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The Impact of Computer-assisted Language Learning (CALL) Instruction in Improving EFL Learners' Linguistic Competence

A Case Study of Third-Year LMD Students of English at Mohamed Kheider University of Biskra

A Dissertation Submitted to the Department of Foreign Languages in Partial Fulfillments of the Requirements for a Master Degree in Sciences of Language

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Declaration

I, Sarra BENCHABANE, do hereby declare that the work that I presented in this dissertation is my own, and has not been submitted before for any academic institution or a university for a degree.

This work was conducted and completed at Mohamed Kheider University of Biskra, Algeria.

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Dedication

This work is dedicated to my sacred family,

and to everyone whom I consider as a family.

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Abstract

The mastery of linguistic competence is deemed to be the foundation for successful language learning. Apparently, the majority of EFL students have difficulties in grammar such as their miss-use of grammar structures. Accordingly, this study aims at investigating the utility of integrating Computer-assisted Language Learning (CALL) in teaching grammar and its impacts in improving EFL learners' competencies in grammar. Moreover, it seeks at examining the role of Computer-assisted Language Learning (CALL) as a motivational tool in enhancing EFL learners' performance. The hypothesis suggested to probe this study sets out that Computer-assisted Language Learning (CALL) can help in improving EFL learners' linguistic competence, namely their grammar performance. The instruction aimed at investigating learners' linguistic competence progress of the representative sample of Third-Year LMD students. Therefore, a mixed research approach was adopted in this research. In relevance to this approach, four data gathering methods were used in order to investigate learners' perceptions of grammar structures and their reactions towards the applied instruction. These tools include a quasi-experiment, students' evaluation form, students' questionnaire, and teachers' interview. After the analysis and the interpretation of the collected data, the findings revealed that CALL instruction can help in improving EFL learners' linguistic competence, specifically their grammar. Also the findings revealed that the majority of EFL teachers do not use CALL in their teaching processes inside classrooms as much as they use it as a support for courses preparations; however, all the teachers expressed their high agreements and encouragements about using CALL in EFL classrooms for teaching English language in general and grammar in particular. Moreover, teachers and students expressed their valuable attitudes and feedbacks towards CALL instruction. Consequently, it can be concluded that the previous alterative hypothesis was confirmed.

Key words: Computer-assisted Language Learning (CALL), grammar, linguistic competence

List of Abbreviations and Acronyms

AI: **A**rtificial **I**ntelligence

Ax: axiom

CALL: **C**omputer-**A**ssisted **L**anguage **L**earning

CAI: **C**omputer-**A**ssisted **I**nstruction

CELL: **C**omputer **E**nhanced **L**anguage **L**earning

CLT: **C**ommunicative **L**anguage **T**eaching

CMC: **C**omputer-**M**ediated **C**ommunication

CS: **C**omputer **S**cience

CSCL: **C**omputer-**S**upported **C**ollaborative **L**earning

DS: deep structure

EFL: **E**nglish as **F**oreign **L**anguage

ESL: **E**nglish as a **S**econd **L**anguage

ET: **E**xtended **T**heory

Exp: phonetic structure (expression).

G&B: **G**overnment and **B**inding Model

HLLs: High Level Languages

ICALL: **I**ntelligent **C**omputer **A**ssisted **L**anguage **L**earning

ICT: **I**nformation and **C**ommunication **T**echnology

IEP: **I**ntensive **E**nglish **P**rogram

IT: **I**nformation **T**echnology

Lex: lexicon

LF: **L**ogical **F**orm

LMD: License, Master, Doctorat

L1: Fisrt Language/ Mother tongue

L2: Second Language

MALTED: **M**ultimedia **A**uthoring for **L**anguage **T**utors and **E**ducational **D**evelopments

Mng: semantic structure (meaning)

MP: **M**inimalist **P**rogram

PC: **P**ersonal **C**omputer

PDAs: **P**ersonal **D**igital **A**ssistants

PF: **P**honetic **F**orm

Phn: phonology

Phr: phrase structure

PLATO: **P**rogrammed **L**ogic for **A**utomatic **T**eaching **O**peration

P&P: **P**rinciples and **P**arameters **T**heory

SD: **S**tandard **D**eviation

Sem: semantics

SLA: **S**econd **L**anguage **A**cquisition

SS: surface structure

ST: **S**tandard **T**heory

TEL: **T**echnology-**E**nhanced **L**earning

TELL: **T**echnology **E**nhanced **L**anguage **L**earning

TESOL: **T**eaching **E**nglish to **S**peakers of **O**ther **L**anguages

TGG: **T**ransformational **G**enerative **G**rammar

TICCIT: **T**ime-shared, **I**nteractive, **C**omputer, **C**ontrolled, **I**nformation, **T**elevision

TOEFL: **T**est of **E**nglish as a **F**oreign **L**anguage

Trn: transformational structure

UG: **U**niversal **G**rammar

WELL: **W**eb **E**nhanced **L**anguage **L**earning

WWW: **W**orld **W**ide **W**eb

ZPD: **Z**one of **P**roximal **D**evelopment

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General Introduction

GENERAL INTRODUCTION

Introduction

Since the era in which we live has been known as the era of The Knowledge Society, the era of The Information Age or even the era of The Globalization, we constantly witness an enormous explosion of new types and styles of communication technologies such as computers including desktops and laptops, mobile phones, iPods and so on as well as media like the internet, text messaging, e-mails, chats and others. Moreover, the process of inventing new means of communication is in continuous progress. This revolutionary society which is formed as a global village is making people closer according to their different and specific needs thanks to the communication technologies. Thus, not just one language would be involved for the sake of communication but several languages. Furthermore, with the development of the artificial intelligence and the digital tools being bilingual or multilingual is a significant part of this information communication revolution. These technologies create an environment which contains a multiplicity of languages and have a great impact on the way we write, read, and process information of the target language in order to develop our knowledge about it.

Henceforward, English language has become the language of power and science. As an illustration, we can notice the great increase of the number of students whose first language is not English as well as the extent use of English on internet and social media. The Algerian government as a part of the world has given an essential status to English to be the foreign language taught in schools so that it has become a primary interest for learners and a matter of investigation for teachers to develop learners' autonomy and motivation as well as their linguistic competence. Thus, teachers face a unique challenge with teaching English language in the context of non-English classrooms which limit the learners from the original language and cultural input. Teachers will not risk rendering the classrooms to an artificial environment because of that they make efforts to use new methods to confirm better learning

outcomes. The advances in the Information and Communication Technologies (ICT) tools and the multimedia have made precious additions to teachers' instruction materials. Regardless of the traditional ways of teaching and the old approaches, teachers adapt computational tools and approaches in order to facilitate the access to the mediated and the authentic sources to information that can be related to learning language activities.

Knowing about the language does not mean only the mastery of the productive and the receptive skills without the mastery of the linguistic competence which is the foundation of learning a language and the basis to master its linguistic aspects. Therefore, authentic experiences such as the direct use of computers motivate students to engage actively in the process of learning by developing their knowledge about the use of technology and developing their critical thinking. Hence, computers have become widespread at schools, business and homes; the need of mastering the language rules has become a necessity, teachers started to use such innovative technologies as pedagogical tools in second language teaching which is referred to The Computer-Assisted Language Learning. The CALL is related to the utilization of computers in English language learning. It does not simply include laptops devices, but it also concerns the internet connecting to them and a number of technological items which are referred to as The Web-Enhanced language learning (WELL) or The Web-Based language learning (WBLL).

In terms of theoretical approaches, communication technologies and computers, The Computer-Assisted Language (CALL) software programs present a great challenge for the teachers and the learners as a new mean of exploration in improving learners' linguistic competence. Therefore, the present work intends to investigate the role of CALL and its use in promoting EFL learners’ linguistic competence.

1. Statement of the Problem

EFL learners in Biskra University encounter difficulties in constructing correct grammatical utterances due to several reasons such as the lack of vocabulary, the interference of the mother tongue, the limited knowledge about the foreign language or due to the small amount of activities presented in the classroom. Indeed, the shortage of exercises exposed to the students affects their improvement in developing their linguistic competence which is the ground of mastering the skills of the target language in order to communicate effectively and to reach their goals.

Teachers tend to use visual aids in instructing such as images, video projectors and so on. Moreover, in the light of the technology and information revolution of the 21st century and the extensive use of computers, it led teachers to adapt new methods to confirm a beneficial feedback. Thus, these methods are changing from teacher-centered approach to learner-centered approach and they are shifting from the traditional approaches to the communicative and audio-lingual approaches. Accordingly, teachers promote learners' autonomy and self-reliance through the use of computers to enhance students' performance; teachers adopt the computer-assisted language learning (CALL) as a method with the variety of its usages and instructive software programs to facilitate the rapidity and the quality of the information.

It is worthy to investigate how the CALL program affects the quality of language learning and to search how it provides a comprehensible input to pave the way for learners to develop their linguistic competence.

2. Significance of the Study

This study is significant as it tries to show the role of using computers in learning English in general and in learning English language rules and grammatical structures more specifically; i.e., reaching linguistic competence. This study also attempts to call for using the CALL in improving learners' linguistic competence and facilitating the role for teachers to

make students acquire the knowledge about the target language easily and smoothly. Finally, as the domain of The CALL needs more research in Algeria, this current work may motivate other researchers to carry on further studies on the same subject.

3. Aims of the Study

This work seeks to investigate:

- The contribution of technology and multimedia in learning English language.
- The role of computers in developing EFL learners' performance.
- The impact of the CALL in enhancing learners' linguistic competence.
- The attitude of teachers and learners toward the CALL programs.

4. Research Questions

Through our work, we will try to answer the following questions:

- Will the use of the Computer-assisted Language learning (CALL) programs for learning English language improve EFL learner's linguistic competence?
- How do students perceive the benefits of CALL in assisting their linguistic competence, particularly their grammar?
- What would be the attitude of teachers and learners towards the use of CALL programs?

5. Research Hypotheses

In accordance, we hypothesize inductively from the previous questions that:

H_1: If EFL teachers integrate Computer-assisted Language Learning (CALL) instruction in grammar teaching, learners' linguistic competence would be improved.

$H_{0:}$ The integration of Computer-assisted Language Learning (CALL) Instruction in grammar teaching will not have a significant impact on improving EFL learners' linguistic competence.

6. Limitations of the Study

It was predicted that it might be difficult to get accurate data from the part of all learners and teachers; that is why, this research is confined to a representative sample of third year LMD students in the academic year 2016/2017 in Mohamed Kheider University of Biskra. Moreover, the limitation concerns time, space and shortage of best equipments that would influence the ongoing of the research process.

In addition, this research was restricted to examine one aspect of language which is the linguistic competence and is not concerned with other aspects of the language or other types of competence.

7. Research Methodology

7.1. Research Method

In order to confirm our hypothesis and to obtain information from the subjects (teachers/students), we used the mixed research approach because we attempted to examine the effect of the CALL program in developing learners' linguistic competence as well as to provide data concerning the CALL program.

