills since they are perceived to be critical for academic success and complex skills that require a number of intertwined cognitive processes and eclectic strategies in order to be well-upgraded.

Researchers in the field of literacy skills have advocated the pedagogic potential of collaboration, scaffolding and mediation in developing students' reading and writing outcomes, claiming that these tenets can foster students' reading and writing ability and increase their awareness of the reading and writing process. Therefore, in order to provide an inclusive learning atmosphere that matches twenty first century pedagogy, reflects the changing profile of students and encourages active learning, light has been casted on the use of collaborative blended learning (CBL) to develop students' literacy skills. CBL is one of the novel frameworks that integrates various sociocultural assumptions (e.g. Mediation, scaffolding and collaboration) and hinges on the integration of dual learning contexts namely face-to-face and online learning to help students fortify their reading and writing ability through deep and active learning. On the one hand, the integration of online learning as a mediational tool has gained

much recognition among researchers in the field of literacy skills development since it offers students with extended reading and writing practice that is based on interactivity, feedback, and continuous scaffolding. On the other hand, face-to-face learning is viewed as the fundamental building block that can improve students' higher order thinking skills through engaging them in hands-on tasks that can revolve around meaningful group work, peer-mediated learning, critical reflection, constructive feedback, and scaffolding. Since collaboration is conceived as a crucial aspect in twenty first century pedagogy, this educational framework integrates the potential benefit of collaborative strategic reading (CSR) and collaborative writing (CW) in face-to-face learning in order to create a productive learning environment in which students' reading and writing ability can be scaffolded, enriched and developed.

The objectives of this doctoral thesis were threefold. First, it aimed at developing students' reading and writing ability as a result of engaging them in collaborative blended learning which conflates dual learning contexts namely online learning and face-to-face instruction. Second, it was meant to raise their awareness of reading and writing processes. Third, it sought to evaluate the efficiency of the framework through exploring students' perceptions of using CBL to develop their literacy skills.

The present doctoral thesis was divided into two parts. Part one was devoted to the theoretical background of the study which provided a thorough understanding of the theoretical framework based essentially on Vygotsky's (1987) sociocultural theory. This theory describes learning as a social process in which social interaction plays a crucial role in the individual's cognitive development. In order to draw a clear picture of CBL as an instructional approach, Chapter One, entitled blended learning in English language education, has tried to clarify the term blended learning and tackle its pedagogic benefit through shedding light on its definition, tenets, objectives, models as well as its merits and challenges. Thus, through considering varied definitions of blended learning, it could be concluded that this innovative approach, in its essence, is an

instructional approach that coalesces online learning with in-person learning. This combination can hinge on the incorporation of eclectic methods, learning strategies, and different delivery modes to help students develop their language skills, increase their learning and maximize their engagement in the learning process. Hence, since blended learning fosters the use of dual learning environments, it can be said that it considers learning as a continuous process where online learning plays the role of a mediational tool that scaffolds students' learning beyond the classroom. In this context, to ensure the optimal learning atmosphere for students, the employment of blended learning in English language education should be based on four cornerstones. These consist of blending face-to-face instruction with online learning, identifying students' characteristics, fostering collaboration among students, and fortifying flexibility of time and place. In order to maximize students' learning and ensure that learning objectives are met, designing a blended learning course requires selecting a blended learning model that can answer students' learning needs and cater to their varied leaning styles. Several pedagogical models have come to the fore to ease the design process of blended learning in higher education; thus, light has been casted on Hack's instructional model (2016) since it considers both face-to-face and online learning. This model, which was explained and emphasized in Chapter One of the present study, takes into consideration students' profile in relation to technology use, stating goals and objectives, selecting an assessment method, selecting a model for blending and sequencing online and face-to-face content, and piloting the course to ensure its validity and practicality. Moreover, this chapter has discussed the potential benefit of assessment in blended learning for the purpose of tracking and monitoring students' progress and scaffolding their learning. This was done through shedding light on the online tools that can be used to assess students' learning and provide them with continuous feedback. Besides, teachers' and students' roles in blended learning environment were clarified. The teacher is believed to create a student-centered classroom that places the student at the heart of the learning process and needs to facilitate the blend for his/her students through

guiding and managing their learning activities, scaffolding their learning and creating opportunities for them to develop their reading and writing skills. On the other hand, students need to be autonomous and cooperative in order to succeed in a blended learning context. This can be accomplished through enabling students to monitor and evaluate their own learning process and identifying the language aspects that need improvement or further consolidation. Finally, the chapter ended up with a section that stated the pedagogic merits and possible challenges of blended learning.

Chapter Two of the present doctoral thesis is named developing students' literacy skills with a collaborative learning framework. First, this chapter has provided a definition of reading and writing skills through stating their multifaceted perspectives. Literacy skills were first approached from a cognitive angle which emphasized the development of reading and writing ability as a result of mental functions and cognitive processes. However, it was found that for the cognitive process to be reinforced, the context, with its social agents, should be considered since it carries a variety of knowledgeable others. The latter can take the form of peers with different abilities and tools such as technology. From this perspective, the social view of literacy skills conceives learning as a social and joint activity where it can be best developed through immersing students in collaborative learning, continuous scaffolding and mediation. Yet, this view does not exclude the cognitive process which includes awareness of the use of strategies and higher order thinking skills, but it reinforces it through the context which is characterized by scaffolding, mediation and collaboration. Moreover, this chapter has presented the framework of collaborative blended learning that embodies the aforementioned aspects of social learning and which revolve around collaboration, scaffolding, and mediation through technology. Therefore, collaborative blended learning encompasses face-to-face instruction and online learning. While the former consists of collaborative strategic reading (CSR) and collaborative writing (CW) where students can work collaboratively, scaffold each other, provide feedback, and evaluate their progress as readers and

writers, the latter can extend students' learning beyond the classroom where they can practise the reading and writing skills extensively.

Chapter Three of the thesis is named the place of scaffolding, mediation and collaboration in literacy skills development. It aimed at highlighting the theoretical framework of the present study which was based on sociocultural theory. The main purpose of sociocultural theory is to consider learning as a social activity where it could be best enhanced through adopting three main tenets namely scaffolding, mediation, and collaboration in the learning process. Therefore, these Vygotskian cornerstones are conducive to enhanced students' mental functions as a result of involving them in meaningful interaction, group work, and the use of technological tools, leading to developing students' use of reading and writing strategies, their reading and writing ability, and academic achievement. Therefore, collaborative learning, which embeds scaffolding and mediation, fosters constructive feedback, modeling, group work and the use of online learning as a meditational tool. This would place students at the heart of the learning process and help them gain control of their own learning.

The empirical part of the thesis involved three chapters namely Chapter Four, Five and Six. Chapter Four has described the quasi-experimental research design of the present study. Thus, it has clarified the sample population, the different research instruments, data collection procedure, and analytical methods used to describe, interpret and compare the findings according to the research variables. It has equally presented the pilot study in addition to the follow-up study of the present research. Moreover, Chapter Five aimed to analyze and present the results which emerged from three research instruments namely a test, three questionnaires, and a focus group interview. These were related to three dependent variables: reading and writing ability, awareness of reading and writing processes, and students' perceptions of using CBL to develop their literacy skills. Chapter Six sought to discuss the findings which were analyzed and presented in Chapter Five. It has highlighted the positive results that emerged

from the research instruments and which led to concluding that collaborative blended learning had a significant impact on developing students' literacy skills.

With regard to the first research hypothesis, the findings of the reading and writing test revealed that the use of CBL had a positive impact on developing students' ability to read and write effectively. The experimental subjects' reading and writing ability was developed as a result of the instruction that they had undergone where they could learn both in the classroom and online. Thus, they could study collaboratively in class where they were enabled to engage in hands-on tasks that were based on modeling, questioning, scaffolding and continuous feedback. Thus, when students engaged in meaningful group work, they could interact with peers with different abilities, involve in peer-evaluation and devote class time to deep and active learning. Online learning also extended the experimental subjects' learning process and provided them with the opportunity to practise reading and writing extensively via the MOODLE learning platform which consisted of online lessons, quizzes, assignments and group discussion. They could also receive instant feedback that helped them assess their own learning process and fortify other language aspects that needed further consolidation. Therefore, the integration of technology in education can be perceived as a mediating tool that plays a crucial role in adapting to the students' changing profile, accommodating their learning styles and aligning to their preferences.

Regarding to the second research hypothesis, the present research study has come up with positive results regarding the use of CBL to raise students' awareness of reading and writing processes. As compared to the control subjects, who were taught through the conventional method, this study has shown that CBL had a positive impact on raising the experimental subjects' awareness of pre, while and post reading and writing tasks. After the implementation of CBL to develop students' literacy skills, the experimental subjects became more aware of the strategies that need to be employed in each reading and writing phase. Therefore, the evidence from this study suggests that face-to-face instruction, which incorporates collaborative strategic reading and collaborative writing,

enabled the participants to engage in different strategies through guided practice and reinforcement which are deemed to be crucial for students to attain mastery. On the one hand, collaborative strategic reading, which was based on explicit strategy instruction, modeling, guided practice and independent practice, provided students with the opportunity to practise reading strategies that need to be employed in every reading stage through working collaboratively. It also enabled them to develop their lexical repertoire and questioning techniques as a result of the intensive practice and deep learning they had in class. On the other hand, collaborative writing scaffolded students' writing as a result of collaborative work where students could approach the writing task as a process, plan for their written work, and provide continuous feedback to each other. They were also able to go through the recursive process of writing and were more aware of planning, drafting, evaluating and proofreading their written work. Thus, collaborative writing gave the experimental subjects the chance to engage in joint practice which is based on social and interactive learning that consists of peer-dialoguing, peer-reviewing, hands-on tasks, iterative and dynamic use of writing strategies in addition to negotiation and exchange of knowledge and ideas among students. Moreover, online learning was beneficial for the students since it allowed them to consolidate their learning, reinforce their strategy use and practise reading and writing thoroughly. The results of this study, thus, suggest that the use of CBL to develop students' literacy skills provided the students with various instructional strategies that could make them aware of reading and writing processes. They could move progressively towards greater application of strategies in pre, while and post reading and writing tasks, thereby leading to greater autonomy in the learning process.

As regards the third research hypothesis, the evidence emerging from the questionnaire and focus group interview has shown that the experimental subjects had generally positive perceptions of using CBL to develop their literacy skills. Various pedagogical advantages have been accrued from the use of CBL which mixes CSR, CW and online learning. The results of this investigation have shown that the use of CBL in a literacy context fortified students'

communication skills since they could engage in collaborative learning which allowed them to lower their affective filter, exchange knowledge, discuss and negotiate their reading and writing tasks with their peers. In addition, this learning context ensured easy access to online learning via the use of the MOODLE learning platform which involved different learning resources and a set of quizzes and assignments that were dedicated purposively to mediating students' learning and developing their reading and writing skills beyond the classroom. Greater time flexibility and interactivity were also among the pedagogical merits that CBL provided to students. These two aspects, which fostered self-paced learning, provided the students with the opportunity to plan and prepare for class as well as consolidate their learning. This instructional framework also created enhanced-opportunities for teacher-student interaction and student-student interaction since they were able to engage in both face-to-face and regular online discussion where they could exchange constant feedback, expand their knowledge, fortify their intercommunication skills and deepen their literacy practice, leading to autonomous and enhanced reading and writing outcomes.

This technology-rich instructional framework equipped the students with varied instructional strategies and supportive learning conditions to develop their reading and writing skills. The sociocultural tenets that underpinned CBL contributed to guiding and leveraging students' learning in a way that they could practise reading and writing outside class and devote class time to active learning. The latter was mainly based on modeling, continuous scaffolding, constant feedback, and peer-mediated learning. Therefore, explicit strategy instruction that characterized CSR and CW proved to have a direct bearing on raising students' awareness of the reading and writing strategies that should be relied on in every stage. Online learning also plays a pivotal role in assisting students' learning, allowing them to evaluate their progress as a result of distributed practice and continuous feedback. As students regularly participate in the different CBL contexts, they could become more competent at setting learning goals and evaluating their progress as readers and writers.