7.2. Sample of the Study

The researcher decided to choose 3rd year LMD students of English at Mohamed Kheider University because grammar constructes all their courses and because they are more used to the applications of computers and Internert softwares.

From a total population of 450 students, 15 students have been chosen randomly to represent our sample. Moreover, a number of six (06) teachers from the same setting were selected in accordance to the modules they teach which have a relationship with grammar in order to give their opinions on the subject which is the use of the CALL as an instruction in teaching grammar.

7.3. Data Gathering Tools

The one sample T-test was chosen as a research tool as it saves time and efforts. A pretest had been applied to assess the students' prior knowledge before the treatment of the CALL program. We have used the "English Grammar Secrets" software as an aspect of the CALL program which incorporates the communicative approach and contains many pedagogical activities. Indeed, "English Grammar Secrets" program was used as a treatment in order to expose the sample to online tasks. A posttest was then applied to assess their achievement after the application of the CALL program. Consequently, a students' evaluation form was added in order to have the participants' evaluations and feedbacks about the CALL instruction.

In addition, a questionnaire has been handed to the sample of the experiment to collect their opinions, attitudes and reactions about the topic. Moreover, an interview has been conducted with some teachers of English (of different modules) to gather their opinions and attitudes about the use of the CALL. Their answers had been recorded, analyzed and interpreted.

8. Research Design

There are three chapters in this study. Chapter one provided the definition of the linguistic competence, the linguistic competence vs. the communicative competence, the different aspects and components of the linguistic competence, the different learning theories and so on. Chapter two was devoted to the historical background of the CALL as well as its definition, stages, and its characteristics and advantages. Chapter Three was dedicated to the research methodology which details the population and the sample of the study, the instruments used as well as the data gathering and the analysis procedures.

CHAPTER ONE:

LINGUISTIC COMPETENCE: REVIEWING FUNDAMENTALS

CHAPTER ONE: LINGUISTIC COMPETENCE: REVIEWING FUNDAMENTALS

Introduction

Avram Noam Chomsky (1928) is an American Linguist, cognitive scientist, political activist, philosopher, historian, and a social critic. Chomsky has a made a great contribution in the domain of linguistics where linguistic theory aimed at describing things that are found only in nature and they are correct only if there is a mental corresponding to it. Chomsky has introduced the concept of Linguistic Competence to clarify of what a grammar is a theory, hence the linguistic competence is significant in understanding language and linguistics where it has came with the notion of generative transformational grammar. Therefore, Universal Grammar theory provides issues and constraints of the linguistic competence, that is to say it presents a theory to the grammatical representations. Since UG is part of the innate endowed language faculty, it provides a role in the domain of second language acquisition (SLA). Various works on UG in SLA has been conducted in the Government and Binding (G&B) model where grammar rules has been changed to principles and parameters which were later has been determined and associated with the lexicon in Chomsky's last model called the minimalist program.

In this chapter, we will provide a complete analysis on the linguistic competence which deals with a historical background of the term linguistic competence and its origins, the basic definition of the linguistic competence according to Chomsky, and the different stages of the developments of linguistic competence, then the chapter ends up with the different models of access to universal grammar and the basic learning strategies that deals with cognition. Indeed, we explored that the knowledge of language is an important aspect of learning the target language in EFL classrooms and in Second Language Acquisition (SLA) framework.

1.1 Modern Schools of Linguistics

1.1.1 The Rise of Structuralism

Many scholars thought about the replacement of the historical linguistics by emphasizing the investigation of living languages and their structure at the same time. For instance, the concept of "phoneme" which basically means the smallest unit of sound that is capable of changing the meaning of words; it is a central notion in linguistics which its definition differs from a school to another, so that we cannot attribute it to a specific person or school. The Neogrammarian historicism were the predominant school presented by the German domination till the First World War when linguists released themselves from the domination and started new currents with different characteristics came from Switzerland with Ferdinand de Saussure, Russia with Baudouin de Courtenay, and America with Franz Boas (Aronoff & Rees-Miller, 2003).

Structuralism is an approach to linguistics originating from the work of the Swiss linguistics Ferdinand de Saussure (Aronoff & Rees-Miller, 2003). Ferdinand de Saussure is known as the father of modern linguistics and a master of discipline which he made modern (icywarmtea, n.d.). Saussure's important ideas about linguistics were compiled and published by his two students Charles Bally and Albert Sechehaye in Cours de Linguistique Générale (Saussure 1922), on the basis of notes which have been taken from Saussure's class lectures at the University of Geneva (Graffi, 2006 as cited in Graffi, 2015). The main goals of this book were defining linguistics and turning the tide of the linguistic view from the Diachronic or historical study which had dominated linguistics in the nineteenth-century to the synchronic or non-historical study of language (Aronoff and Rees-Miller, 2003).

Saussure's emphasis was on the Synchronic study of language and how linguistic units are organized into the system of each language. He argued that the linguistic unit is a sign which is a union of the signifier (the form, sound) and the signified (the meaning, function); the

sound-meaning relation in signs is characterized by its arbitrariness and not predictable from one language to another (Aronoff & Rees-Miller, 2003). Saussure made another distinction between language and speech in his famous dichotomy langue and parole. The former is concerned with language as socially shared and as a system, and the latter is concerned with the individual's language. The goal is that to approach the general character of language by studying the individual's speech as it reflects the language possessed by the society in general. Saussure's structuralism has had an effect on anthropology, literature criticism, history, psychology, and philosophy, modified and promoted by many scholars (Aronoff & Rrees-Miller, 2003).

1.1.2 The Prague School

Jan Baudouin de Courtenay (1845-1929), born in Poland. Saussure was familiar with Courteny's thinking as this latter was developing structuralists' ideas at the University of Kazan in Russia at the same time as Saussure was teaching in Geneva and parts of the Cours reflected this directly. Baudouin de Courteny's thinking was interested in developing the concept of "phoneme". Also Baudouin and his students contributed all basic terminology in modern linguistics like the terms "morpheme", "grapheme", "distinctive feature", and "alternation". Courteny's thinking survived through linguists whom he influenced and became associated with the Linguistic Circle of Prague (Aronoff & Rees-Miller, 2003).

Serge Karcevskij (1884-1955) brought Saussure's thinking back with its formalist movement to Moscow Linguistic Circle when he had been in Geneva from 1906 to 1917. Later, Roman Jakobson (1896-1982) and Prince Nicholai S. Trubetzkoy (1890-1938) became the representatives of the Prague School of Linguistics. Jakobson, Trubetzkoy, and others developed notions in the structural linguistics which are important in current theories, like "distinctive features", "markedness", "topic", "comment", "implicational linguistics", and "linguistic areas" (Aronoff & Rees-Miller, 2003).

The Prague School is best known for its contribution to linguistics as it sees language in terms of function and its most significant contribution which is the distinction between phonology and phonetics. In accordance to Saussure's distinction between langue and parole, Trubetzkoy argued that phonology is concerned with langue meanwhile phonetics belonged to parole. So that he developed the concept of "phoneme" as an abstract unit of the sound system which is distinguished from the sounds actually produced (icywarmtea, n.d.). Jakobson immigrated to the US in 1942 and he had a strong influence on the development of Generative Phonology through his student Morris Halle and through the linguist Noam Chomsky (Aronoff & Rrees-Miller, 2003).

1.1.3 The London School

The London School is best known as the functional linguistics and the systemic linguistics because it focuses on the functions of language and gives geart importance to contexts and the system aspect of language. The London School has a tradition of believing that various types of linguistic description may be adequate for different purposes (icywarmtea, n.d.).

John R. Firth (1890-1960) contributed mainly in both fields of phonology and syntax and their relation to context of situation. Firth argued that not only words and sentences have meaning, but even the phonetic units are meaningful as well. According to Firth the analysis of typical context of situation requires the analysis and the classification of sounds and phonemes which is called the paradigmatic approach; meanwhile, the Syntagmatic Approach is concerned with the analysis of context where sounds occur. Firth's model of phonology is called "prosodic phonology"- he has brought the notion of "prosody" to be added to the phonemic entity- he meant by prosodies any other entities defined on the basis of their use on the spoken chain in addition to the other phonemic entities like accents, tones, and intonation. The occurrence of prosodies was defined by the rules of English syllabic structure (Graffi, 2013 as cited in Graffi, 2015).

M. A. K. Halliday (1925) was the student of John R. Firth, he argued that the foundational of human experience is language and he stressed that language cannot be detached from meaning. All his views and publications were from his approach which called systemic-functional linguistics (icywarmtea, n.d.). A key notion in Halliday's theory was "the context of situation" that obtains "through a systematic relationship between the social environment on the one hand, and the functional organization of language on the other." (Halliday, 1985, p.11). Unlike structuralism, which privileges the syntactic structures, the systemic-functional linguistics suggests function and semantics as the foundation of human language and communicative task. Thus, it considers the analysis of the social context and how language behaves upon it (icywarmtea, n.d.).

1.1.4The American School

Linguistics in America started at the end of the 19th century, while linguistics in Europe started a thousand years ago. The American structuralism developed differently from the European one in terms of the various traditional and cultural backgrounds of each language. The American Structuralism considered that the grammatical categories should be determined in terms of distribution rather than in terms of meaning, and the structure of each language should not be compared to the claimed universality of such categories like tense and parts of speech (icywarmtea, n.d). Firstly, structural grammar describes all the aspects found in a language instead of constructing rules. Secondly, it aims objectivity in the sense that all the produced grammars are not comparable to any traditional grammas. Thirdly, it emphasizes the uniqueness of each language and it does not deal with giving a sufficient treatment of meaning. Lastly, structural grammar describes all the smallest variances at any construction or use of a language (icywarmtea, n.d).

Franz Boas (1858-1942) is the founder of the American Anthropology and the American Linguistics. Boas major concern was to collect information about Native American languages

and cultures. Hence, he argued the avoidness of generalizations and put emphasis on describing each language and culture in its own terms. The principle of emphasizing description and against generalization has prevailed in American Structuralism until Chomsky's insights changed the field towards generalizing, universals, and linguistic theory. Sapir and Bloomfield were the most well known linguists after Boas (Aronoff & Rees-Miller, 2003).

Edward Sapir (1884-1939) was Boas' student; he published in both anthropology and linguistics and wrote theoretical works about the phoneme. His main interest was about the psychological-typological thought. He dealt with the morphological typologies of the last century on his 1921 book, Language (Aronoff & Rees-Miller, 2003). Nevertheless, like Boas, he refused the evolutionary preconception that symbolized traditional typological studies: "all attempts to connect particular types of linguistic morphology with certain correlated stages of cultural development [. . .] are rubbish" (Sapir, 1921, p.219 cited in Aronoff & Rees-Miller). He rejected the conception that differences in the linguistic forms could be traced back to racial differences. Later on, he advocated the psychological orientation of the typological tradition and passed it to his student Benjamin Whorf (1897-1941) who transformed it into Sapir-Whorf hypothesis which claims that speakers' comprehension and perception about the world is compelled by the linguistic categories their language presents. Sapir maintained the non-generalizing and mentalism of Boas' theory (Aronoff & Rees-Miller, 2003).