The present research study has provided insightful results, specifically in relation to this new generation of students and teachers who are working within new paradigms. They seem to have developed mindsets of innovation and change that was reflected in learning and teaching, both inside and outside class. More than literacy skills, CBL seems to have affected and enhanced their cross-curricular competencies in terms of reflectivity and creativity, to name but a few. The challenge is now on the side of the decision-makers who would encourage and monitor the implementation of CBL at all levels of Algerian education, by providing means and ways for its successful implementation.

### **Limitations of the study:**

As with the majority of studies, the current study is subject to some limitations. The first limitation concerns the duration of the experiment. Although the experiment, which lasted one semester (12 weeks), has successfully demonstrated positive results, the study would have led to more significant performance, especially in the writing skill, if it had lasted for more than one semester. Thus, more time needs to be devoted to the treatment so that it increases in effectiveness over time. The second limitation is about the use of a Moodlecloud. The present study has opted for a MOODLE cloud rather than hosting a MOODLE website because the MOODLE platform was not introduced in the University of Algiers 2 in the academic year (2017-2018). To this end, the MOODLE cloud in the present study was used for experimental purposes only, and it is only limited to the experimental subjects who received the treatment. It should be noted that blended learning requires the availability of technological equipments such as data show, computer laboratories and internet connection to at least improve lesson presentation in the classroom and give students a chance to study using ICTs. However, lack of suitable equipments hindered the use of technology in the classroom; thus, the students had the opportunity to study online only outside the classroom.

### **Pedagogical implications and avenues for further research:**

Various pedagogical implications have emerged from the present study which pertains to the use of CBL to develop students' literacy skills. The findings of the present study suggest that combining face-to-face instruction with online learning can contribute to fortifying students' reading and writing skills. Educators should consider the implementation of CBL, as a transformative approach, in the teaching of reading and writing skills at university level so as to make learning student-focused rather than teacher-focused, improve teaching quality and increase students' learning. Thus, diversifying learning contexts and revisiting the reading and writing syllabus according to CBL can meet the developing needs of students, engage them in active learning and ensure that learning outcomes are achieved as a result of rigorous assessment that is based on continuous formative assessment which gives the students the opportunity to be monitored and scaffolded in and beyond the classroom. From this perspective, since students are considered as digital natives, adopting technology-integrated learning approaches that promote student centeredness and active learning can raise their willingness to learn, thereby promoting deep and purposeful learning. Hence, to ensure the students' full engagement in the learning process, educators should remain cognizant of their students' preferences, learning styles and individual needs so as to consider them in the design of blended learning courses. Yet, the Algerian context in which the study is conducted does not reflect the objectives of the LMD system which revolve around integrating educational technologies in the teaching-learning process and making the learning process more student-directed. To meet this objective, curricula must integrate technological means at all levels of education. Teachers should also tailor and customize learning approaches and strategies to the context in which learning occurs and to the learning needs or profile of the students they teach.

This study demonstrated that CBL, which mixes face-to-face instruction that is based on CSR and CW with online learning, carries various pedagogical merits that promote active learning. EFL teachers need to consider the possibility to

incorporate various hands-on tasks in class which can revolve around cognitive modelling, pair-and-share activities, meaningful group discussion, use of learning logs and peer-editing sheets as well as collaborative work. All of which can be incorporated to scaffold students' learning, provide constructive support and help them achieve good reading and writing outcomes. CSR and CW can encourage students' active participation which can help them apply the reading and writing stages and strategies until they are internalized, leading to automaticity and mastery. Relying on collaboration, scaffolding and mediation can allow students to engage in interactive learning where they can benefit from more knowledgeable others and lower their affective filter as they interact with each other. Teachers can supplement face-to-face instruction with online learning to provide students with extended reading and writing practice and track their progress beyond the classroom through posted quizzes and online assignments. Out-of-class activities can mediate students' learning and would allow them to self-monitor their own learning and evaluate their own reading and writing through reflection and instant feedback that can raise their awareness of the literacy aspects that need further consolidation. To integrate online learning in face-to-face learning, teachers can rely on varied learning platforms (e.g. MOODLE; Zoom; Abode Captivate Prime; Aziksa Blended Learning System; Google Classroom) to create courses, grade assignments, share learning resources, provide students with synchronous and asynchronous tools to interact, and determine how students will be assessed.

Another possible implication of the present research study is that teachers or policy makers need to consider the integration of the flipped learning model as part of a blended learning approach to develop students' literacy skills. Flipped learning can contribute to enhancing the students' lower and higher order thinking skills by devoting class time to active learning and moving lesson presentations to out of class through videos and power point presentations. Students can be given the chance to do additional out-of-class assignments to practise what they have learnt and consolidate their learning. Besides, different assistive technology tools such as word processing, grammar checkers and

editing programs can be incorporated to enhance students' written productions in terms of grammar, mechanics, and revision. In addition to these tools, other computer-based programs such as Intelligent Essay Assessor, Criterion, IntelliMetric, and Summary Street can mediate students' writing and help them focus more on higher level thinking since they identify not only writing errors but also analyze their writing style and overall organization.

Moreover, integrating technology-based approaches in the learning process often requires training. Thus, to ensure a good learning environment which is characterized by CBL principles, different professional development programs, training sessions, workshops and seminars need to be provided to practitioners. This would familiarize both teachers and students with blended learning and enable them to benefit from its online context to improve teaching practices and match them to twenty first century pedagogy, thereby leveraging students' learning.

Yet, it is recommended that further research be undertaken in the field of blended learning and literacy skills development and which can revolve around:

- Exploring BL implementation constraints or teachers' attitudes towards adopting blended learning in the teaching of reading and writing at university level;
- Considering the integration of mobile-based learning and mobile applications in face-to-face instruction to offer students extra learning activities and interactive learning;
- Investigating the impact of distance education as a support tool on enhancing students' English language skills;
- Investigating the impact of other blended learning models such as station-rotation, flex and self-blend models on developing students' literacy skills and how they can be best incorporated in learning;
- Exploring the strategies used by EFL students in digital reading or writing and whether they perform differently in traditional learning;

- Creating or designing up-to-date reading and writing courses or computer-based programs that are dedicated to developing students' reading and writing skills and fortifying their strategy use.

The present study has demonstrated the significant results related to the use of CBL to develop students' literacy skill at university level. Thus, taking the complexity of literacy skills and the different intertwined cognitive processes that students need to be aware of, this pedagogical framework has been implemented to foster assistive strategies and tools that enable students to achieve good reading and writing outcomes. Incorporating CBL in higher education would match the age of digital technologies through highlighting its pedagogical components that can be conducive to increased students' learning. Thus, collaboration, mediation by technology and scaffolding presented a plethora of advantages. The latter are merely pertinent to promoting students' reflection through peer reviewing and peer-mediated learning, encouraging active learning which is based on hands-on tasks and group work, and fostering the use of online learning to mediate students' learning and cope with the demands of this globalized world. It is hoped that the challenging learning framework suggested in this study, which conflates face-to-face instruction with online learning, will lead to autonomous students, capable of taking responsibility for their own leaning and of using these modern tools for reflectivity, life-long learning and creativity, which are essential competencies for today's globalized world.

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# **APPENDICES**

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**Appendix A: Collaborative strategic reading learning log**

Date: .....

Topic:.....

<b>Before Reading</b>	<b>Previewing</b>	<p><b>1. What I already know about the topic:</b></p> <p><b>2. What I think I will learn:</b></p>		
<b>While Reading</b>	<b>Difficult words and Gists</b>	<b>First section</b>	<b>Second section</b>	<b>Third section</b>
		<p><b>Difficult words:</b></p> <p><b>The gist:</b></p>	<p><b>Difficult words:</b></p> <p><b>The gist:</b></p>	<p><b>Difficult words:</b></p> <p><b>The gist:</b></p>
<b>After Reading</b>	<b>Wrap up</b>	<p><b>Summary of the text</b></p> <p><b>Questions about the important ideas in the passage</b></p> <p><b>What I learned:</b></p>		

(Adapted from Klingner et al., 2001)

## Appendix B: Reading pre-test

**Direction: In this reading comprehension test you will read several passages. Each one is followed by a number of questions. Please circle the one best answer to each question.**

### Passage 1:

Line  
2

It is commonly believed in the United States that school is where people go to get an education. Nevertheless, it has been said that today children interrupt their education to go to school. The distinction between schooling and education implied by this remark is important.

Line  
6

Education is much more open-ended and all-inclusive than schooling. Education knows no **bounds**. It can take place anywhere, whether in the shower or on the job, whether in a kitchen or on a tractor. It includes both the formal learning that takes place in schools and the whole universe of informal learning. The agents of education can range from a revered grandparent to the people debating politics on the radio, from a child to a distinguished scientist. Whereas schooling has a certain predictability, education quite often produces surprises. A **chance** conversation with a stranger may lead a person to discover how little is known of other religions. People are engaged in education from infancy on. Education, then, is a very broad, inclusive term. It is a lifelong process, a process that starts long before the start of school, and one that should be **an integral** part of one's entire life.

Line  
11

Line  
15

Line  
18

Schooling, on the other hand, is a specific, formalized process, whose general pattern varies little from one setting to the next. Throughout a country, children arrive at school at approximately the same time, take assigned seats, are taught by an adult, use similar textbooks, do homework, take exams, and so on. The slices of reality that are to be learned, whether **they** are the alphabet or an understanding of the workings of government, have usually been limited by the boundaries of the subject being taught.

For example, high school students know that they are not likely to find out in their classes the truth about political problems in their communities or what the newest filmmakers are experimenting with. There are definite conditions surrounding the formalized process of schooling.

**1. What does the author probably mean by using the expression “children interrupt their education to go to school” (in line 2-3)?**

- (A) Going to several different schools is educationally beneficial.
- (B) School vacations interrupt the continuity of the school year.
- (C) Summer school makes the school year too long.
- (D) All of life is an education.

**2. The word “bounds” (in line 6) is closest in meaning to**

- (A) rules
- (B) experience
- (C) limits
- (D) exceptions

**3. The word “chance” (in line 11) is closest in meaning to**

- (A) unplanned
- (C) lengthy

(B) unusual (D) lively

**4. The word “an integral” (in line 15) is closest in meaning to**

- (A) an equitable (B) a profitable  
(C) a pleasant (D) an essential

**5. The word “they” (in line 18) refers to**

- (A) slices of reality (B) similar textbooks  
(C) boundaries (D) seats

**6. The phrase “For example,” introduces a sentence that gives examples of**

- (A) similar textbooks (B) the results of schooling  
(C) the workings of a government (D) the boundaries of classroom subjects

**7. The passage supports which of the following conclusions?**

- (A) Without formal education, people would remain ignorant.  
(B) Education systems need to be radically reformed.  
(C) Going to school is only part of how people become educated.  
(D) Education involves many years of professional training.

**8. The passage is organized by**

- (A) listing and discussing several educational problems  
(B) contrasting the meanings of two related words  
(C) narrating a story about excellent teachers  
(D) giving examples of different kinds of schools

**Passage 2:**

The hard, rigid plates that form the outermost portion of the Earth are about 100 kilometers thick. These plates include both the Earth's crust and the upper mantle. The rocks of the crust are composed mostly of minerals with light elements, like aluminum and sodium, while the mantle contains some heavier elements, like iron and magnesium. Together, the crust and upper mantle that form the surface plates are called the lithosphere. This rigid layer floats on the denser material of the lower mantle the way a wooden raft floats on a pond. The plates are supported by a weak, plastic layer of the lower mantle called the asthenosphere. Also like a raft on a pond, the lithospheric plates are carried along by slow currents in this more fluid layer beneath them.

Line  
15

With an understanding of plate tectonics, geologists have put together a new history for the Earth's surface. About 200 million years ago, the plates at the Earth's surface formed a “supercontinent” called Pangaea. When this supercontinent started to tear apart because of plate movement, Pangaea first broke into two large continental masses with a newly formed sea that grew between the land areas as the depression filled with water. The southern **one** — which included the modern continents of South America, Africa, Australia, and Antarctica — is called Gondwanaland. The northern one — with North America, Europe, and Asia — is called Laurasia. North America tore away from Europe about 180 million years ago, forming the northern Atlantic Ocean.