Leonard Bloomfield (1887-1949) was influenced by behaviorist psychology; hence, his major concern was giving a fundamental form to the American Structuralism and making linguistics an autonomous scientific field. He accepted Boas' conception against generalizing but he opposed the relevance of "mind" that had distinguished the structural grammar of Boas, Sapir, and their students (Aronoff & Rees-Miller, 2003). He argued that linguistics is a branch of psychology known as behaviorism which this latter is concerned with the belief

that human beings cannot know something without experiencing it, that is children acquire language through a process of "stimulus-response reinforcement", and adults' language learning is also a chain of "stimulus-response". Since Bloomfield entered the behaviorist methodology to the domain of linguistics via his writings, the linguistic studies focused on accepting what a native speakers utter and neglecting about what they say about it because of the assumption that the linguistic description is based on observation (icywarmtea, n.d.).

1.1.5 Naom Chomsky and Linguistic Theory

It is common to talk about "the Chomskian Revolution" since 1957, when Chomsky has published his first major work Syntactic Structures which has dominated linguistics' mainstream. Chomsky's linguistics was distinct from that of his American Structuralist predecessors; unlike Bloomfield and his followers, he brought back the concept of Mentalism (Aronoff & Rrees-Miller, 2003). According to Chomsky, grammar is a theory of language which can be constrained and tested just like any other theory in sciences; thus, its goal is to explain the native speakers' "competence" that is defined as what native speakers know about their language. Chomsky argued that speakers of language produce and infinite number of sentences most of which are new and never have been produced before, that is in terms of "competence" would impose formal means to produce and generate novel sentences; therefore, "Generative Grammar". Chomsky invented generative grammar in order to explain the concept of "competence" and make it formal and explicit (Aronoff & Rrees-Miller, 2003).

Chomsky reoriented the goal of Linguistic Theory towards the characterization of Universal Grammar which accounts for the differences among human languages in order to provide general universal properties for human languages. Finally, since theory of generative grammar began, it has evolved to many versions such as the "Standard Theory", the Government and Binding Ttheory", and the "Minimalist Program" in order to investigate the linguistic competence and to set general principles for it (Aronoff & Rees-Miller, 2003).

1.2 Universal Grammar Theory and the Knowledge of Language

1.2.1 Knowledge of Language

Extending over thousands of years, the study of language had a lengthy and wealthy history. On the assumption that "language are the best mirror of humans mind" (Leibniz), this study has been undertaken as an investigation into the nature of mind and thought (Chomsky, 1986). A major part of Chomsky's achievement is that he opened up language for investigation after he argued that what makes humans different from other species is language, and having a language allows us to get insight into the mind (Smith, 2002). Also Chomsky has brought the field of linguistics into the scientific stream so that our knowledge of language can be evaluated by scientific inspection as a part of the natural world (Smith, 2002).

Linguistics is the scientific study of our knowledge of language, it is fulfilled by the construction of grammars, i.e., hypotheses about this knowledge and how we put it in use in order to think or communicate effectively (Smith, 2002). The emergence of Generative Grammar Theory has presented an important shift of focus from the product of behavior to the states of mind that enter into behavior; consequently, the main concern becomes the nature, origins and the use of this knowledge of language which has been called by Chomsky (2006) "the linguistic competence" (p.20) (Chomsky, 1986). Accordingly, three central questions raised by Chomsky (1986) regarding the knowledge of language:

A: What constitutes knowledge of language?

B: How does such knowledge develop?

C: How is this knowledge put into use?

Chomsky (1986) gave three fundamental answers to these questions:

> The answer to the first question is given by a particular generative grammar a theory concerned with the state of the mind/brain of the person who knows a particular language. The answer to the second is given by the specification of UG along with an account of the ways in which its principles interact with experience to yield a particular language; UG is a theory of the "initial state" of the language faculty, prior to any linguistic experience. The answer to the third question would be a theory of how the knowledge of language attained enters into the expression of thought and the understanding of the specimens of language, and derivatively, into communication and other special uses of language. (pp. 03-04)

Consequently, Chomsky argued three answers concerning the knowledge of language as follows: the first answer to the first question is related to generative grammar theory, the second answer to the second question is given by Universal Grammar theory, and the third answer for the third question is given by the linguistic competence which is the expression of language

1.2.2 Universal Grammar Theory

"Universal Grammar" or UG has been a popular term since the publication of Chosmky's (1981) Lecture on Government and Binding. The Universal Grammar Theory focuses on the idea that human languages share some major similarities as they are superficially derived, hence these similarities are related to innate principles which characterize the uniqueness of language, that is to say, there is only one human language (Chomsky, 1995)_ has generated a tremendous amount of interest among linguists, psychologists, philosophers and other social and cognitive scientists.

Subsequently, the observation that human beings have the intuitions to produce sentences they have never learned in classrooms has raised interesting issues in language acquisition; consequently, the problem of explaining how we have came with those intuitions. Chomsky's answer was that we have acquired the lexical items of that knowledge and embedded them in

a framework provided by the Universal Grammar which is the set of linguistic principles that we have born with as human beings; briefly, it is innate (Smith, 2002). Moreover, the Universal Grammar according to Chomsky (1986) is:

> UG may be regarded as a characterization of the genetically determined Language faculty. One may think of this faculty as a "language acquisition device", an innate component of the human mind that yields a particular language through interaction with presented experience, a device that converts experience into a system into a system of knowledge attained: knowledge of one or another language. (p. 3)

1.2.2.1 The Development of Universal Grammar

The idea of UG has been a flash point in the history of linguistics. It has been unfolded for six decades and its development has come into two levels: the first level was about language acquisition and concepts of language such as competence and performance. The second level was about the Chomskian syntactic description which has fell into many historical phases where syntax have been known through Chomsky's titles of books and certain concepts have been rejected and changed from a book to another within different periods (Cook & Newson, n.d.).

"Generative Grammar", "Transformational Grammar" or "TGG" theory was established as a notion in the original model, Syntactic Structures, which took its name from Chomsky's 1957 book. Henceforth, with the Aspects Model_ which has been known later as the Standard Theory_ the TGG theory was preceded after Chomsky's 1965 book Aspects of Theory of Syntax. Chomsky in his book made a distinction between competence and performance, i.e. a distinction between language knowledge and language use (Cook & Newson, n.d.).

Over the 1970, the Standard Theory (ST) developed into the Extended Theory (ET) which this latter polished the types of rules that were used. This in turn evolved into the Government/Binding (GB) Model which claimed that all human languages composed of the same principles for any grammar and parameters allowed grammars to differ in limited ways.

Hence, Principles & Parameters Theory (P&P) has been applied as it has seen as closer to its core. Another major model of syntax has been undergoing development since the late eighties is called the Minimalist Program (MP) that is concerned with simplifying the language knowledge into principles common to all languages by attaching everything that have to be acquired in order to know a particular language as a part of the lexicon (Cook & Newson, n.d.).

1.2.3 Language Universals vs. Typology

The principal goal of linguistics is to emphasize the similarities between languages and to down play their differences. Chomsky (2000) asserted that: "…in their essential properties and even down to fine detail, languages are cast to the same mold the Martain scientist might reasonably conclude that there is a single human language, with differences only at margins." (p.07). As far as Chomsky (2004, p.149) described language as "essentially identical", elsewhere Stromswold (1999) shared the same view with Chomsky by expressing that: "although some languages seem, superficially, to be radically different from other languages […], in essential ways all human languages are remarkably similar to one another." (p.357).

However, Evans and Levinson (2009) have given counter examples to all proposed universals, including major phrasal categories, major lexical categories, phrase, structure rules, a distinction between subjects and objects, use of verb affixes to signal tense, anaphora, auxiliaries and WH questions, and concluded that:

> Languages differ so fundamentally from one another at every level of description (sound, grammar, lexicon, meaning) that it is very hard to find any single structural property they share. The claims of Universal Grammar are either empirically false, unfalsifiable or misleading in that They refer to tendencies rather than strict universals. (p.429)

In other words, Evans and Levinson (2009) disagreed with the notion of Universal Grammar and with the idea which claims that there is only one human language and all languages share the same properties. They argued that languages differ in terms of grammar, lexicon, sound and meaning, so

that it is quite impossible to find major structural properties they share, that is why they have rejected the notion of Universal Grammar.

Although, Stromswild (1999) claimed that linguistics have discovered that all human languages are similar to one another; remarkably, there is a clear disagreement between generative linguists like Chomsky and functional linguists like Evans and Levinson.

It is common to make the difference between language typology and universals. The former approach focuses on studying and classifying languages according to their structural features (Croft, 2003), while the latter approach is interested in "structural features that all or most of languages have in common." (Crystal, 1987, p.84). Typology requires the study of variety of languages; on the other hand linguistic universal focuses on "in depth studies in single languages…and tend to make generalizations about the more abstraction underlying properties of language." (Crystal, 1987, p.84).

Traditionally, language universals are classified as formal, substantive, implicational and unrestricted universals. Chomsky (1965) distinguished between formal and substantive universals:

> It is useful to classify linguistic universals as formal and substantive. A theory of substantive universals claims that items of a particular kind in any language must be drawn from a fixed class of items […] it is also possible however to search for universal properties of a more abstract sort. […] the property of having a grammar meeting a certain abstract condition might be called a formal linguistic universal, if shown to be a general property of natural languages. […] substantive universals […] concern the vocabulary for the description of language; formal universals involve rather the character of the rules that appearing grammars and the way in which they can be interconnected. (p.28)

In other words, formal universals are the rules that we use in order to formulate meaningful phrases and sentences such as the derivational rules like the transformation from statement to a question; whereas, substantive universals are the categories of grammar such

as nouns or verbs and the functions of grammar such as subject or object in order to build grammatical blocks.

Typologists usually distinguish between implicational and unrestricted universals. Croft (2003) argued that unrestricted universals are the assertions that all languages belong to a particular grammatical category on some features. For instance, unrestricted universals would be: all languages have nouns and verbs and all languages have sound vowels. In construct, implicational universals "always take the form 'if X, then Y', their intention being to find constant relationships between two or more properties of language." (Crystal, 1987, p.85), i.e. they refer to as a particular feature is always followed by another feature.

1.3 Linguistic Competence and Linguistic Theory

1.3.1 The Linguistic Theory

In a common sense "Linguistic Theory" is regarded as anything has been chosen to be done by linguistic theorists. Linguists were concerned about to differentiate the relationship between an analytic structure of statement and some fixed or potential corpus. Since the revolutionary linguistics, linguistic theory has been defined as:"the construction of universal theory of grammar in the sense of necessary universals for linguistic 'competence'." (Silverstien, 1972, p.349). The ideal linguistic theory was the clarification of language in every respect which was linguists major aim at all times (Silverstien, 1972).

To a great extent, there were issues of theory in syntax, semantics, phonology and morphology, in addition to areas of category and rule types, linguistic generalizations, Diachrony vs. Synchrony and so forth. A major controversy has detailed criteria of syntax and meaning. During that period as linguistic theory was specified by transformational generative perspective has dominated the field as the best formalized, best developed, and the best explicit framework (Silverstien, 1972).

1.3.2 Descriptive vs. Explanatory Adequacy

According to Chomsky (1965), a linguistic theory requires two levels of adequacy which are considered as descriptive and explanatory adequacy:

> …there are two respects in which one can speak of 'justifying generative grammar'. One level (that of descriptive adequacy) that grammar is justified to the extent that it correctly describes its object, namely the linguistic intuition - the tatic competence – of the native speaker[…] on a much deeper and hence much more rarely obtainable level (that of explanatory adequacy), a grammar is justified to the extent that it is a principled descriptively adequate system in that the linguistic theory with which it is associated selects this grammar over others, given primary linguistic data with which all are compatible (pp. 26-27).

Since description is something articulated more than it is just observable, one already needs something that is similar to a theory, something that needs those property of theory: coherent, falsifiable, testable and so on; therefore, "a grammar constructed by a linguist is 'descriptively adequate" if it gives a correct account of the system of rules that is mentally presented, that is, if it correctly characterize the rules and representations of the internally-presented grammar." (Chomsky, 1981, p.33). In other words, a descriptive adequate grammar is concerned with the set of rules which are produced correctly by native speakers. Thus, descriptive adequacy deals mainly with the linguistic competence of native speakers (Cook & Newson, n.d.).

On the other hand, explanatory adequacy according to Chomsky (1981): "explanatory adequacy […] is essentially the problem of constructing a theory of language acquisition, an account of the specific innate abilities that this achievement possible" (p.33). Hence, the explanatory adequacy relates the linguistic theory with the problem of explaining what makes language learnable. Also it provides the linguistic theory with reasons about why the linguistic competence comes the way it does (Cook & Newson, n.d.).

1.3.3 E-language vs. I-language

Chomsky's work (1986) stressed the difference between externalized (E-) language and internalized (I-) language. The E-language approach has its origins from the American Structuralists' tradition, hence it aims at collecting sentences "understood independently of the properties of the mind/brain" (Chomsky, 1986, p.20); i.e. it collects samples of language then it analyses their properties as sequences of elements. E-language approach adopts a grammar to describe the properties found in such sample "a grammar is a collection of descriptive statements concerning the E-language" (Comsky, 1986, p.20). The linguists' goal is the discover the set of external and social facts that build up the language (Cook & Newson, n.d.).

Nevertheless, The I-language approach deals with the internal properties of the mind more than the external aspects, it focuses on "what a speaker knows about language and where this knowledge comes from" (Cook & Newson, n.d. p.13); i.e. it is concerned with individual's intuition and knowledge of potential sentences rather than the sociocultural phenomena. Thus an I-language approach sets the goal of -discovering what constitutes the knowledge of language- which is the first question proposed by Chomsky (Cook & Newson, 2010).

Chomsky argued that the history of generative grammar was committed to I-language and provided a significant shift from E-language to I-language approach; "the shift of focus from the dubious concept of E-language to the significant notion of I-language was a crucial step in early generative grammar" (Chomsky, 1991b, p.10 cited in Cook & Newson, n.d.).

I-language approach concerned with the mental states where a grammar analyses the speakers' knowledge of language and then success was measured by how appropriately the grammar elaborates the knowledge of language in terms of the human mind's properties (Cook & Newson, n.d.).

Furthermore, the type of approach undertaken by generative theory requires the idealization of a "homogenous speech-community":

> Linguistic theory is concerned primarily with an ideal speaker listener, in a completely homogenous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions such as memory limitations distractions, shifts of attention and interest, and errors (random or characteristics) in applying his knowledge of the language in actual performance. (Chomsky, 1965, p.03)

Chosmky's definition does not reject the significance of sociolinguistics or other domains of linguistics; otherwise, he stressed the dissociation of the linguistic theory from facts like those described by the sociocultural inquiry which merely deals with different aspects and with different data of language.

1.3.4 Competence vs. Performance

The distinction between externalized language and internalized language led to another proposed notion which has been first drawn in Chomsky's (1965) namely, the difference between competence and performance. According to Chomsky (1965) competence is the "speaker-hearer's knowledge of his language"; meanwhile, performance is the "actual use of language in concrete situation" (p.04). Accordingly, Chomsky (1980) made another distinction of competence and he defined it as:

> By 'grammatical competence' I mean the cognitive state that encompasses all those aspects of form and meaning and their relation, including underlying structures that enter into that relation, which are properly assigned to the specific system of the human mind that relates representations of form and meaning. (p.59)

Chomsky sometimes uses the term "competence" to refer either to "the speaker-hearer knowledge of his language" or to his "knowledge and understanding" (Smith, 2002, p.38). The grammar of competence analyses the I-language in the mind which is different from the application of language that is related to many factors such as the context of situation and the

intentions of speakers. On the other hand, performance is concerned with the E-language collection of sentences, that is performance is any kind of data accumulated by the speakers of language such as newspapers, diaries, The work of William Shakespeare and so on (Cook & Newson, 2010). Consequently,

> The problem for the linguist, as well as for the child learning the language, is to determine from the data of performance the underlying system of rules (i.e. competence) that has been mastered by the speaker-hearer and that he puts to use in actual performance. (Chomsky, 1965, p. 4)

Chomsky argued that linguist's task is to characterize the competence, i.e., speakers' knowledge about their language, not the use of their language, i.e, performance. The distinction of our knowledge from its use does not convert the fact that our performance supplies much arguments about what our competence is; even though, it provides with some justifications about the fact that generative linguistics focuses more on competence rather that giving considerations to performance, the study of performance has been left to other disciplines like pragmatics and psychology (Smith, 2002).

1.3.5 Grammaticality vs. Acceptability

According to Schutze (1996) grammaticality judgments (GJs) are one of the most used data-collection methods that linguists apply to assess their theoretical assumptions. In order to determine to which extent a particular linguistic stimuli is correct in a given language, linguists expose speakers of language to a certain set of linguistic stimuli in the task that they must react wherein responses usually take place in the form of assessments. The need of GJ task in the linguistic theory is significant in terms of it provides ways to: (a) to assess speakers reactions to the different types of sentences that only appear in the spontaneous speech; (b) attain negative affirmation about the strings of words which do not belong to the language; (c) differentiate production problems such as unfinished utterances from

grammaticality problems; and (d) separate the important structural properties of the language by reducing the influence of the communicative functions of language.

Schutze (1996) adapted Chomsky's (1965) distinction of competence/performance, in this terminology he argued that "the goal of linguistic theory, under this view, is to describe the knowledge independent of (and logically prior to) any attempt to describe the role that this knowledge plays in the production, understanding, or judgment of language" (p.20). Thus, his principal concern in his book (1996) is: how we can use performance data to explore the linguistic competence? He dealt with grammaticality judgment as a part of performance data to examine their application in the linguistic theory.

One central concern has risen is that to what extent the GJ reflects the grammatical competence. As we have mentioned earlier, the contemporary aim of the linguistic theory is to investigate the grammatical competence. The grammatical competence is an abstract concept which cannot be exploited easily; it can be only identified through the speaker-hearer's performance. Henceforth, grammaticality and acceptability are often consider as synonyms in the use of meatlinguistic judgments while they are actually distinct:

> The notion 'acceptable' is not to be confused with 'grammatical. Acceptability is concept that belongs to the study of performance, whereas grammaticalness belongs to the study of competence…Grammaticalness is only one of many factors that interact to determine acceptability. (Chomsky, 1965, p.11)

The given distinction clarifies that the grammatical judgment tasks do not open a direct introspection to the linguistic competence, although GJs necessitate to be influenced by performance factors in order to judge the acceptability of the linguistic structures.

Schuzte (1996) developed a model of the judgment process in which he argued that generative strategies influence the judgment process by implicating the grammatical competence, hence if the utterances are generated so they are judged as grammatical and ungrammatical if they are not. Also he argued that parsing strategies cause judgment process

again with the implication of the grammatical competence on which the parser is drawn. For instance, sentences including parsing difficulties such as ‘the horse raced by the barn fell’ are usually judged as ungrammatical even if they follow the correct structural form of the language (Bever, 1970). In the previous example, the past participial 'raced' is interpreted as the main verb, once the reader faced the verb 'fell' he/she needs to reanalyze the sentence in order to be able to parse the verb following the correct rules of language; if he/she fails in doing so, then the sentence is judged as ungrammatical. Also Schuzte (1996) claims that the judgment process in influenced by the conscious knowledge of rules which involves many components that are not included in language processing that is called the analyzed linguistic knowledge such as the grammar learned in schools.

1.3.6 The Pragmatic Competence

Chomsky (1980) introduced a the notion of 'pragmatic competence' that "underlies the ability to use grammatical competence along with the conceptual system to achieve certain end." (p.59). The pragmatic competence is how knowledge of language is used in relation to the context of situation. Otherwise, the grammatical correctness and the semantic interpretation can be evaluated separately, so that judgments about meaning and about sentences structure might diverge as far as the issue of meaning and grammatical correctness is involved (Cook & Newson, n.d.). To illustrate, a sentence can be grammatically correct but has no meaning; like the famous sentence: colorless green ideas sleep furiously (Chomsky, 1965), is grammatically correct but without meaning. Hence, it can be judged as grammatical for a native speaker even though it has no meaning; on the contrary, one could judged it as ungrammatical in terms of grammar though it sounds meaningful to the hearer. To conclude, although grammar and meaning are complementary, it is possible to evaluate and to judge them separately.

1.3.7 The Communicative Competence

Chomsky's admission of the pragmatic competence does not mean that he agrees on that the main purpose of language is communication:

> Language can be used to transmit information but it also serves many other purposes: to establish relations among people, to express or clarify thoughts, for creative mental activity, to gain understanding, and so on. In my opinion there is no reason to accord privileged status to one or Other of these modes. Forced to choose, I would say something quite classical and rather empty: language serve essentially for expression of thought. (Chosmky, 1979, p.88)

However, Hymes (1972) expressed his strong disapproval at Chomsky's notion of linguistic competence by rejecting the idea that purely linguistic competence provides the theoretical foundation for teaching, learning and testing languages. Moreover, Dell Hymes first coined the notion of communicative competence in 1966 as a reaction to Chomsky's (1965) concept of linguistic competence. Thus, he argued that communicative competence is not only about the innate grammatical competence but also is concerned with the ability to use the grammatical competence in various communicative situations, hence adopting the sociolinguistic view into Chomsky's linguistic perspective of competence (Hymes, 1972).