Line  
19

Some of the lithospheric plates **carry** ocean floor and others carry land masses or a combination of the two types. The movement of the lithospheric plates is

Line  
25

responsible for earthquakes, volcanoes, and the Earth's largest mountain ranges. Current understanding of the interaction between different plates explains why these occur where they do. For example, the edge of the Pacific Ocean has been called the "Ring of Fire" because so many volcanic eruptions and earthquakes happen there. Before the 1960's, geologists could not explain why active volcanoes and strong earthquakes were **concentrated** in that region. The theory of plate tectonics gave them an answer.

**9. With which of the following topics is the passage mainly concerned?**

- (A) The contributions of the theory of plate tectonics to geological knowledge
- (B) The mineral composition of the Earth's crust
- (C) The location of the Earth's major plates
- (D) The methods used by scientists to measure plate movement

**10. According to the passage, the lithospheric plates are given support by the**

- (A) upper mantle      (B) ocean floor
- (C) crust              (D) asthenosphere

**11. The author compares the relationship between the lithosphere and the asthenosphere to which of the following?**

- (A) Lava flowing from a volcano      (B) A boat floating on the water
- (C) A fish swimming in a pond      (D) The erosion of rocks by running water

**12. The word "one" (in line 15) refers to**

- (A) movements      (B) masses
- (C) sea              (D) depression

**13. According to the passage, the northern Atlantic Ocean was formed when**

- (A) Pangaea was created      (B) plate movement ceased
- (C) Gondwanaland collided with Pangaea      (D) parts of Laurasia separated from each other

**14. The word "carry" (in line 19) refers to**

- (A) damage      (B) squeeze
- (C) connect      (D) support

**15. In line 25, the word "concentrated" implies**

- (A) Allowed      (B) Clustered
- (C) Exploded      (D) Strengthened

**16. Which of the following can be inferred about the theory of plate tectonics?**

- (A) It is no longer of great interest to geologists.      (B) It was first proposed in the 1960's.
- (C) It fails to explain why earthquakes occur.      (D) It refutes the theory of the existence of a supercontinent.

**17. The paragraph following the passage most probably discusses:**

- (A) why certain geological events happen where they do

- (B) how geological occurrences have changed over the years
- (C) the most unusual geological developments in the Earth's history
- (D) the latest innovations in geological measurement

**Passage 3 :**

Line 2 In the United States in the early 1800's, individual state governments had more **effect** on the economy than did the federal government. States chartered manufacturing, banking, mining, and transportation firms and participated in the construction of various internal improvements such as canals, turnpikes, and railroads.

Line 5 The states encouraged internal improvements in two **distinct** ways; first, by actually establishing state companies to build such improvement; second, by providing part of the capital for mixed public-private companies setting out to make a profit. In the early nineteenth century, state governments also engaged in a surprisingly large amount of direct regulatory activity, including extensive licensing and inspection programs.

Line 16 Licensing targets reflected both similarities in and differences between the economy of the nineteenth century and that of today: in the nineteenth century, state regulation through licensing fell especially on peddlers, innkeepers, and retail merchants of various kinds. The perishable commodities of trade generally came under state inspection, and such important frontier staples as lumber and gunpowder were also subject to state control. Finally, state governments experimented with direct labor and business regulation designed to help the individual laborer or consumer, including **setting** maximum limits on hours of work and restrictions on price-fixing by businesses.

Line 20 Although the states dominated economic activity during this period, the federal government was not inactive. Its goals were the facilitation of western settlement and the development of native industries. Toward these **ends** the federal government pursued several courses of action. It established a national bank to stabilize banking activities in the country and, in part, to provide a supply of relatively easy money to the frontier, where it was greatly needed for settlement. It permitted access to public western lands on increasingly easy terms, culminating in the Homestead Act of 1862, by which title to land could be claimed on the basis of residence alone. Finally, it set up a system of tariffs that was basically protectionist in effect, although maneuvering for position by various regional interests produced frequent changes in tariff rates throughout the nineteenth century.

**18. What does the passage mainly discuss?**

- (A) States's rights versus federal rights
- (B) The participation of state governments in railroad, canal, and turnpike construction
- (C) The roles of state and federal governments in the economy of the nineteenth century
- (D) Regulatory activity by state governments

**19. The word "effect" (in line 2) is closest in meaning to**

- (A) value
- (B) argument
- (C) influence
- (D) restraint

**20. All of the following are mentioned in the passage as areas that involved state governments in the nineteenth century EXCEPT**

- (A) mining                      (B) banking  
(C) manufacturing      (D) higher education

**21. The word “distinct” (in line 5) refers to the word:**

- (A) separate                      (B) innovative                      (C) alarming                      (D) provocative

**22. It can be inferred from the first paragraph that in the nineteenth century canals and railroads were**

- (A) built with money that came from the federal government  
(B) much more expensive to build than they had been previously  
(C) built predominantly in the western part of the country  
(D) sometimes built in part by state companies

**23. The regulatory activities of state governments included all of the following EXCEPT**

- (A) licensing of retail merchants                      (B) inspecting materials used in turnpike maintenance  
(C) imposing limits on price-fixing                      (D) control of lumber

**24. The word “setting” (in line 16) is closest in meaning to**

- (A) discussing                      (B) analyzing  
(C) establishing                      (D) avoiding

**25. By saying “Toward these ends the federal government pursued several courses of action, the author probably means:**

- (A) Toward these benefits                      (B) Toward these decisions  
(C) Toward these services                      (D) Toward these goals

**26. According to the passage, which of the following is true of the Homestead Act of 1862 ?**

- (A) It made it increasingly possible for settlers to obtain land in the West.  
(B) It was a law first passed by state governments in the West.  
(C) It increased the money supply in the West.  
(D) It established tariffs in a number of regions.

**27. Which of the following activities was the responsibility of the federal government in the nineteenth century?**

- (A) Control of the manufacture of gunpowder  
(B) Determining the conditions under which individuals worked  
(C) Regulation of the supply of money  
(D) Inspection of new homes built on western lands

**Passage 4:**

Life originated in the early seas less than a billion years after Earth was formed. Yet another three billion years were to pass before the first plants and animals appeared on the continents. Life's transition from the sea to the land was perhaps as much of an evolutionary challenge as was the genesis of life.

Line

5 What forms of life were able to make such a **drastic** change in lifestyle? The traditional view of the first terrestrial organisms is based on megafossils — relatively large specimens of essentially whole plants and animals. Vascular plants, related to modern seed plants and ferns, left the first comprehensive megafossil record. Because of this, it has been commonly assumed that the sequence of terrestrialization reflected the evolution of modern terrestrial ecosystems. In this view, primitive vascular plants first colonized the margins of continental waters, followed by animals that fed on the plants, and lastly by animals that preyed on the plant-eaters. Moreover, the megafossils suggest that terrestrial life appeared and diversified explosively near the boundary between the Silurian and the Devonian periods, a little more than 400 million years ago.

Line

17

Line

19

Recently, however, paleontologists have been taking a closer look at the sediments below this Silurian-Devonian geological boundary. It turns out that some fossils can be **extracted** from these sediments by putting the rocks in an acid bath. The technique has uncovered new evidence from sediments that were deposited near the shores of the ancient oceans — plant microfossils and microscopic pieces of small animals. In many **instances** the specimens are less than one-tenth of a millimeter in diameter. Although **they** were **entombed** in the rocks for hundreds of millions of years, many of the fossils consist of the organic remains of the organism.

These newly discovered fossils have not only revealed the existence of previously unknown organisms, but have also pushed back these dates for the invasion of land by multicellular organisms. Our views about the nature of the early plant and animal communities are now being revised. And with those revisions come new speculations about the first terrestrial life-forms.

**28. The word “drastic” (in line 5) refers to**

- (A) widespread (B) radical  
(C) progressive (D) risky

**29. According to the theory that the author calls “the traditional view,” what was the first form of life to appear on land?**

- (A) Bacteria (B) Meat-eating animals  
(C) Plant-eating animals (D) Vascular plants

**30. According to the passage, what happened about 400 million years ago?**

- (A) Many terrestrial life-forms died out.  
(B) New life-forms on land developed at a rapid rate.  
(C) The megafossils were destroyed by floods.  
(D) Life began to develop in the ancient seas.

**31. The word “extracted” (in line 17) is closest in meaning to**

- (A) located (B) preserved  
(C) removed (D) studied

**32. What can be inferred from the passage about the fossils mentioned in lines 15-18?**

- (A) They have not been helpful in understanding the evolution of terrestrial life.  
(B) They were found in approximately the same numbers as vascular plant fossils.

- (C) They are older than the megafossils.  
(D) They consist of modern life-forms.

**33. The word “instances” (in line 19) is closest in meaning to**

- (A) methods            (B) processes  
(C) cases              (D) reasons

**34. The word “they” (in line 20) refers to**

- (A) rocks              (B) shores  
(C) oceans            (D) specimens

**35. The word “entombed” (in line 20) is closest in meaning to**

- (A) crushed            (B) trapped            (C) produced            (D) excavated

**36. Which of the following resulted from the discovery of microscopic fossils?**

- (A) The time estimate for the first appearance of terrestrial life-forms was revised.  
(B) Old techniques for analyzing fossils were found to have new uses.  
(C) The origins of primitive sea life were explained.  
(D) Assumptions about the locations of ancient seas were changed.

**37. With which of the following conclusions would the author probably agree?**

- (A) The evolution of terrestrial life was as complicated as the origin of life itself.  
(B) The discovery of microfossils supports the traditional view of how terrestrial life evolved.  
(C) New species have appeared at the same rate over the course of the last 400 million years.  
(D) The technology used by paleontologists is too primitive to make accurate determinations about ages of fossils.

**Passage 5:**

Line 4            What we today call American folk art was, indeed, art of, by, and for ordinary, everyday “folks” who, with increasing prosperity and leisure, created a market for art of all kinds, and especially for portraits. Citizens of prosperous, essentially middle-class republics — whether ancient Romans, **seventeenth-century Dutch burghers**, or nineteenth-century Americans — have always shown a **marked** taste for portraiture. Starting in the late eighteenth century, the United States contained increasing numbers of such people, and of the artists who could meet their demands. The earliest American folk art portraits come, not surprisingly, from New England — especially Connecticut and Massachusetts — for **this** was a wealthy and populous region and the center of a strong craft tradition. Within a few decades after the signing of the Declaration of Independence in 1776, the population was pushing westward, and portrait painters could be found at work in western New York, Ohio, Kentucky, Illinois, and Missouri.

(8)            Midway through its first century as a nation, the United States's population had increased roughly five times, and eleven new states had been added to the original thirteen. During these years the demand for portraits grew and grew eventually to be (16) satisfied by the camera. In 1839 **the daguerreotype** was introduced to America,

- (19) **ushering in** the age of photography, and within a generation the new invention put an end to the popularity of painted portraits. Once again an original portrait became a luxury, commissioned by the wealthy and **executed** by the professional.

- (21) But in the heyday of portrait painting — from the late eighteenth century until the 1850's — anyone with a modicum of artistic ability could become a **limner**, as such a portraitist was called. Local craftspeople — sign, coach, and house painters — began to paint portraits as a profitable sideline; sometimes a talented man or woman who began by **sketching** family members gained a local reputation and was besieged with requests for portraits; artists found it **worth their while** to pack their paints, canvases, and brushes and to travel the countryside, often combining house decorating with portrait painting.
- (24)

**38.** The author mentions seventeenth-century Dutch burghers (in line 4) as an example of a group that

- (A) consisted mainly of self-taught artists (B) appreciated portraits  
(C) influenced American folk art (D) had little time for the arts

**39.** The word “**marked**” (in line 5) is closest in meaning to

- (A) pronounced (B) fortunate  
(C) understandable (D) mysterious

**40.** According to the passage, where were many of the first American folk art portraits painted?

- (A) In western New York (B) In Illinois and Missouri  
(C) In Connecticut and Massachusetts (D) In Ohio

**41.** The word “**this**” (in line 8) refers to

- (A) a strong craft tradition (B) American folk art  
(C) New England (D) western New York

**42.** How much did the population of the United States increase in the first fifty years following independence?

- (A) It became three times larger. (B) It became five times larger.  
(C) It became eleven times larger. (D) It became thirteen times larger.