In other words, Hymes definition of communicative competence does not diminish the significance of learning and using the grammatical rules correctly based on the linguistic competence, but also appropriately based on the communicative competence.

1.3.7.1 The Components of Communicative Competence

As a matter of fact, many linguistics an scholar agreed upon the components of communicative competence where linguistic competence is one of its major components. Smith (2002) stated those components as follows:

First, Linguistic Competence is concerned with the knowledge of language code of the target language, in other words how to combine the different elements of grammar following the semantic, syntactic, morphological, and phonological rules of language.

Second, The pragmatic competence is concerned with speakers' ability to understand and to deliver a communicative utterances appropriately in a given context of situation. It enables the speakers to interpret the conversational implicature and the illocutionary force of an utterance.

Third, Sociolinguistic Competence is about the knowledge of the sociocultural rules in order to use the language appropriately. Moreover, being appropriate in a given communication depends on many factors such the setting, the topic, and the relationship among the interlocutors, in order to respond appropriately the one should be aware of the taboos of the addressed culture, the politeness indices, the specific attitudes and so forth.

Fourth, Strategic Competence is about the speakers' knowledge of the verbal and non-verbal communication strategies in order to recognize, overcome, and repair the breakdowns when occur in a communication. The strategies can be like requests for repetitions, gestures, taking turns in conversation, clarifications and so no.

Finally, Discourse Competence is the knowledge of how to combine language structures in a cohesive and coherent way in oral and written texts regarding writing or speaking and reading or listening tasks respectively. Hence discourse competence is concerned with organizing the different elements of language structure in order to create speeches, conversations, poetry, e-mails and so on.

1.4 Generative Transformational Grammar (TGG) and Principles and Parameters (P&P) Theory

1.4.1 Generative Grammar Theory

According to Chomsky (1980) " when we speak of linguist's grammar as a 'generative grammar' we mean only that it is sufficiently explicit to determine how sentences of the language are in fact characterized by the grammar" (p. 220). Thus, 'Generative' lay on the explicit description of language grammar given by the linguists. When we say generative grammar means the precise and testable rules of the language without making any demands from the speakers' knowledge of language. Many people fell into the trap of 'Generative' like the Generative Gaff by Botha (1989) where the term has been employed as a synonym to 'productive' rather than as 'formal and explicit'; otherwise, generative grammar it is not used as an electric generator for what people produce rather it is about what they know (Cook & Newson, n.d.).

Smith (2002) stated that the fundamental purpose of the linguistic theory is to explain the process of language acquisition by decoding human beings grammar and the best theory that must be taken to specify this characterization, so a theory with transformations is to be effective. Accordingly, generative grammar states explicitly and precisely the set of phrase structure and the transformational rules in a language and how to transform those structures into others (Cook & Newson, n.d.). That is to say, transformational generative grammar is the ability to produce and understand an infinite number of sentences (Smith, 2002).

1.4.2 The Components of Generative Grammar

According to Chomsky (1965) a complete analysis of phonology, lexicon, morphology syntax, and semantics is called its grammar:

First, Phonology, according to Chomsky (1965) "The phonological component of a grammar determines the phonetic form of a sentence generated by the syntactic rules" (p.16). Thus, it studies the sound patter of human language according to specific rules.

Second, Morphology studies the structure of words and how morphemes are combined together in a given language (Aronoff & Rees-Miller, 2003).

Third, Syntax is the basic component of grammar and it is defined as "the branch of linguistics that studies how the words of a language can be combined to make larger units, such as phrases, clauses, and sentences." (Aronoff & Rees-Miller, 2003, p.265)

Finally, Semantics studies the interpretation of an expressed meaning in a given sentence, it relaters the syntactic structure with a certain semantic representation (Chomsky, 1965).

As far as a grammar has to relate meanings to sounds, two levels of representation has been determined which are the Phonetic Form (PF) that is concerned with generalizations about sounds structure and pronunciation representation of a sentence; and the Logical Form (LF) that is concerned with generalizations about the semantic and the logical representation of a sentence. This relation is usually defined by the lexicon which provides a phonological, a syntactic and a semantic interpretation of every item in the vocabulary. Therefore, "the lexicon is usually said to consist unordered list of lexical items rather than just words" (Smith, 2002, p.51), hence each lexical has properties and features which their meaning cannot be systematically determined from the lexical items of which it is associated with. With the development of generative grammar the lexicon has given a central importance and it has been described as the locus of the variations between languages (Smith, 2002).

1.4.3 Principles and Parameters (P&P) Theory

In order to increase the tension of grammar explanation, there was an attempt to develop the universal principles where Chomsky 1962 in his paper the International Congress of Linguistics proposed the principle of "A over A condition" which this principle eliminated

the use of rules to small unites for the logical assumptions. For example, if a category like (Noun Phrase) consisted as a part of its structure another part of the same category, i.e. another Noun Phrase, then any rule aforesaid the (Noun Phrase) need to be structured as referring to the more inclusive part. As an illustration, the example of _ Harry stirred the stew_ a natural respond might be the question _Harry stirred what?_ such a question maintains the same structure with the same word order of the statement, however an ordinary WH-question indicates a different ward order like in Smith (2002, p.84)_what did Harry stir?_ it is noticeable that "what" is the direct object of "stir" in both questions, i.e. it remains the direct object however it is separated from its verb; that is to say, "what" it has the same function as the Noun Phrase "the stew" in the first statement (Smith, 2002).

Moreover, with the emergence of Principles and Parameters Theory, the term 'generative' has been replaced and affected with another interpretation. Hence, Principles and Parameters theory claimed that human languages constituted of principles without constructing specific rules, i.e. different constructions can be held with general conditions (Cook & Newson, n.d.). Even though, it is allowed to replace the structural rules by general principles, it is necessary to take into consideration the fact that languages are different from one to other. All the possible sentence structures and order may occur in different world's languages, like English ward order is S(ubjet) V(erb) O(bject) and Japanese as SOV. In order to avoid making different rules for each possibility, these differences were attributed to Chomsky's notion "parametric variation" where variation specified a narrow set of rules set of all the possible variants with its association with universal principles (Smith, 2002).

1.5 Linguistic Competence and the Developments of Generative Grammar

According to Chomsky (1965, 1981, 1995) generative grammar has evolved throughout different stages of developments, these stages are stated as follows:

1.5 The Standard Theory (ST)

Generative Grammar theory was first presented in "standard theory", henceforth ST of Generative Grammar in Chomsky's (1965) Aspects of the Theory of Syntax. Chomsky has first presented the theory of grammar in his book Syntactic Structures (1957) which was widely recognized in the linguistic theory but the theory was not concerned neither with the meaning of expression nor with language acquisition. According to ST, grammar constitutes of a number of interacting items syntactic components, lexicon, phonology and semantics. Hence, the grammar provides derivation (transformation) for each meaningful sentence where this derivation starts from the first syntactic components which are called "phrase structure" (Chomsky, 1965). Phrase structure provides analyses to components of the sentence by dividing its constituents into smaller unite like words (Cook &Newson, n.d.). Chomsky (1957) provided a sample to the different components analysis as:

Sentence ⟶ NP + NV		Sentence
NP ⟶ T + N		NP + VP
VP ⟶ Verb + NP		T + N + VP
T ⟶ the	derivation ⟶	T + N + Verb + NP
N ⟶ man, ball, etc.		the + N + Verb + NP
V ⟶ hit, took, etc.		the + man + Verb + NP
		the + man + hit + NP
		the + man + hit + T + N
		the + man + hit + the + N
		the + man + hit + the + ball

Figure 1. Derivation of Sentence Structure (Chomsky, 1957, p.p. 26-27)

It is possible to present the derivation as a form of diagram:

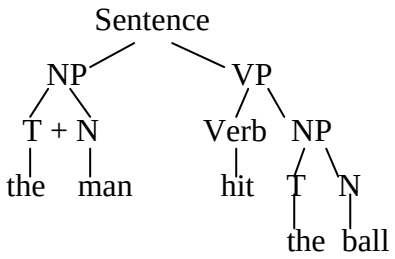
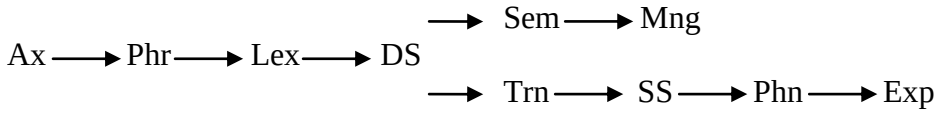


Figure 2. Diagram Represents the Derivation of the Sentence Structure (Chomsky, 1957, p.27)

The derivation begins with a set of Axioms such as "S" for sentences and ends with a pair of (Mng, Exp) where "Mng" stands for the semantic representation (meaning) and "Exp" stands for the phonological representation (expression). According to Chomsky (1965) when inserting the lexical items to the underlying rules of the syntactic components the operation is called "deep structure" which considered as an input to the semantics and syntactic components known as the "transformational structure", the final output of the transformational structure is known as the "surface structure" which is attributed as an input to phonology. That is to say, "The trees generated by Phrase Structure rules were, by definition, deep structures, and the trees produced by transformations operating on this deep structure were, again by definition, surface structure" (Smith, 2002, p.61). The ST attempts to relate indirectly meaning and expression thought deep structure, i.e. in order to determine the meaning of a given expression, ST first recovers it deep structure then excludes it meaning using semantics.

The outline of "standard theory" of generative grammar according to Chomsky (1965):



Ax = axiom, Phr = phrase structure, Lex = lexicon, DS = deep structure, Sem = semantics, Trn = transformational structure, Mng = semantic structure (meaning), SS = surface structure, Phn = phonology, Exp = phonetic structure (expression).

Figure 3. The Outline of Standard Theory of Generative Grammar (Linguistic Competence) According to Chomsky (1965). (Langendoen, n.d., p.7)

1.5.2 The Government and Binding (GB) Theory

Considerably, the theory of generative grammar has evolved to another version which is known as the Government and Binding theory (Chomsky, 1981) where Deep structure was renamed "D-structure" and surface structure as "S-structure". The GB determines the meaning and expression of a given sentence by starting the derivation from the D-structure

which incorporates with S-structure via movement as it is presented in the figure below (Cook & Newson, n.d.). This simple model of grammar has brought out ideas that were significantly effective in the development of the GB theory where grammar was divided into parts which have their own specific role, these roles are known as modules or theories (Cook & Newson, n.d.).

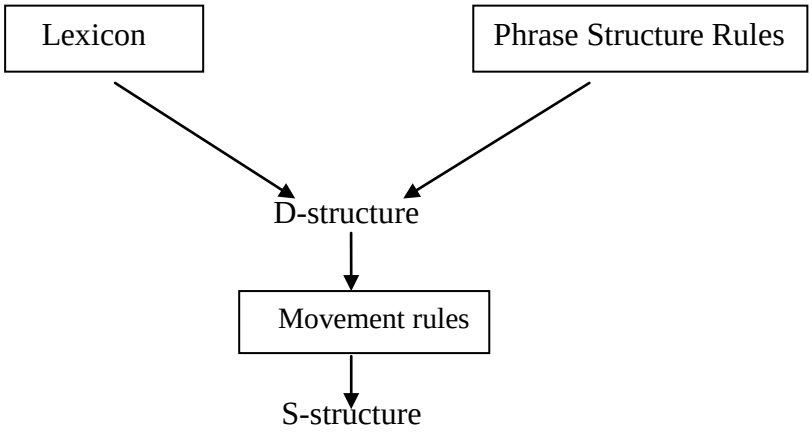


Figure 4. Government and Binding Theory (the Basic Form of the Grammar 1980s-90s). (Cook & Newson, n.d., p.62).

1.5.3 The Move-α Theory

Move-α principle accounts for moving any element anywhere where "α" stands for any category of the constituents, as Chomsky stated "move any category anywhere" (1982, p.15). Thus, the details of what actually moves where are restricted to the generalized transformational rules (Cook & Newson, n.d.). The movement insight was first introduced in "On WH-movement"; for instance, the rules included in questions, relative clauses and other structures "can all move an object from next to its governing verb, and all share a variety of other properties" (p.65), for example (Smith, 2002, p.65):

a. What did Harry stir?
b. The stew which Harry stirred was full of turnips
c. It was the stew that Harry stirred
d. What Harry stirred was the stew

After noticing and formalizing the set of rules mentioned above, they can be reduced to one generalization which is "Move-WH". Therefore, not only the WH-phrases constructions (i.e. phrase containing WH-word) that can be moved, there are other constructions which contain Noun Phrase such as passive forms where Noun Phrase can also move but with different properties. WH-movements are unbounded while the NP- movements are usually bounded as it is illustrated in this example (Smith, 2002, p.65):

a. Marry kissed John
b. John was kissed by Marry
a. It is evident that Marry loves John
b. John is evident that is loved by Marry

Consequently, the first (b) is the passive of the first (a) is grammatical, while the second (b) it cannot be the passive of the second (b), it is ungrammatical, because the pronoun John has moved too far. There are many differences between WH-movements and NP-movements but those differences can be predictable, so that it is possible to reduce all the movements to only one generalization: the principle Move-α (Smith, 2002).

1.5.4 The X-bar Theory

According to Smith (2002) the X-bar theory accounts for "Verb Phrase contains Verbs, Noun Phrases contain Nouns, Adjective Phrases are headed by Adjectives. The obvious generalization is that X phrases contain Xs as their 'heads'" (p. 67). Henceforth, the X tended to be followed by the same category whether X is N, V or A, i.e. Adjective and Nouns can be transitive, intransitive or followed by complement clauses the same like verbs can be as follows (Smith, 2002, 67):

a. John <u>mended</u> the car (Transitive verb)
b. John <u>vanished</u> (Intransitive verb)
c. John <u>thinks</u> that frogs are mammals (Clausal complement verb)
a. John is a <u>student</u> of linguistics (Transitive noun)
b. John is a <u>hero</u> (Intransitive noun)

c. John regrets the fact that frogs are amphibians (Clausal complement noun)

a. John is fond of Mary (Transitive adjective)

b. John is comatose (Intransitive adjective)

c. John is sure that frogs are vertebrates (Clausal complement adjective)

The X-bar theory has introduced an abstract schema which covers all the categories of language equally and introduced other generalization from categories like verbs, nouns, and adjectives to involve all categories like Determiners, Complementizers and so on (Smith, 2002).

1.5.5 The Binding Theory

According to Chomsky (1982) "the theory of binding is concerned with relations, if any, of anaphors and pronominals to their antecedents" (p.06). Hence, the binding is concerned with anaphors like "himself", pronominals like "him", the referring expressions like "John" and their antecedents in sentences such as the following example (Smith, 2002, p.69):

a. John like him
b. John likes himself
c. Bill thinks (John likes him)
d. Bill thinks (John likes himself)
e. He likes John

That is to say, the anaphors and pronouns have different distributions: in (a) "him" does not refer to "John", while "himself" must refer to "John" in (b); "him" in (c) refers to "Bill" but does not refer to "John"; whilst, in (d) "himself" can only refer to "John"; whereas, in (e) just like in (a) where the nouns and the pronouns must refer to different people. Consequently, the Binding theory extracted the generalization that anaphors had to be bound within its category, meanwhile, the pronouns must be free within its category, and the refering expressions are free everywhere (Smith, 2002).

1.5.6 Theta Theory

According to Cook & Newson (n.d.) Theta theory is "A module of the grammar dealing with assignment of semantic roles (θ-roles), such as agent, patient, and goal, to arguments in a sentence" (p.85). With the development of D-structure a certain semantic representation was assigned between elements. As it is illustrated in the following example of the passive form where the element that takes the position of the subject at S-structure is interpreted as the subject of the verb hence it also can take the position of the object in D-structure (Cook & Newson, n.d., p. 80):

The dog chewed the slipper
D-structure: -- was chewed the slipper
S-structure: The slipper was chewed --

Obviously, when it comes to the comparison between the subject and the object positions, a consideration is given to their relationship with the verb. As knowing that "the dog" is doing the chewing and the "slipper" is thing that getting chewed. Thus, knowing that the dogs chew and the slippers are the object chewed by the dog is not due to our pragmatic knowledge rather than it is described by the syntactic structures which associate subjects and objects positions with a certain interpretations. Semantically, the interpretation involves a relationship between elements which called "arguments" and "predicates". A predicate stands for the thing which expresses a relationship while an argument stands for the thing that plays a role in this relationship. Hence, in the previous example, the predicate which expresses a relationship is the verb "chew" and the NPs "the dog" and "the slipper" are the arguments involved in the relationship (Cook & Newson, n.d.).

Generally, a semantic role known as "agent" is when the subject carries the action described by the verb, then in the previous example "the dog" is the agent; the one taking the position of the object which is the argument is called the "patient" as it is illustrated by "the slipper". Semantically, roles like "agent" and "patient" are known as "thematic roles" or

or "θ-roles". Nevertheless, not all subjects are described as agents, and not all objects are interpreted as patients, for example in (Cook & Newson, n.d., p.81):

John sent a letter to Mary

Mary has received something indicated by the preposition "to", so Mary plays the role of the receiver where John is the agent of the verb "sent" and the "letter" is the patient. Hence, Mary is interpreted as the "goal" which is the end point of the action interpreted by the verb. In (Cook & Newson, n.d., p.81):

Mary received a letter from John

Despite the fact that Mary is the subject, it is still described as the recipient and not the agent because Mary is not the one who consciously performed the act of receiving (Cook & Newson, n.d.).

One another major principle in theta theory is "Theta Criterion" or "θ-criterion" which "states that θ-roles can be assigned to only one argument and arguments can only bear one θ-role. Thus θ-roles and arguments are in one-to-one correspondence" (Cook & Newson, n.d., p.85). Therefore, argument cannot be inserted in a structure without having a specific θ-role. In case there is an intransitive verb with an object so the output is ungrammatical. For instance (cook & Newson, n.d., p.84):

Mary smiled John

Obviously, John received no θ-role and the ungrammaticality specified that arguments must bear θ-roles. Furthermore, arguments cannot distribute only one θ-role over several positions, like in (Cook & Newson, n.d., p.85):

The dog chewed the slipper the bone

To conclude, every argument must be assigned to at least one θ-role, and every θ-role must have must have one argument at most assigned to it (Cook & Newson, n.d.).

All in all, the outline of the "Government and Binding" theory of generative grammar (Chomsky, 1995) is:

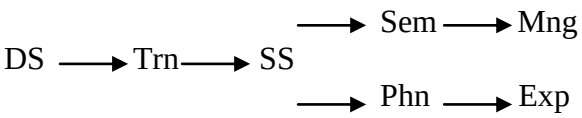


Figure 5. The Outline of Government and Binding Theory (Linguistic Competence) According to Chomsky (1981). (Langendoen, n.d., p.8).

1.5.7 The Minimalist Program (MP)

The Minimalist Program treats the lexical elements as the starting point of the derivation which contributes to both meaning and expression. The application of the transformational rules leads to the phonological representation which is later on called "Phonetic Form" or PF and leads to the semantic representation which is later on called "Logical Form" or LF. Moreover, Any language contains a set of lexical items which is divided into two classes where both classes are listed in the lexicon: the lexical categories include Nouns, Verbs, Adjectives; and the functional categories which include Auxiliary verbs, Determiners, Tenses and Inflectional elements such as these underlined in the examples like (Frogs croak) and (My frog croaks) and other various categories. The lexical categories are called "contentives" because they have meaning which is independent of the sentences; meanwhile, the functional categories have no descriptive content (Smith, 2002).

According to Chomsky (1981) "base rules generate D-structures (deep structures) through insertion of lexical items into structures generated by (phrase rules structure rules), in accordance with their features" (p.5). For example, whether VP requires an object or not depends on the selection of the verb to be inserted (i.e. transitive or intransitive verb), this is called the lexical insertion rule "which takes notes of the structural context in which a particular lexical element can appear" (Cook & Newson, n.d.). For instance in (Cook & Newson, n.d., p.64):

The baby slept

The dog chewed the slipper

The lexical insertion rule inserts a transitive verb if there is an object and inserts an intransitive verb if there is not as it is illustrated in the tree below:

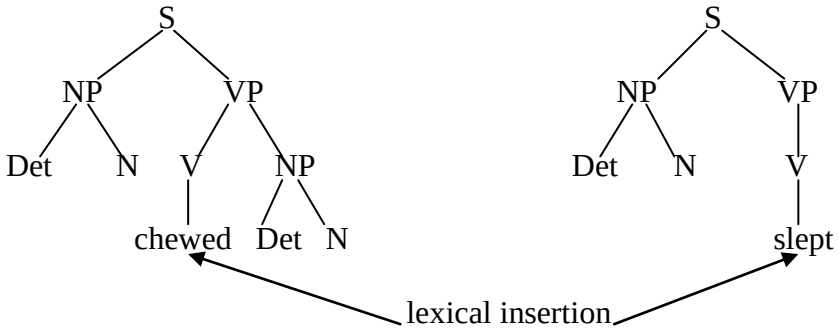


Figure 6. Illustration of Lexical Insertion Generated by Phrase Structure Rules (Cook & Newson, n.d., p.64).