**43.** The phrase “**ushering in**” (in line 16) is closest in meaning to

- (A) beginning (B) demanding  
(C) publishing (D) increasing

**44.** The relationship between the daguerreotype (in line 16) and the painted portrait is similar to the relationship between the automobile and the

- (A) highway (B) driver (C) horse-drawn carriage (D) engine

**45.** According to the passage, which of the following contributed to a decline in the Demand for painted portrait?

- (A) The lack of a strong craft tradition (B) The westward migration of many painters

(C) The growing preference for landscape paintings      (D) The invention of the camera

**46. The word “executed” (in line 19) is closest in meaning to**

- (A) sold                      (B) requested  
(C) admired                (D) created

**47. The author implies that most limners (in line 21)**

- (A) received instruction from traveling teachers      (B) were women  
(C) were from wealthy families                              (D) had no formal art training

**48. The word “sketching” (in line 24) is closest in meaning to**

- (A) drawing                (B) hiring  
(C) helping                (D) discussing

**49. Where in the passage does the author provide a definition?**

- (A) Lines 3-6      (B) Lines 7-9      (C) Lines 12-14      (D) Lines 20-22

**50. The phrase “worth their while” (in line 25) is closest in meaning to**

- (A) essential                (B) educational  
(C) profitable                (D) pleasurable

## Appendix C: Reading post-test

**Directions:** In this reading comprehension test you will read several passages. Each one is followed by a number of questions. Please circle the one best answer to each question.

### Passage 1:

With Robert Laurent and William Zorach, direct carving enters into the story of modern sculpture in the United States. Direct carving — in which the sculptors themselves carve stone or wood with mallet and chisel — must be recognized as something more than just a technique. Implicit in it is an aesthetic principle as well: that the **medium** has certain qualities of beauty and expressiveness with which sculptors must bring their own aesthetic sensibilities into harmony. For example, sometimes the shape or veining in a piece of stone or wood suggests, perhaps even **dictates**, not only the ultimate form, but even the subject matter.

The technique of direct carving was a break with the nineteenth-century tradition in which the making of a clay model was considered the creative act and the work was then turned over to studio assistants to be cast in plaster or bronze or carved in marble. Neoclassical sculptors seldom held a mallet or chisel in their own hands, readily conceding that the assistants they employed were far better than they were at carving the finished marble.

With the turn-of-the-century Crafts movement and the discovery of nontraditional sources of inspiration, such as wooden African figures and masks, there arose a new urge for hands-on, personal execution of art and an interaction with the medium. Even as early as the 1880's and 1890's, nonconformist European artists were attempting direct carving. By the second decade of the twentieth century, Americans — Laurent and Zorach most notably — had adopted it as their primary means of working. Born in France, Robert Laurent (1890-1970) was a prodigy who received his education in the United States. In 1905 he was sent to Paris as an apprentice to an art dealer, and in the years that followed he **witnessed** the birth of Cubism, discovered primitive art, and learned the techniques of woodcarving from a frame maker.

Back in New York City by 1910, Laurent began carving pieces such as *The Priestess*, which reveals his fascination with African, pre-Columbian, and South Pacific art. Taking a walnut plank, the sculptor carved the expressive, stylized design. It is one of the earliest examples of direct carving in American sculpture. The plank's form dictated the rigidly frontal view and the low relief. Even its irregular shape must have appealed to Laurent as **a break with** a long-standing tradition that required a sculptor to work within a perfect rectangle or square.

**1. The word “medium” in line 45 could be used to refer to**

- (A) stone or wood      (B) mallet and chisel      (C) technique      (D) principle

**2. What is one of the fundamental principles of direct carving?**

- (A) A sculptor must work with talented assistants.  
(B) The subject of a sculpture should be derived from classical stories.  
(C) The material is an important element in a sculpture.  
(D) Designing a sculpture is a more creative activity than carving it.

3. The word “dictates” in line 7 is closest in meaning to

- (A) reads aloud      (B) determines      (C) includes      (D) records

4. How does direct carving differ from the nineteenth-century tradition of sculpture?

- (A) Sculptors are personally involved in the carving of a piece.  
(B) Sculptors find their inspiration in neoclassical sources.  
(C) Sculptors have replaced the mallet and chisel with other tools.  
(D) Sculptors receive more formal training.

5. The word “witnessed” in line 20 is closest in meaning to

- (A) influenced      (B) studied      (C) validated      (D) observed

6. Where did Robert Laurent learn to carve?

- (A) New York      (B) Africa      (C) The South Pacific      (D) Paris

7. The phrase “a break with” in line 26 is closest in meaning to

- (A) a destruction of      (B) a departure from      (C) a collapse of      (D) a solution to

8. The passage suggests that the piece titled *The Priestess* has all of the following characteristics EXCEPT:

- (A) The design is stylized.  
(B) It is made of marble.  
(C) The carving is not deep.  
(D) It depicts the front of a person.

**Passage 2:**

Birds that feed in flocks commonly retire together into roosts. The reasons for roosting communally are not always obvious, but there are some likely benefits.

In winter especially, it is important for birds to keep warm at night and **conserve** precious food reserves. One way to do this is to find a sheltered roost. Solitary roosters shelter in dense vegetation or enter a cavity - horned larks dig holes in the ground and ptarmigan burrow into snow banks - but the effect of sheltering is **magnified** by several birds huddling together in the roosts, as wrens, swifts, brown creepers, bluebirds, and anis do. Body contact reduces the surface area exposed to the cold air, so the birds keep each other warm. Two **kinglets** huddling together were found to reduce their heat losses by a quarter and three together saved a third of their heat.

The second possible benefit of communal roosts is that they act as “information centers.” During the day, parties of birds will have spread out to **forage** over a very large area. When they return in the evening some will have fed well, but others may have found little to eat. Some investigators have observed that when the birds set out again next morning, those birds that did not feed well on the previous day appear to follow those that did. The behavior of common and lesser kestrels may illustrate different feeding behaviors of similar birds with different roosting habits. The common kestrel hunts vertebrate animals in a small, familiar hunting ground, whereas the very

similar lesser kestrel feeds on insects over a large area. The common kestrel roosts and hunts alone, but the lesser kestrel roosts and hunts in flocks, possibly so one bird can learn from others where to find insect swarms.

Finally, there is safety in numbers at communal roosts since there will always be a few birds awake at any given moment to give the alarm. But this increased protection is partially **counteracted** by the fact that mass roosts attract predators and are especially vulnerable if **they** are on the ground. Even those in trees can be attacked by birds of prey. The birds on the edge are at greatest risk since predators find it easier to catch small birds perching at the margins of the roost.

**9. What does the passage mainly discuss?**

- (A) How birds find and store food
- (B) How birds maintain body heat in the winter
- (C) Why birds need to establish territory
- (D) Why some species of birds nest together

**10. The word “conserve” in line 3 is closest in meaning to**

- (A) retain
- (B) watch
- (C) locate
- (D) share

**11. Ptarmigan keep warm in the winter by**

- (A) Huddling together on the ground with other birds
- (B) Building nests in trees
- (C) Burrowing into dense patches of vegetation

(D) digging tunnels into the snow

**12. The word “magnified” in line 6 is closest in meaning to**

- (A) caused
- (B) modified
- (C) intensified
- (D) combined

**13. The author mentions kinglets in line 8 as an example of birds that**

- (A) protect themselves by nesting in holes
- (B) nest with other species of birds
- (C) nest together for warmth
- (D) usually feed and nest in pairs

**14. The word “forage” in line 12 is closest in meaning to**

- (A) fly
- (B) assemble
- (C) feed
- (D) rest

**15. Which of the following statements about lesser and common kestrels is true?**

- (A) The lesser kestrel and the common kestrel have similar diets.
- (B) The lesser kestrel feeds sociably but the common kestrel does not.
- (C) The common kestrel nests in larger flocks than does the lesser kestrel.
- (D) The common kestrel nests in trees; the lesser kestrel nests on the ground.

**16. The word “counteracted” in line 23 is closest in meaning to**

- (A) suggested
- (B) negated
- (C) measured
- (D) shielded

**17. Which of the following is NOT mentioned in the passage as an advantage derived by birds that huddle together while sleeping?**

- (A) Some members of the flock warn others of impending dangers.
- (B) Staying together provides a greater amount of heat for the whole flock
- (C) Some birds in the flock function as information centers for others who are looking for food.
- (D) Several members of the flock care for the young.

**18. Which of the following is a disadvantage of communal roosts that is mentioned in the passage?**

- (A) Diseases easily spread among the birds.
- (B) Groups are more attractive to predators than individual birds.
- (C) Food supplies are quickly depleted.
- (D) Some birds in the group will attack the others.

**19. The word “they” in line 23 refers to**

- (A) a few birds
- (B) mass roosts
- (C) predators
- (D) trees

**Passage 3:**

Before the mid-nineteenth century, people in the United States ate most foods only **in season**. Drying, smoking, and salting could preserve meat for a short time, but the availability of fresh meat, like that of fresh milk, was very limited; there was no way to **prevent** spoilage. But in 1810 a French inventor named Nicolas Appert developed the cooking-and-sealing process of canning. And in the 1850's an American named Gail Borden developed a means of condensing and preserving milk. Canned goods and condensed milk became more common during the 1860's, but supplies remained low because cans had to be made by hand. By 1880, however, inventors had fashioned stamping and soldering machines that mass-produced cans from tinplate. Suddenly all kinds of food could be preserved and bought at all times of the year.

Other trends and inventions had also helped make it possible for Americans to vary their daily diets. Growing urban populations created demand that encouraged fruit and vegetable farmers to raise more produce. Railroad refrigerator cars enabled growers and meat packers to ship perishables great distances and to preserve **them** for longer periods. Thus, by the 1890's, northern city dwellers could enjoy southern and western strawberries, grapes, and tomatoes, previously available for a month at most, for up to six months of the year. In addition, increased use of iceboxes enabled families to store perishables. An easy means of producing ice commercially had been invented in the 1870's, and by 1900 the nation had more than two thousand commercial ice plants, most of which made home deliveries. The icebox became a **fixture** in most homes and remained so until the mechanized refrigerator replaced it in the 1920's and 1930's.

Almost everyone now had a more diversified diet. Some people continued to eat mainly foods that were heavy in starches or carbohydrates, and not everyone could afford meat. **Nevertheless**, many families could take advantage of previously unavailable fruits, vegetables, and dairy products to achieve more varied fare.

**20. What does the passage mainly discuss?**

- (A) Causes of food spoilage
- (B) Commercial production of ice
- (C) Inventions that led to changes in the American diet

(D) Population movements in the nineteenth century

**21. The phrase “in season” in line 2 refers to**

- (A) a kind of weather
- (B) a particular time of year
- (C) an official schedule
- (D) a method of flavoring food

**22. The word “prevent” in line 4 is closest in meaning to**

- (A) estimate
- (B) avoid
- (C) correct
- (D) confine

**23. During the 1860's, canned food products were**

- (A) unavailable in rural areas
- (B) shipped in refrigerator cars
- (C) available in limited quantities
- (D) a staple part of the American diet

**24. It can be inferred that railroad refrigerator cars came into use**

- (A) before 1860
- (B) before 1890
- (C) after 1900
- (D) after 1920

**25. The word “them” in line 14 refers to**

- (A) refrigerator cars
- (B) perishables
- (C) growers
- (D) distances

**26. The word “fixture” in line 20 is closest in meaning to**

- (A) luxury item
- (B) substance
- (C) commonplace object
- (D) mechanical device

**27. The author implies that in the 1920's and 1930's home deliveries of ice**

- (A) decreased in number
- (B) were on an irregular schedule
- (C) increased in cost
- (D) occurred only in the summer

**28. The word “Nevertheless” in line 24 is closest in meaning to**

- (A) therefore
- (B) because
- (C) occasionally
- (D) however

**29. The author implies that one of the following types of food preservation was NOT mentioned in the passage:**

- (A) Drying
- (B) Canning
- (C) Cold storage
- (D) Chemical additives

**30. Which of the following statements is supported by the passage?**

- (A) Tin cans and iceboxes helped to make many foods more widely available.
- (B) Commercial ice factories were developed by railroad owners.
- (C) Most farmers in the United States raised only fruits and vegetables.
- (D) People who lived in cities demanded home delivery of foods

**Passage 4:**

The ability of falling cats to right themselves in midair and land on their feet has been a source of wonder for ages. Biologists long regarded it as an example of adaptation by natural selection, but for physicists it bordered on the miraculous. Newton's laws of motion assume that the total amount of spin of a body cannot change unless an external torque speeds it up or slows it down. If a cat has no spin when it is released and experiences no external torque, it ought not to be able to twist around as it falls.