To conclude, the outline of the "Minimalist Program" of Generative Grammar (Chomsky, 1995) is:

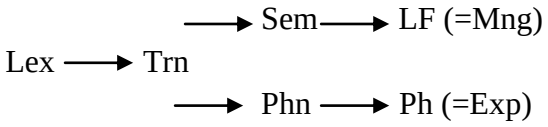


Figure 7. The Outline of the Minimalist Program of Generative Grammar (Linguistic Competence) According to Chomsky (1995). (Langendoen, n.d., p.8)

1.6 Universal Grammar and Second Language Acquisition

1.6.1 Models of Access to Universal Grammar

Several SLA research posed many questions concerning the principles and parameters model of Universal Grammar. SLA researchers have taken for granted the validity of UG account of L1 acquisition. The Fundamental question that was raised is whether L2 learning is like L1 learning or not? This is often referred to as an option between direct access to UG, indirect access, and no access. In direct access, the L2 learners use the mental faculty of UG to the L2 input without any obstacles and acquire grammar which consists of the same principles and parameters just like L1 speakers, i.e. L2 learning is the same as L1 acquisition.

In indirect access, the L2 learners can only have the access to UG via L1 knowledge. In no access, L2 learners are completely disconnected from UG, thus they learn the language via other aspects of the mind (Aronoff & Rees-Miller, 2003).

The evidence for direct access is often phrased in the universal principle used in L1 acquisition, i.e. structure-dependency principle. Therefore, "grammatical transformations are necessarily structure-dependent, in that they manipulate substrings only in terms of their assignment to categories" (Chomsky, 1965, p. 55), that is to say, structure-dependency principle holds all the syntactic categories of the language and it is part of UG because it cannot be learnt directly from the input. Thus, "if L2 learners know something they could not have learnt from L2 input or from their L1 knowledge it could only come from the UG in their minds" (p. 501). Furthermore, according to (Cook & Newson, 1996), on structure dependency test a range of L2 learners of English all scored more than 86% on the test including Finish, Chinese, Japanese L1s. So, as far as the structure-dependency principle is concerned, clearly L2 learners have direct access to UG (Aronoff & Rees-Miller, 2003).

Henceforth, the argument for indirect access to UG is the influence of L1 parameters on L2, i.e. transfer. For instance, in interpreting English sentences, Spanish and Japanese learners are often influenced by the word order of their first language (Flynn, 1987 cited in Aronoff & Rees-Miller, 2003). That is why massive studies considered the pro-drop parameter in terms of the presence of subjects in the sentence. According to White (1986 cited in Aronoff & Rees-Miller, 2003), with the same non-pro-drop parameters in L1 and L2, French learners of English say that "In winter snows a lot in Canada" which is ungrammatical sentence despite the fact that Spanish learners who have pro-drop parameters in the L1; meanwhile, Liceras (1989 cited in Aronoff & Rees-Miller, 2003) argued that English and French learners of Spanish had no problems with learning the pro-drop parameter even though they have different L1 settings. So that, L2 learner's access to UG is affected

indirectly through their L1 and has to be filtered via parameters (Aronoff & Rees-Miller, 2003).

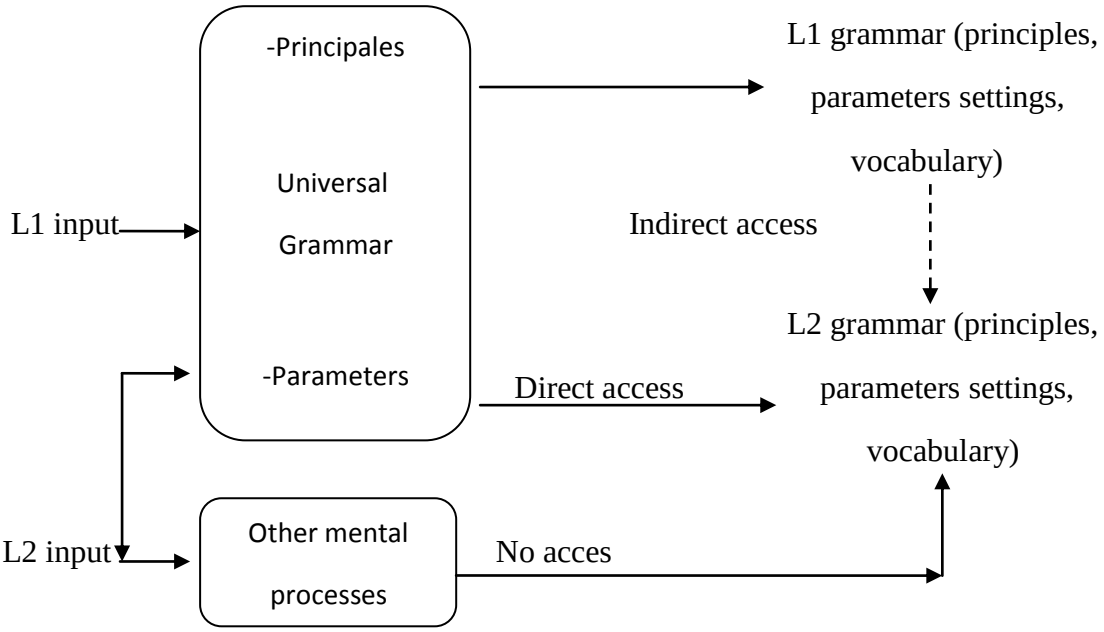


Figure 8. Models of Access to Universal Grammar in SLA (Cook, 1994 cited in Aronoff & Rees-Miller, 2003, p.501).

Finally, the no-access model has been based itself on two suggestions. According to Schachter (1988) and Bely-Vroman (1989) "One is that L2 learning could use other mental faculties than UG, such as general problem-abilities" (cited in Aronoff & Rrees-Miller, 2003, p.502), and the other is that" L2 learners do not acquire the L2 as well as the native speaker"(cited in Aronoff & Rees-Miller, 2003, p.502). Studies have proved that L2 learners score less than native speakers on tests related to cognitive functioning presented via L2 just the same as they fail on tests related to UG syntax (Brown & Humle, 1992 as cited in Aronoff & Rees-Miller, 2003).

To conclude, the relationship between L2 learning and L1 acquisition it has been left as an open problematic till now. As a matter of fact, there are effective similarities between L1 and L2 learners, but also there are differences which are not part of language learning task such as maturity of L2 learners or other aspects like social or cognitive differences (Aronoff & Rees-Miller, 2003).

1.6.2 Learning Strategies

The concept of "strategy" refers to the mental processes used by L2 learners for accomplishing the task of learning and communicating. Recent research about Good Language Learning Strategies attempted to isolate the strategies used by successful L2 learners, they have discovered that in order to involve in the language learning process, good L2 learners adopt learning styles that fit them.

Consequently, O'Malley and Chamot (1989 cited in Aronoff & Rees-Miller, 2003) focused more on learning process and derived strategies into "metacognitive strategies", "cognitive strategies", and "socio-affective strategies". The following definitions are given for these concepts:

1.6.2.1 Metacognitive Strategies

Metacognitive strategies are concerned with managing language learning process by monitoring thinking such as controlling ones speech as it is stated by O'Malley et al. (1985) "Metacognitive strategies involve thinking about the learning process, planning for learning, monitoring of comprehension or production while it is taking place, and self-evaluation of learning after the language activity is completed." (p.560)

1.6.2.2 Cognitive Strategies

Cognitive strategies are directly concerned with individual's process of learning, and they involve the manipulation of the material to be learnt; as it is defined by Rubin (1987): "Cognitive strategies refer to the steps or operations used in learning or problem-solving that require direct analysis, transformation or synthesis of learning materials" (p.23). Chamot and O'Malley (1987) stated that while engaging in cognitive strategy the learner use:

> interacts with the material to be learned by manipulating it mentally (as in making mental images or relating new information to previously acquired concepts or skills) or (physically as in grouping items to be learned in meaningful categories or taking notes on or making summaries of important information to be remembered. (p.242)

Cognitive strategies are used to improve acquisition and comprehension or retention of the target language. Cognitive strategies such as inferencing the meaning from the context, relating new ideas and information to concepts in the memory, elaboration and so on.

1.6.2.3 Socio-affective Strategies

The third type of learning strategies is concerned with the influence of the social and affective process on learning which are often referred to as "socio-affective strategies" which "represent a broad grouping that involves either interaction with another person or ideational control over effect" (Chamot & O'Malley, 1990, p.45). Examples for social strategies such as working as cooperative in peer work or group work for solving problems or for sharing information, an example for affective strategies such as self-talk or, "reducing anxiety using mental techniques that make one feel competent to do the learning task" (Chamot & O'Malley, 1990, p.45). The metacognitive, the cognitive and the socio-affective strategies are one of the most well known classification system of language learning strategies.

Conclusion

This chapter has introduced the notion of linguistic competence according to its founder Noam Chomsky. The linguistic competence and its properties have been considered as the fundamentals and the basic aspects in acquiring a language through a set of comprehensible principles and parameters that EFL learners must be aware of in the process of learning the target language. In addition, the linguistic competence has been explained throughout different theories and approaches to SLA in order to figure the different models of access to

UG where learners use their mental states in acquiring the target language besides to their cognitive strategies which enables them to accomplish successful learning process.

The next chapter will specifically tend to tackle a teaching instruction which is the Computer-assisted Language Learning (CALL) and its great impacts in improving EFL learners linguistic competence, namely their grammar.

CHAPTER TWO:

COMPUTER-ASSISTED LANGUAGE LEARNING (CALL) IN GRAMMAR

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Introduction

The integration of Information Technology (IT) field with Second Language Acquisition (SLA) domain has attracted many researchers and educators insights to examine the efficiency of computer technologies in teaching and learning English as a Foreign Language. For many reasons Computer-assisted Language Learning (CALL) has been considered as an instruction to facilitate learning process due to its beneficial advantages which cope with the new approaches of teaching. Indeed, the emergence of Internet has added numerous benefits to CALL with its various websites that facilitate the process of L2 learning.

The current chapter will provide some basic definitions related to the use of technology in EFL teaching, in addition to the historical overview and the definitions of CALL. Many benefits and challenges of CALL will be sated as well. At last, the chapter will end up with various researches and studies which have been conducted to investigate the role of CALL in improving Second Language Acquisition (SLA) specifically grammar.

2.1 Definitions and Basic Conceptual Notions

The advancement of technology and science has led to the extensive use of computer technologies in the domain of education, namely learning. Accordingly, it is necessary to provide some key concepts which have a relation to Computer-assisted Language Learning (CALL) in order to have an initial and comprehensive clear image about it.

2.1.1 Information Technology (IT)

Information Technology actually is an alternative term for Computer Science (CS) which this latter is more concerned with the architecture and the functions of computers, but Information Technology emphasizes the information processing aspects more than just on the technology itself (Bomodo, 2010). Thus, Information Technology is generally referred to "a technology which uses computers to gather, process, store, protect and transfer information" (Rendulic, 2011, p.1).