In the speed of its execution, the righting of a tumbling cat resembles a magician's trick. The gyrations of the cat in midair are too fast for the human eye to follow, so the **process** is obscured. Either the eye must be speeded up, or the cat's fall slowed down for the phenomenon to be observed. A century ago the former was accomplished by means of high-speed photography using equipment now available in any pharmacy. But in the nineteenth century the capture on film of a falling cat constituted a scientific experiment.

The experiment was described in a paper presented to the Paris Academy in 1894. Two sequences of twenty **photographs** each, one from the side and one from behind, show a white cat in the act of righting itself. Grainy and quaint though they are, the photos show that the cat was dropped upside down, with no initial spin, and still landed on its feet. Careful analysis of the photos reveals the secret; as the cat **rotates** the front of its body clockwise, the rear and tail twist counterclockwise, so that the total spin remains zero, in perfect accord with Newton's laws. Halfway down, the cat pulls in its legs before reversing its twist and then extends them again, with the desired end result.

The explanation was that while nobody can acquire spin without torque, a flexible one can **readily** change its orientation, or phase. Cats know this instinctively, but scientists could not be sure how it happened until they increased **the speed of their perceptions a thousandfold**.

**31. What does the passage mainly discuss?**

- (A) The explanation of an interesting phenomenon
- (B) Miracles in modern science
- (C) Procedures in scientific investigation
- (D) The differences between biology and physics

**32. The word "process" in line 9 refers to**

- (A) the righting of a tumbling cat
- (B) the cat's fall slowed down
- (C) high-speed photography
- (D) a scientific experiment

**33. Why are the photographs mentioned in line 14 referred to as an "experiment"?**

- (A) The photographs were not very clear.

- (B) The purpose of the photographs was to explain the process.
- (C) The photographer used inferior equipment.
- (D) The photographer thought the cat might be injured.

**34. Which of the following can be inferred about high-speed photography in the late 1800's?**

- (A) It was a relatively new technology.
- (B) The necessary equipment was easy to obtain.
- (C) The resulting photographs are difficult to interpret.
- (D) It was not fast enough to provide new information.

**35. The word “rotates” in line 17 is closest in meaning to**

- (A) drops
- (B) turns
- (C) controls
- (D) touches

**36. According to the passage, a cat is able to right itself in midair because it is**

- (A) frightened
- (B) small
- (C) intelligent
- (D) flexible

**37. The word “readily” in line 22 is closest in meaning to**

- (A) only
- (B) easily
- (C) slowly
- (D) certainly

**38. How did scientists increase “the speed of their perceptions a thousandfold” (line 23)?**

- (A) By analyzing photographs
- (B) By observing a white cat in a dark room
- (C) By dropping a cat from a greater height
- (D) By studying Newton's laws of motion

**Passage 5:**

The changing profile of a city in the United States is apparent in the shifting definitions used by the United States Bureau of the Census. In 1870 the census officially **distinguished** the nation's “urban” from its “rural” population for the first time. “Urban population” was defined as persons living in towns of 8,000 inhabitants or more. But after 1900 it meant persons living in incorporated places having 2,500 or more inhabitants.

Then, in 1950 the Census Bureau radically changed its definition of “urban” to take account of the new vagueness of city boundaries. In addition to persons living in incorporated units of 2,500 or more, the census now included **those** who lived in unincorporated units of that size, and also all persons living in the densely settled urban

fringe, including both incorporated and unincorporated areas located around cities of 50,000 inhabitants or more. Each such unit, conceived as an integrated economic and social unit with a large population nucleus, was named a Standard Metropolitan Statistical Area (SMSA). Each SMSA would contain at least (a) one central city with 50,000 inhabitants or more or (b) two cities having shared boundaries and **constituting**, for general economic and social purposes, a single community with a combined population of at least 50,000, the smaller of **which** must have a population of at least 15,000. Such an area included the county in which the central city is located, and adjacent counties that are found to be metropolitan in character and economically and socially integrated with the county of the central city. By 1970, about two-thirds of the population of the United States was living in these urbanized areas, and of that figure more than half were living outside the central cities.

While the Census Bureau and the United States government used the term SMSA (by 1969 there were 233 of them), social scientists were also using new terms to describe the elusive, vaguely defined areas reaching out from what used to be simple “towns” and “cities”. A host of terms came into use: “metropolitan regions,” “polynucleated population groups,” “conurbations,” “metropolitan clusters,” “megalopolises,” and so on.

**39. What does the passage mainly discuss?**

- (A) How cities in the United States began and developed
- (B) Solutions to overcrowding in cities
- (C) The changing definition of an urban area
- (D) How the United States Census Bureau conducts a census

**40. According to the passage, the population of the United States was first classified as rural or urban in**

- (A) 1870
- (B) 1900
- (C) 1950
- (D) 1970

**41. The word “distinguished” in line 3 is closest in meaning to**

- (A) differentiated
- (B) removed
- (C) honored
- (D) protected

**42. Prior to 1900, how many inhabitants would a town have to have before being defined as urban?**

- (A) 2,500
- (B) 8,000
- (C) 15,000
- (D) 50,000

**43. According to the passage, why did the Census Bureau revise the definition of urban in 1950?**

- (A) City borders had become less distinct.
- (B) Cities had undergone radical social change.
- (C) Elected officials could not agree on an acceptable definition.
- (D) New businesses had relocated to larger cities.

**44. The word “those” in line 8 refers to**

- (A) boundaries
- (B) persons
- (C) units
- (D) areas

**45. The word “constituting” in line 14 is closest in meaning to**

- (A) located near

- (B) determined by
- (C) calling for
- (D) making up

**46. The word “which” in line 16 refers to a smaller**

- (A) population
- (B) city
- (C) character
- (D) figure

**47. Which of the following is NOT true of an SMSA?**

- (A) It has a population of at least 50,000
- (B) It can include a city's outlying regions.
- (C) It can include unincorporated regions.
- (D) It consists of at least two cities.

**48. By 1970, what proportion of the population in the United States did NOT live in an SMSA?**

- (A) 3/4
- (B) 2/3
- (C) 1/2
- (D) 1/3

**49. The Census Bureau first used the term “SMSA” in**

- (A) 1900
- (B) 1950
- (C) 1969
- (D) 1970

**50. Where in the passage does the author mention names used by social scientists for an urban area?**

- (A) Lines 4-5
- (B) Line 6-7
- (C) Line 18-20
- (D) Line 24-25

## **Appendix D: The writing test**

**Instructions:** Please write a well-structured essay on one of the following topics, not exceeding 22 lines.

### **Pre-test:**

1. In the future, students may have the choice of studying at home by using technology such as computers or studying at traditional schools. Which would you prefer? Use reasons and specific details to explain your choice
2. Discuss the impact of education quality on society development.

### **Post-test:**

1. If you could make one important change in a school that you attended, what change would you make? Use reasons and specific examples to support your answer.
2. Some students prefer to study alone. Others prefer to study with a group of students. Which do you prefer? Use specific reasons and examples to support your answer.

## Appendix E: Questionnaire 1/ Experimental subjects' characteristics

This questionnaire seeks to determine students' characteristics: their profile, learning styles and learning needs.

### a. Experimental subjects' profile in relation to ICT use

Dear students,

You are kindly requested to answer the questions, and tick in the right box (es).

1. As a student, do you use technology in education? YES  NO
2. What kind of technological devices do you use? (Please tick all that apply)

Smart phone  Desktop computer  Laptop  tablet  Other: .....

3. How do you rate your digital skills?  
Very Good  Good  Fair  Low

4. Do you have access to the internet? YES  NO

5. If yes, what type of internet connection do you have?  
3G  4G  ADSL  Other: .....

6. Where do you prefer to use the internet for online learning?  
At University  At home  At an internet café

### b. Identifying Experimental subjects' learning styles

This section has been designed to help you identify the way(s) you learn best – the way(s) you prefer to learn.

#### Instructions:

Decide whether you agree or disagree with each statement. And then indicate whether you:

**Strongly Agree (SA)    Agree (A)    Undecided (U)    Disagree (D)    Strongly Disagree (SD)**

Please respond to each statement quickly, without too much thought. Try not to change your responses after you choose them. Please answer all the questions.

Items	SA	A	U	D	SD
1. When the teacher tells me the instructions I understand better.					
2. I prefer to learn by doing something in class.					
3. I get more work done when I work with others.					

4. I learn more when I study with a group of students.					
5. In class, I learn best when I work with my peers.					
6. I learn better by reading what the teacher writes on the board.					
7. When someone tells me how to do something in class, I learn it better.					
8. When I do things in class, I learn better.					
9. I remember things I have heard in class better than things I have read.					
10. When I read instructions, I remember them better.					
11. I learn more when I take notes.					
12. I understand better when I read instructions.					
13. When I study alone, I remember things better.					
14. I learn more when I make something for a class project.					
15. I enjoy learning in class by doing tasks and activities.					
16. I learn better when I make drawings as I study.					
17. I learn better in class when the teacher gives a lecture.					
18. When I work alone, I learn better.					
19. I understand things better in class when I participate in group discussion.					
20. I learn better in class when I listen to someone.					
21. I enjoy working on an assignment with two or three classmates.					
22. When I do something, I remember what I have learned better.					
23. I prefer to study with others.					
24. I learn better by reading than by listening to someone.					
25. I enjoy making something for a class project.					
26. I learn best in class when I can participate in related activities.					
27. In class, I work better when I work alone.					
28. I prefer working on tasks by myself.					

29. I learn more by reading textbooks than by listening to lectures.					
30. I prefer to work by myself.					

(Adapted from Reid, 1995)

**c. Determining experimental subjects' learning needs**

This section helps you to identify your learning needs in relation to reading and writing skills.

Regarding the reading skill, please indicate how often you have difficulty with each of the following. Please circle the appropriate choice:

Never (1) Sometimes (2) Often (3)

Items	Never	Sometimes	Often
1. Understanding the main points of a text.	1	2	3
2. Reading a text quickly in order to establish a general idea of the content (Skimming)	1	2	3
3. Reading a text slowly and carefully in order to understand the details of the text.	1	2	3
4. Looking through a text in order to locate specific information. (Scanning)	1	2	3
5. Guessing unknown words from the context.	1	2	3
6. Understanding text organization.	1	2	3
7. Understanding specialist vocabulary in a text.	1	2	3
8. Speed reading.	1	2	3
9. Reading in order to respond critically.	1	2	3
10. Understanding a writer's purpose.	1	2	3
11. General comprehension.	1	2	3
12. Locating referents.	1	2	3
13. Making inferences or drawing conclusions	1	2	3
14. Other ( Please specify and rate)	1	2	3
.....			

With regard to the writing skill, please indicate how often you have problems with the skill: never (1) sometimes (2) often (3)

Items	Never	Sometimes	Often
1. Using correct punctuation and spelling.	1	2	3
2. Structuring correct sentences.	1	2	3
3. Using appropriate vocabulary.	1	2	3
4. Organizing paragraphs.	1	2	3
5. Expressing ideas appropriately.	1	2	3
6. Developing ideas.	1	2	3
7. Addressing the topic.	1	2	3
8. Adopting appropriate tone and style.	1	2	3
9. Following instructions and directions	1	2	3
10. Evaluating and revising your writing.	1	2	3
11. Completing written tasks (exams, tests) within the time available.	1	2	3
12. Mastering grammar rules (use of tenses, articles, etc)	1	2	3
13. Other (Please specify and rate ) .....			

## Appendix F: Questionnaire 2/ Awareness of reading and writing processes

This questionnaire aims at investigating the impact of using collaborative blended learning on enhancing students' awareness of reading and writing processes.

### a. The writing process:

In this section, you will find statements about the different stages of writing: before writing, while writing, and when revising. Please read each statement and circle the number indicating how true of you the statement is.

1. Never true of me    2. Somewhat true of me    3. Usually true of me  
4. Always true of me

<b>Before I start writing a paragraph in English ...</b>	<b>Never True</b>	<b>Somewhat True</b>	<b>Usually True</b>	<b>Always True</b>
1. Before I start writing, I read the requirements.	1	2	3	4
2. I start writing without having a written or mental plan.	1	2	3	4
3. I think about what I want to write and hand a plan in mind, but not on paper.	1	2	3	4
4. I note down words and short notes to the topic.	1	2	3	4
5. I write an outline for my paper	1	2	3	4

<b>When writing in English ...</b>	<b>Never True</b>	<b>Somewhat True</b>	<b>Usually True</b>	<b>Always True</b>
6. I start with the thesis statement.	1	2	3	4
7. I stop after each sentence and read it again.	1	2	3	4
8. I stop after a few sentences.	1	2	3	4
9. I reread what I have written to get ideas how to continue.	1	2	3	4
10. I go back to my outline and make some changes in it.	1	2	3	4

11. I check grammar and vocabulary.	1	2	3	4
12. I simplify what I want to write if I don't know how to express my ideas in English.	1	2	3	4
13. I ask somebody to help me out when I have problems while writing.	1	2	3	4
14. If I don't know a word in English, I stop writing and look up the word in the dictionary.	1	2	3	4

<b>When revising ...</b>	<b>Never True</b>	<b>Somewhat True</b>	<b>Usually True</b>	<b>Always True</b>
15. I read my text aloud	1	2	3	4
16. I only read what I have written when I have finished the whole paper.	1	2	3	4
17. When I have written my paper, I hand it in without reading it.	1	2	3	4
18. I make changes in vocabulary.	1	2	3	4
19. I make changes in sentence structure.	1	2	3	4
20. I make changes in the content or ideas.	1	2	3	4
21. I check if my paragraph/essay matches the requirements.	1	2	3	4
22. I compare my paper with the essays written by my classmates on the same topic.	1	2	3	4
23. I show my text to my peer and ask for his opinion.	1	2	3	4
24. I ask my peer to evaluate my essay and to check grammar mistakes, spelling, punctuation and word choice.	1	2	3	4
25. I check my mistakes after I get the	1	2	3	4

paper with feedback, and try to learn from them.				
26. I use my mobile phone or any digital device to check spelling, vocabulary or grammar.	1	2	3	4

(Adapted from Petric & Czarl, 2003)

**b. The reading process:**

**Instructions:** Think about what types of strategies you can rely on to help you understand a reading text better before, during, and after you read it. Please read each of the lists of four statements and decide which one of them would help *you* the most. Please circle the letter of the statement you choose.

**I. In each set of four, choose the one statement which tells a good thing to do to help you understand a text better before you read it.**

**1. Before I begin reading, it's a good idea to...**

- A. See how many paragraphs the text has.
- B. Look up the difficult words in the dictionary.
- C. Make some guesses about what the text will be about.
- D. Think about what ideas the author has tackled so far in the topic.

**2. Before I begin reading, it's a good idea to...**

- A. Look at the pictures to see what the text is about.
- B. Decide how long it will take me to read the text.
- C. Extract the words I don't know.
- D. Check to see if the topic of the text is adequate.

**3. Before I begin reading, it's a good idea to:**

- A. Ask someone to read the text to me.
- B. Read the title to see what the text might be about.
- C. Check to see if most of the words have long or short vowels in them.
- D. Check to see if the visuals are related to the title.

**4. Before I begin reading, it's a good idea to:**

- A. Check to see that no paragraphs are missing.
- B. Make a list of the words I'm not sure about.
- C. Use the title and pictures to help me make guesses about what the text will be about.
- D. Read the last sentence so I will know what the text tackles.

**5. Before I begin reading, it's a good idea to:**

- A. Decide on why I am going to read the text.
- B. Check the difficult words to help me make guesses about what the text will be about.
- C. Reread some parts to see if I can figure out what is happening if things aren't making sense.

D. Ask for help with the difficult words.

**6. Before I begin reading, it's a good idea to:**

A. Retell all of the main points of the text.

B. Ask myself questions that I would like to have answered in the text.

C. Think about the meanings of the words which have more than one meaning.

D. Look through the text to find all of the words with three or more syllables.

**7. Before I begin reading, it's a good idea to:**

A. Check to see if I have read this text before.

B. Use my questions and guesses as a reason for reading the text.

C. Make sure I can pronounce all the words before I start reading.

D. Think of a better title for the text.

**8. Before I begin reading, it's a good idea to:**

A. Think of what I already know about the things I see in the pictures.

B. See how many paragraphs are in the text.

C. Choose the best paragraph of the text to read again.

D. Read the text aloud to someone.

**9. Before I begin reading, it's a good idea to:**

A. Practice reading the text aloud.

B. Retell the main points to make sure I can remember the text.

C. Think of what ideas might be tackled in the text.

D. Decide if I have enough time to read.

**10. Before I begin reading, it's a good idea to:**

A. Check to see if I am understanding the text so far.

B. Check to see if the words have more than one meaning.

C. Think about what I already know about the topic.

D. List all of the important details presented in the text.

**II. In each set of four, choose the one statement which tells a good thing to do to help you understand a text better while you are reading it.**

**11. While I'm reading, it's a good idea to:**

A. Read the text very slowly so that I will not miss any important parts.

B. Read the title to see what the text is about.

C. Check to see if the pictures are related to the text.

D. Check to see if the text is making sense by seeing if I can tell what's happened so far.

**12. While I'm reading, it's a good idea to:**

A. Stop to retell the main points of the text in order to check my understanding.

B. Read the text quickly so that I can focus.

C. Read only the introduction and the conclusion of the text to find out what it is about.

D. Skip the parts that are too difficult for me.

**13. While I'm reading, it's a good idea to:**

A. Look all of the difficult words up in the dictionary.

B. Put the text away.

**C.** Keep thinking about the title and the pictures to help me decide what is going to happen next.

D. Keep track of how many paragraphs I have left to read.

**14. While I'm reading, it's a good idea to:**

A. Keep track of how long it is taking me to read the text.

**B.** Check to see if I can answer any of the questions I asked before I started reading.

C. Read the title to see what the text is going to be about.

D. Add the missing details to the pictures.

**15. While I'm reading, it's a good idea to:**

A. Have someone read the text aloud to me.

B. Keep track of how many paragraphs I have read.

C. List the text's main points.

**D.** Check to see if my guesses are right or wrong.

**16. While I'm reading, it's a good idea to:**

A. Check to see if the text is making sense.

**B.** Make a lot of guesses about the topic.

C. Not look at the pictures because they might be confusing.

D. Read the text aloud to someone.

**17. While I'm reading, it's a good idea to:**

**A.** Try to answer the questions I asked myself.

B. Try not to confuse what I already know with what I'm reading about.

C. Read the text silently.

D. Check to see if I am pronouncing the new vocabulary words correctly.

**18. While I'm reading, it's a good idea to:**

**A.** Try to see if my guesses are going to be right or wrong.

B. Reread to be sure I haven't missed any of the words.

C. Decide on why I am reading the text.

D. List what happened first, second, third, and so on.

**19. While I'm reading, it's a good idea to:**

A. See if I can recognize the new vocabulary words.

B. Be careful not to skip any paragraphs of the text.

C. Check to see how many of the words I already know.

**D.** Keep thinking of what I already know about the ideas and information in the text to help me decide if the topic is familiar to me.

**20. While I'm reading, it's a good idea to:**

**A.** Reread some parts or read ahead to see if I can figure out what the text is about if things aren't making sense.

B. Take my time reading so that I ensure that I understand the ideas presented in the text.

C. Change the conclusion so that it makes sense.

D. Check to see if there are enough pictures to help make the text ideas clear.

**III. In each set of four, choose the one statement which tells a good thing to do to help you understand a text better after you have read it.**

**21. After I've read the text it's a good idea to:**

- A. Count how many paragraphs I read with no mistakes.
- B. Check to see if there were enough pictures to go with the text to make it interesting.
- C. Check to see if I met my purpose for reading the text.
- D. Underline the important ideas or information presented in the text.

**22. After I've read the text it's a good idea to:**

- A. Underline the main idea.
- B. Retell the main points of the whole text so that I can check to see if I understood it.
- C. Read the text again to be sure I said all of the words right.
- D. Practice reading the text aloud.

**23. After I've read the text it's a good idea to:**

- A. Read the title and look over the text to see what it is about.
- B. Check to see if I skipped any of the vocabulary words.
- C. Think about what made me make good or bad predictions.
- D. Make a guess about what will the text discuss.

**24. After I've read the text it's a good idea to:**

- A. Look up the difficult words in the dictionary.
- B. Read the best parts aloud.
- C. Have someone read the text aloud to me.
- D. Think about if my predictions are met after finishing reading the text or not.

**25. After I've read the text it's a good idea to:**

- A. I relate my predictions to the topic I have read.
- B. reread the text silently.
- C. Look over the text title and pictures to see what the text will tackle.
- D. Make a list of the points I understood the most.

**(Adapted from Schmitt, 1990)**

Note: Underlined responses indicate reading strategy awareness.

## Appendix G: Questionnaire 3/ Students' perceptions of CBL

This questionnaire aims at exploring students' perceptions of using collaborative blended learning

### Instructions:

This part seeks to find out your perceptions of using collaborative blended learning for developing your literacy skills. Please read each statement and circle the appropriate choice.

Almost never =1 Seldom= 2 Sometimes=3 Often=4 Almost always= 5

Items	Almost Never	Seldom	Sometimes	Often	Almost Always
I can access the learning activities at times convenient to me.	1	2	3	4	5
The online material is available at locations suitable for me.	1	2	3	4	5
I can use time saved in travelling and on campus class attendance for study and other commitments.	1	2	3	4	5
I am allowed to study at my own pace to achieve learning objectives.	1	2	3	4	5
I decide how much I want to learn in a given period.	1	2	3	4	5
I decide when I want to learn.	1	2	3	4	5
The flexibility allows me to meet my learning goals.	1	2	3	4	5
The flexibility allows me to explore my own areas of interest.	1	2	3	4	5

Items	Almost Never	Seldom	Sometimes	Often	Almost Always
I communicate with my peers in this subject electronically by using email, forum, and chat.	1	2	3	4	5
In this learning environment, I have to be self disciplined in order to learn successfully.	1	2	3	4	5
I can contact and ask my teacher to re-explain what I do not understand.	1	2	3	4	5
I can ask my classmates what I do not understand.	1	2	3	4	5
Other students respond promptly to my questions.	1	2	3	4	5

I regularly participate in self-evaluations.	1	2	3	4	5
I regularly participate in peer-evaluations.	1	2	3	4	5
My classmates supported and encouraged me to learn.	1	2	3	4	5

<b>Items</b>	<b>Almost Never</b>	<b>Seldom</b>	<b>Sometimes</b>	<b>Often</b>	<b>Almost Always</b>
Collaborative blended learning enables me to interact with my classmates and the teacher using e-mail or instant messaging.	1	2	3	4	5
I felt a sense of satisfaction and achievement about this blended learning environment.	1	2	3	4	5
I enjoy learning in this environment.	1	2	3	4	5
I could learn more in this blended learning environment.	1				
It is easy to work collaboratively with other classmates involved in a group for a project.	1	2	3	4	5
It is easy to work collaboratively with other students involved in a group project.	1	2	3	4	5
Collaborative blended learning environment held my interest throughout my course of study.	1	2	3	4	5
I felt a sense of boredom towards the end of my course of study.	1	2	3	4	5

<b>Items</b>	<b>Almost Never</b>	<b>Seldom</b>	<b>Sometimes</b>	<b>Often</b>	<b>Almost Always</b>
The learning objectives are clearly stated in each lesson.	1	2	3	4	5
The organization of each lesson is easy to follow.	1	2	3	4	5
The structure keeps me focused on what is to be learned.	1	2	3	4	5
Expectations of assignments are clearly stated in my unit.	1	2	3	4	5
Activities are planned carefully.	1	2	3	4	5
The online subject content is appropriate for delivery on the Web.	1	2	3	4	5
The presentation of the subject content is clear.	1	2	3	4	5

The quizzes in the online learning platform enhance my reading and writing skills.	1	2	3	4	5
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**(Adapted from Chang & Fisher, 2003)**

## Appendix H: Rating scale for the writing test

Score	Description	Score	Description
<b>6 points</b>	<b>An essay at this level:</b> <ul style="list-style-type: none"> <li>- Effectively addresses the writing task</li> <li>- Is well organized and well-developed</li> <li>- Uses clearly appropriate details to support a thesis or illustrate ideas</li> <li>- Displays consistent facility in the use of language</li> <li>- Demonstrates syntactic variety and appropriate word choice</li> </ul>	<b>3 points</b>	<b>An essay at this level may reveal one or more of the following weaknesses:</b> <ul style="list-style-type: none"> <li>- Inadequate organization or development</li> <li>- Inappropriate or insufficient details to support or illustrate generalizations</li> <li>- A noticeably inappropriate choice of words or word forms</li> <li>- An accumulation of errors in sentence structure and/or usage</li> </ul>
<b>5 points</b>	<b>An essay at this level</b> <ul style="list-style-type: none"> <li>- May address some parts of the task more effectively than others.</li> <li>- Is generally well-organized and developed</li> <li>- Uses details to support a thesis or illustrate an idea.</li> <li>- Displays facility in the use of the language.</li> <li>- Demonstrates some syntactic variety and range of vocabulary.</li> </ul>	<b>2 points</b>	<b>An essay at this level may reveal one or more of the following weaknesses:</b> <ul style="list-style-type: none"> <li>- Serious disorganization or under-development</li> <li>- Little or no detail, or irrelevant specifics</li> <li>- Serious and frequent errors in sentence structure or usage</li> <li>- Serious problems with focus</li> </ul>
<b>4 points</b>	<b>An essay at this level</b> <ul style="list-style-type: none"> <li>- Addresses the writing topic adequately but may slight parts of the task.</li> <li>- Is adequately organized and developed</li> <li>- Uses some details to support a thesis or illustrate an idea</li> <li>- Demonstrates adequate but possibly inconsistent facility with syntax and usage.</li> <li>- May contain some errors that occasionally obscure meaning.</li> </ul>	<b>1 point</b>	<b>An essay at this level:</b> <ul style="list-style-type: none"> <li>- May be incoherent</li> <li>- May be undeveloped</li> <li>- May contain severe and persistent writing errors</li> </ul>
		<b>0 point</b>	<b>An essay will be rated 0 if it</b> <ul style="list-style-type: none"> <li>- Contains no response</li> <li>- Merely copies the topic</li> <li>- Is off-topic, is written in a foreign language or consists only of keystroke characters.</li> </ul>

(Adopted from Lougheed, 2004)

**Appendix I: Rubric for assessing students' writing skills**

Writing skills		Low	Needs improvement	Good	Very good
Organizational skills	Organisation	<p>The paragraphs of the essay are not indented. The essay is not double-spaced, and the title is missing.</p> <p>The introductory paragraph is not relevant to the topic. The thesis statement does not name the topic and does not preview what will be discussed. There is no conclusion.</p>	<p>The paragraphs of the essay indented. The essay is not double-spaced and the essay has no title.</p> <p>The student has an interesting introductory paragraph, but the connection to the topic is not clear. The thesis statement outlines some or all of the main ideas to be discussed but does not name the topic. The student's position is restated within the closing paragraph, but not near the beginning.</p>	<p>The paragraphs of the essay are indented. The essay has a title. The essay is not double-spaced.</p> <p>The introductory paragraph has a hook or attention grabber, but it is weak for the audience. The thesis statement names the topic of the essay. The conclusion is recognizable.</p>	<p>The essay has a title, is indented and double-spaced.</p> <p>The introductory paragraph has a strong hook or attention getter. The thesis statement names the topic of the essay and outlines the main points to be discussed. The conclusion is strong.</p>
	Coherence	<p>Many of the supporting details or arguments are not in an expected or logical order, distracting the reader and making the essay seem very confusing.</p>	<p>A few of the supporting details or arguments are not in an expected or logical order, distracting the reader and making the essay seem a little confusing.</p>	<p>Arguments and supporting details are provided in a fairly logical order that makes it reasonably easy to follow the student's train of thought.</p>	<p>Arguments are provided in a logical order that makes it easy and interesting to follow the student's train of thought.</p>

	<b>Appropriate Details</b>	Student lacks relevant details.	Student writes some details, but they are not well-elaborated.	Student writes elaborated details.	Student writes elaborated details and backs them up with examples.
	<b>Relevance</b>	The essay is out of topic.	Student partially discusses the topic.	Student sticks to the topic of the essay.	Student displays full command of the topic discussed.
<b>Visual Skills</b>	<b>Punctuation</b>	Student makes several errors in capitalization and/or punctuation.	Student makes a few errors in capitalization and/or punctuation.	Student makes one or two errors in capitalization or punctuation, but the essay is still easy to read.	Student makes no errors in capitalization or punctuation, so the essay is exceptionally easy to read.
	<b>Spelling</b>	Student makes more than 4 errors in spelling that distract the reader from the content.	Student makes three or four errors in spelling that distract the reader from the content.	Student makes one or two errors in spelling that distract the reader from the content.	Student makes no errors in spelling that distract the reader from the content.
<b>Grammatical skills</b>	<b>Tenses</b>	Student makes more than 4 errors in employing tenses.	Student makes three or four errors in employing tenses.	Student makes one or two errors in tenses.	Student makes no errors in using tenses.
	<b>Subject-verb agreement</b>	Student makes more than four errors in subject-verb agreement.	Student makes three or four errors in subject-verb agreement.	Student makes one or two errors in subject-verb agreement.	Student makes no errors in subject-verb agreement.
	<b>Articles</b>	Student makes more than four errors in employing definite and indefinite articles.	Student makes three or four errors in employing definite and indefinite articles.	Student makes one or two errors in employing definite and indefinite articles.	Student makes no errors in employing definite and indefinite articles.

<b>Stylistic skills</b>	<b>Vocabulary</b>	Student uses basic vocabulary.	Student uses some vocabulary of the potential reader and uses arguments appropriate for that audience.	Student demonstrates a general understanding of the potential reader and uses vocabulary appropriate for that audience.	Student demonstrates a clear understanding of the potential reader and uses appropriate vocabulary and arguments. Student anticipates reader's questions and provides thorough answers appropriate for that audience.
	<b>Sentence Structure</b>	Most sentences are not well-constructed or varied.	Most sentences are well constructed, but there is no variation in structure.	Most sentences are well-constructed and there is some varied sentence structure in the essay.	All sentences are well-constructed with varied structure.

## **Appendix J: Syllabus of reading and writing (First year)**

### **Course objectives :**

Upon completion of the course, students are expected to meet the following learning objectives:

- Develop effective reading strategies : predicting, skimming, scanning, previewing a text, etc) and increase their vocabulary repertoire
- Reflect upon ideas and information in texts and use them to write different types of texts of different lengths (paragraph, short essay).
- Develop effective writing techniques for paragraph and essay writing: outlining, cohesion, coherence, unity, word order, organisation of ideas, topic sentence, transitions, etc)

### **Teaching method:**

\*Intensive Classroom Reading Session: during 20 min students read a 3-4 page text and answer a set of 20 comprehension questions. (Inspired by the TOEFL format.)

\*Intensive Classroom Writing Session: During 20 min, students answer a question given by the teacher by writing a paragraph of about 80 words. The students are given two texts of 6 lines each to reflect upon and use as information source (writing from reading).

### **Assessment method:**

For both S1 and S2 there is a test and an exam:

The mid-term test has the same format as the exam i.e. reading 08pts + writing 12pts (duration:3 hours).

\*Intensive Reading and Intensive Writing are both tools for continuous control and assessment of students' progress in reading and writing .Teachers can decide to give oral feedback only (no mark), or to integrate a mark in the test scores of both semesters. The final decision will be made by the teachers of the Formation Team .

S2 option: The Formation Team can also decide to evaluate good achievers on a research project. For eg: An essay /a research portfolio for the students who obtain a score of at least 12 out of 20 in S1 (reading and writing together). This project will allow good students to get a first experience with research and enhance their essay writing skills which are badly needed for the second year of the course. A mark on the project work would be an alternative to the test mark.

## Course outline : Semester 1

Week by week	Topics and activities
Week 1	Reading strategies: understanding and using information in different types of texts, and different contexts *Intensive Reading Session Phrases, clauses and sentences <b>*Intensive Classroom Writing Session.</b>
Week 2	Reading strategies: understanding and using information in different types of texts, and different contexts. *Intensive Classroom Reading Session: Phrases, clauses and sentences <b>*Intensive Classroom Writing Session</b>
Week 3	preview texts. Types of sentences (simple, compound, complex, compound-complex) .
Week 4	preview texts. Types of sentences (simple, compound, complex, compound-complex) .
Week 5	Skimming and scanning Coordination and subordination conjunctions
Week 6	Skimming and scanning Coordination and subordination conjunctions
Week 7	*Intensive Classroom Reading Session. -Topic sentences and main ideas <b>*Intensive Classroom Writing Session.</b> -Punctuation and capitals (+ revision of the previous sections)
Week 8	<b>Mid-term test</b>
Week 9	*Intensive Classroom Reading Session. -Topic sentences and main ideas <b>*Intensive Classroom Writing Session.</b> -Punctuation and capitals (+ revision of the previous sections)
Week 10	*Intensive Classroom Reading Session. -Topic sentences and main ideas <b>*Intensive Classroom Writing Session.</b> -Punctuation and capitals (+ revision of the previous sections)
Week 11	Text types and patterns of organization Pre-writing techniques (free writing, brainstorming, clustering, outlining)
Week 12	Text types and patterns of organization Pre-writing techniques (free writing, brainstorming, clustering, outlining)
Week 13	Text types and patterns of organization Pre-writing techniques (free writing, brainstorming, clustering, outlining)
Week 14	Layout (presentation of the work: title, margin, indentation...) *Intensive Classroom Writing Session.
Week 15	<b>Revision</b>
Week 16	<b>EXAM</b>

## Course Outline: Semester 2

Week by week	Topics and activities
	-Functions of the different parts of a text;

<b>Week 1</b>	*Intensive Classroom Reading Session - Comparison and contrast essay
<b>Week 2</b>	-Functions of the different parts of a text; *Intensive Classroom Reading Session. - Comparison and contrast essay. *Intensive Classroom Writing Session.
<b>Week 3</b>	-Functions of the different parts of a text; *Intensive Classroom Reading Session. Definition essay
<b>Week 4</b>	Fact and opinion *Intensive Classroom Reading Session. Definition essay
<b>Week 5</b>	Facts and opinions; *Intensive Classroom Reading Session. - Argumentative essay *Intensive Classroom Writing Session.
<b>Week 6</b>	Facts and opinions; *Intensive Classroom Reading Session. - Argumentative essay *Intensive Classroom Writing Session.
<b>Week 7</b>	<b>Intensive Classroom Reading Session.</b> -Purpose of a text; Outline, the thesis statement, the introductory paragraph, the supporting paragraphs and the concluding paragraph of an essay .
<b>Week 8</b>	<b>Mid-term test</b>
<b>Week 9</b>	<b>Intensive Classroom Reading Session.</b> -Purpose of a text Outline, the thesis statement, the introductory paragraph, the supporting paragraphs and the concluding paragraph of an essay
<b>Week 10</b>	<b>Intensive Classroom Reading Session.</b> -Purpose of a text; Outline, the thesis statement, the introductory paragraph, the supporting paragraphs and the concluding paragraph of an essay.
<b>Week 11</b>	Vocabulary extending strategies *Intensive Classroom Reading Session. -Unity and coherence at essay level * <b>Intensive Classroom Writing Session.</b>
<b>Week 12</b>	Vocabulary extending strategies *Intensive Classroom Reading Session. -Unity and coherence at essay level * <b>Intensive Classroom Writing Session.</b>
<b>Week 13</b>	Vocabulary extending strategies * <b>Intensive Classroom Reading Session.</b> -Unity and coherence at essay level *Intensive Classroom Writing Session.
<b>Week 14</b>	Vocabulary extending strategies *Intensive Classroom Reading Session. -Unity and coherence at essay level *Intensive Classroom Writing Session.
<b>Week 15</b>	<b>Revision</b>
<b>Week 16</b>	<b>EXAM</b>

## **Appendix K: Experimental subjects' verbal data**

**Interview question 1:** What is your general opinion about engaging in collaborative blended learning?

**Student 1:** "I think the first thing is it improves our self-esteem, it boosts our confidence to take part in activities and also it enhances communicative skills. You can learn how to communicate better especially when you send to the teacher, you learn how to be more academic."

**Student 2:** "It improves my confidence."

**Student 3:** "Firstly, for me collaborative learning is based on participation in class, sharing ideas among students and knowing how to work with peers. However, online learning is more reliable nowadays because it is quite easier (pause) and because of accessibility, flexibility and access to resources."

**Student 4:** "Personally, I find that this experience is really effective to develop our level of English, especially in the module of reading and writing because in collaborative learning we depend on communicating in class, sharing ideas. And the way of teaching (pause) I find it very effective to develop myself."

**Student 5:** "As you know I am repeating the year, so I learned before (pause) For me (pause) this time personally it is a higher level because it is a great way of learning; it changed from (pause) I don't know how to express (pause) but it is different from the other teaching methods or strategies but in a good way because it helped me."

**Student 6:** "For me it is a great step for learning English. It improves our reading and writing. I think that it is a strategy that really developed our English for writing and learning. We learned more and for me I think it is a good method to understand."

**Student 7:** "I think CBL helped us to share ideas, opinions, and knowledge (pause) correct our mistakes (pause) we explain to each other (pause) we correct the mistakes of each other. And online learning is a new way of learning that helped me to develop my skills, experience new things, communicate with others and make good efforts in learning."

**Student 8:** “I think it also opens the student’s (pause); it helped us to communicate as my classmate said (pause) in communicating with other students; talking and speaking with many students and the teacher (pause) helped us a lot.”

**Student 9:** “I think that collaborative learning is based on participation and in case the student couldn’t improve their (pause) his skills or write in an academic way, other students can help him and give him confidence.”

**Student 10:** “It is the best way of learning.”

**Interview question 2:** Do you think that online learning enhanced your writing skills? If yes, in what way? Could you please describe the writing stages that were most developed?

**Student 1:** “Yes, it does. For me, it was planning and editing, because I learned how to plan in order to avoid messy words and not writing directly and also I learned what mistakes to avoid and the correct way to re-correct them or improve them.”

**Student 2:** “Writing strategies are very useful to develop myself, especially the stage of outlining. It helped me to write a brief summary of all my ideas (pause) to write a very organized (pause) and well-structured essay.”

**Student 5:** “Outlining helped me to organize my thoughts, my ideas and how to use my knowledge effectively.”

**Student 4:** “It helped me to get clear ideas.”

**Student 3:** “We could also use dictionaries or search ...for new information to make our work better.”

**Student 4:** “We could have immediate access without looking for the book or for a specific word; we could find more information and more vocabulary that help us to write a good essay.”

**Student 9:** “Especially in online learning, we find many essays and examples, so we learn how to upgrade our skills and check vocabulary.”

**Student 2:** “I think that outlining helped me a lot because I have never used it before (laughing); it didn’t exist for me, but now I cannot write an essay or even a paragraph without using it, so it helped me a lot to avoid many errors.”

**Student 5:** “Planning was developed most because I used to have many ideas, but I didn’t know how to organize them. Now I write for example a paragraph or an essay, I plan then I write it.”

**Student 8:** “It is more comfortable to take something at home.”

**Student 3:** “We can also check availability every time.”

**Interview question 3:** Do you think that engaging in online learning enhanced your reading comprehension skills? If yes, in what way? Discuss your opinion.

**Student 1:** “Yes. It introduces new vocabulary every time and it forces you to concentrate more on the task so you will learn how to invest time on each exercise and to manage time well.”

**Student 3:** “Collaborative learning opens the doors to speak English more fluently.”

**Student 8:** “Through online learning, I can read whenever and wherever I want and this is a good thing to improve my reading skills.”

**Student 9:** “Reading collaboratively helped me to know my mistakes, and other students can help me to correct mistakes and spell words correctly.”

**Student 2:** “I think that CBL it is better in class because it affects positively the student rather than online learning alone....there is no interaction.”

**Student 10:** “Skimming and scanning were most improved. CBL helped me to understand the reading task better.”

**Student 7:** “It helped me to find supporting details, compare ideas to see my level and reading online is more useful, you concentrate when you are alone, it’s calm; you understand more. If you find difficulties in understanding the task you can contact classmates and the teacher or check in the internet.”

**Student 4:** “I agree with my classmate, when we apply reading strategies online we are more concentrated rather than in class at home it’s calm it helped me check vocabulary.”

**Student 3:** “I think online learning helped me to develop reading comprehension; each time I read online it helped me to find new words, vocabulary, new expressions and their definitions and when to use them.”

**Interview question 4:** What are the advantages or disadvantages of collaborative blended learning?

**Student 1:** “Collaborative learning for me it stopped me from being shy too much. I am able to express myself more than I was at the beginning of the year and also ideas are unlimited when you are in a group each person shows his own talents. Ideas are constant; each one is continuously giving ideas.”

**Student 2:** “I agree with my classmate.”

**Student 7:** “From the collaborative work, it helped me to find my mistakes for both reading and writing.”

**Student 5:** “I think that online and collaborative work has one shiny advantage is to remain focused.”

**Student 4:** “Actually I find (pause) online learning helps me to find information, organize our time and develop our self confidence.”

**Student 3:** “Collaborative learning helped me to communicate with others and get many ideas and knowledge. In online learning, we can depend on ourselves to answer the questions.”

**Student 4:** “The quizzes are very effective and reliable; they helped me to do many activities to correct mistakes”

**Interview question 5:** Did you encounter any difficulties using the MOODLE learning platform? If yes, can you describe the problems you faced and what bothered you most?

**Student 2:** “(laughing) sometimes it is not easy to access the platform because of our “Algérie télécom” (laughing) it can really (pause) the problem of the internet.”

**Student 5:** “Internet in Algeria is annoying.”

**Student 1:** “Not really, because once you set up the instructions on how to log in the site we find clear instructions on how to solve the exercises. It wasn’t that difficult.”

**Student 4:** “I agree with student 1.” **Note:** For confidentiality purposes, the real name of the student was replaced by “student 1”

**Student 7:** “We found difficulties at the beginning because we didn’t know how to use the website. We were lost to find our info, but when we started using it regularly, we couldn’t drift away. We become more familiar with it. It is easy.”

**Interview question 6:** What are your suggestions for the improvement of the implementation of collaborative blended learning in literacy skills learning?

**Student 4:** “We should make more quizzes with correction”

**Student 3:** “We can learn with the MOODLE application in class; it is good.”

**Student 9:** “I think if some students want to discuss ideas, I think it s good to integrate data show in class to show information.”

**Student 2:** “Giving titles of books to each group, and we try to share the meaning and ideas that emerge from the book.”

**Student 3:** “Quizzes can be in the form of games in order not to be bored”

**Student 7:** “I enjoyed working in groups with my friends. They corrected my mistakes. I think it is useful way of learning.”

**Student 10:** “It is an enjoyable way of learning.”

## استخدام التعلم التعاوني المختلط لتحسين مهارتي القراءة و التعبير الكتابي : دراسة حالة طلاب السنة الأولى لغة انكليزية لغة أجنبية بجامعة الجزائر 2

### الملخص

لقد أدى النمو المتسارع للتكنولوجيا التعليمية ، التي وسمت طرائق التعليم في القرن الحادي والعشرين ، إلى ظهور مقاربات مستحدثة ومتنوعة غرضها تنمية مركزية المتعلم وتعزيز استعمال التكنولوجيا في عمليتي التعليم والتعلم وتحسين المهارات اللغوية للطلاب. فمن المهارات اللغوية التي تعتبر مهمة في أي مستوى تعليمي هما مهارتي القراءة و التعبير الكتابي وغالبًا ما ينظر إلى هاتين الأخيرتين على أنهما مهارتين معرفيتين شديديتي التعقيد وتحتاجان إلى إستراتيجية تعليم صريح ومقاربات تعليمية مبتكرة وتشارك ودعم مستمر لمساعدة الطلاب على تحسين تحصيلهم في القراءة والتعبير الكتابي. و لكن على الرغم من إصلاحات التعليم العالي الجزائري ، فإن التعليم المختلط لم يحصل بعد على تركيز في الجامعة الجزائرية. من أجل ذلك ، فإن أطروحة الدكتوراه تقترح إطارا تعليميا يسمى بالتعليم التعاوني المختلط (CBL) ويشمل استخدام القراءة الإستراتيجية التشاركية (CSR) والكتابة التعاونية (CW) داخل الصف الدراسي وفي التعليم عبر الانترنت خارج الصف الدراسي. إن هدف بحث الدكتوراه هذا هو دراسة تأثير التعليم التعاوني المختلط (CBL) على تنمية قدرات الطلاب على القراءة والتعبير الكتابي وعلى زيادة وعيهم بعمليات القراءة والكتابة. واستكشاف وجهات نظر الطلاب عن استخدام هذا المنهج التعليمي لتنمية مهارات القراءة والتعبير الكتابي لديهم. ومن أجل هذا الغرض، أجريت دراسة شبه تجريبية شملت 100 من المسجلين في قسم اللغة الإنكليزية في جامعة الجزائر2 في السنة الدراسية 2017-2018. وقد أظهرت النتائج، التي أسفرت عن تحليل الاختبار والاستبيانات ومقابلة المجموعة المستهدفة ، أن استخدام التعليم التعاوني المختلط أثبت فعاليته في تنمية قدرات الطلاب على القراءة والكتابة وزيادة وعيهم بعمليات القراءة والتعبير الكتابي في اللغة الثانية. وفضلا عن ذلك ، كشف الطلاب عن تصورات إيجابية لاستخدام التعليم التعاوني المختلط (CBL) حيث عزز التعليم عن طريق الأقران ، ووطد الدعم التفاعلي والتعقيب ، وشجع العمل الجماعي ، وأتاح لهم الفرصة لممارسة مهاراتي القراءة والكتابة في حجرة الصف وخارجها. وبالتالي فإن التعليم التعاوني المختلط (CBL) ، المستوحى من المبادئ النظرية الثقافية الاجتماعية ، قد توسط لتعليم الطلاب ودعم أداءهم في القراءة والتعبير الكتابي ورفع من تعاونهم وتشاركتهم للتعلم. إن هذا الإطار التعليمي ، الذي يفترض نقلة نوعية من التعليم التقليدي إلى التعليم في القرن الحادي والعشرين ، موصى به للتعليم في الجزائر بجميع أطواره.

### الكلمات المفتاحية :

التعلم التعاوني المختلط – الانكليزية في التعليم العالي - مهارتي القراءة و التعبير الكتابي – الوسائط التعليمية - الدعم التربوي