2.2.2 Information and Communications Technology (ICT)

Recently, and with the extension of technology, the term Information Technology (IT) has included "communications" and has been referred to as Information and Communication Technology (ICT) or just Information Communications Technology (ICT) (Bomodo, 2010). Historically, the discipline of Technology has been evolved from emphasizing computers' architecture and functions to the communicative aspects of information processing which deal with the meaningful transfers of information between entities (Shortis, 2001 cited in Bomodo, 2010). So, according to Bomodo (2010) "ICT is simply defined as the discipline which deals with the use of technologies to communicate and to process information" (p.05). Accordingly, the ICT domain has involved tools that go beyond computers like the digital tools such as Blackberries, mobile phones, and PDA's. The massive explosion of the internet and the great emphasis of using computers to facilitate communication between different locations have led to a newer term which is Computer-Mediated Communication (CMC) which involves the use of blogs, emails, MSN and so on (Bomado, 2010).

2.1.3 Computer-Mediated Communication (CMC)

The term Computer-Mediated Communication (CMC) stressed the evolution of newer interdisciplinary domains of study including of how the human language and computers/IT combination to serve the individuals' needs. These newer domains of study involve Human Language Technology, Computational Linguistics, and IT-based teaching and learning; moreover, there are even terms like Internet Linguistics or e-linguistics which presents the fact that language and linguistic analysis is so much facilitated by the internet (Bomodo, 2010). The concept of CMC has been defined and used in various ways according to different authors. Hence, according to Baron (1998, cited in Bomodo, 2010) CMC is "a domain of information exchange via computers" (p.142). On the Other hand, Bomodo (2010) sees it as

> The coding and decoding of linguistic and other symbolic systems between sender and receiver for information processing in multiple formats through the medium of the computer and allied technologies such as PDA's, mobile phones and Blackberries; and through media like the internet, email chat, chat systems, text messaging, YouTube, Skype, and more many to be invented. (p.05)

2.1.4 Technology-Enhanced Learning (TEL)

Technology-Enhanced Learning is generally referred to "any form of instruction where technologies are used and applied to facilitate and enhance learning" (DUNDALK, 2013, p.1). Thus, TEL is considered as continuum that moves from the traditional classroom-based learning or completely face-to-face learning that is supported by technology, to a blended learning approach that is more flexible environment which reduces face-to-face contact and depends on the entire use of technology which is a fully online approach (DUNDALK, 2013).

The figure below presents the different phases of Technology-Enhanced Learning:

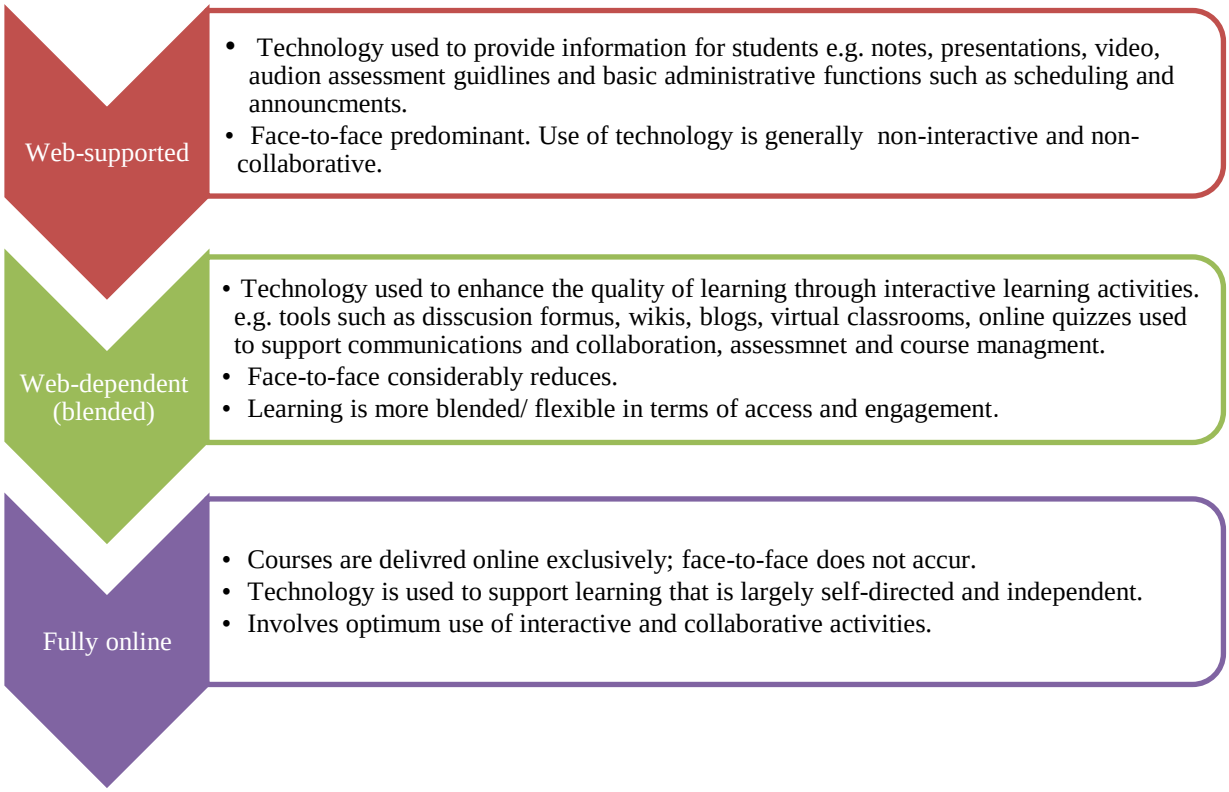


Figure 9. Technology-Enhanced Learning (DUNDALK, 2013, p.1)

2.1.5 E-learning

E-learning is concerned with the intentional use of communications technology and networked information in teaching and learning. Several terms are used to describe this mode of teaching or learning such as virtual learning, distributed learning, online learning, networked or web-based learning. Principally, they all refer to the educational processes that rely on the use of information and communication technology to mdiate teaching and learning activities. Futhermore, the term "e-learning" involves more than virtual learning, distributed learning, online learning, networked or web-based learning. Otherwise, the letter "e" in e-learning stands for "electronic"; thus, e-learning integrate all the educational activities performed by individuals or groups working online or offline through networked or standalone computers or other with other electronic devices (Naidu, 2006).

2.1.6 Computer-Supported Collaborative Learning (CSCL)

Collaboratve learning is concerned with various educational practices in which iteraction between peers is a significant factor in the process of learning, although other factors like the learning materials and intercations with teachers are included. Therefore, the term "computer-supported" refers to the use of technologies in order to shape face-to-face interaction rather than just to connecting remote students (Balachef et al., 2009). That is to say, Computer-Supported Language Learning is a pedagogical approach that demandes the use of computers or internet where learning task necessates social intercations.

2.1.7 Inquiry-based Learning

Inquiry learning is usually refres to "a self-standing way of learning that can be supported by technology that provides the proper ingredients" (Balachef et al., 2009, p.34). Within the process of inquiry learning, students take the responisibilty of their own learning by constructing new perceptions and understandings based on the information they collected through prior experiments and prior experiences. Also, students can regulate their own

learning by taking the initiative during the process of learning by adapting the learning process to their own experiences. Moreover, "Inquiry and Enhanced-language Learning are a good marriage"(Balachef et al., 2009, p.22). Particularly, computer sciences has become an essential and a commonplace in the evolvement of science. The integration of computer technologies to the scientific practice has become part of inquiry as learning and teaching approach (Songer, 1998 as cited in Balachef et al., 2009). As computers have become common in the educational institutions specifically in classrooms, various types of technologies has been used for educational purposes as inquiry-based approach such as virtual labs, microcumputer-based laboratories, Internet and so forth (Balachef et al., 2009).

The inquiry learning environment necessates a set ingredients which are characterized as follows according to Balachef et al. (2009):

- The mission of an inquiry activity that defines an incentive and a scenario in order to motivate learners and provide them with a goal for inquiry activity.
- The source of information in an inquiry performance, the possible data resourse (e.g. simulations, remote lab, real lab).
- The tools for expressing knowledge, to communicate what is learnt (e.g. creating models, writing reports, constructing arguments or explanations).
- The cognitive and social scaffolds that enable students to perform processes they would not be able to perform competently without the tools' support. (p.24)

Computer technologies are considered as a support and a facilitator for collaborative appraoches to inquiry learning by shifting from teacher-centred to student-centred collaborative inquiry (Scardamalia & Berieter, 1991 as cited in Balachef et al. 2009).

2.2 An Overview on Computer-assisted Language Learning (CALL)

2.2.1 A Brief History of Computer-assisted Language Learning (CALL)

CALL has been originated in Western countries in the 1960s as a research phenomena and focus (Warshauer & Healey, 1998). In the following decades, CALL has been evolved through many stages. In each stage, the emerging use of computer technologies has been connected to another developed technologies on a side, and connected to second language pedagogy pedagogies predominating at that time (Warshauer & Healey, 1998).

Levy (1997) argued that the origins of CALL can be traced back in the 1950s and early 1960s when the empiricist theory dominated language teaching. In the 1960s, when CALL was not reffered to as CALL because it was under development, theories to second language learning emphasized the practice and drilling of sudents. Thus, with the emergence of the programmed instruction at that time, software developers recognized that dirll and practice exercices prescribed in the audio-lingual approach were the perfect for computer programs because of their "lack of open-endedness" and "systematic routine" (Levy, 1997, p.15). Moreover, The 1960 was the breaking-ground for inventing Computer-assisted Instruction (CAI) and Programmed Logic for Automatic Teaching Operation (PLATO). After ten years, several teaching programs have been developed where the Time-shared, Interactive, Computer Controlled Information Television (TICCIT) was initiated. Therefore, the mainframe computers have been given a great importance and were seen as the taskmaster from 1960s to 1970s when language teaching wad dominated by the Audio-Lingual appraoch (Kern & Hanson-Smith, 2002).

In 1980s, the TESOL (Teaching English to Speakers of Other Languages) had been changed to the Communicative Language Teaching (CLT) (Levy, 1997). Hence, the primary goal of the communicative language teaching was the notion of communicative competence in the task of teaching and learning, which was distinguished from the traditional way of

teaching that emphasized linguistic competence only (Brown, 2001). Besides to the important changes in language teaching approaches, there were also enormous progress in computing in 1980s. Consequently, a boom in Computer-assisted Language Learning (CALL) was created and given to the inxepensive microcomputers (Ahmad, Corbet, Rogers & Sussex, 1985). In 1980s language teachers started to creat their own CALL materials on the basis of writing programs of the available inexpensive microcomputers. Teachers used the material under the expectations of motivating and encouraging learners to express, discover, and develop their language learning (Warshauer & Healey, 1998).

By the 1990s, the internet has invaded the language teaching and learning domain. Since the use of technologies through internet and the development of new and various materials have been incresingly available inclassrooms, CALL no longer presents only "one homogeneous type of activity, one that can be described simply in terms od stable, invariant framework relating computer, learner and the task" (Levy, 1997, p.39).

According to Warshauer (2000, as cited in Bax, 2003) the history of CALL can be divided into three stages: Structural CALL, communicative CALL, and interactive CALL as they are shown in the table below:

Stage	1970s-1980s: Structural CALL	1980s-1990s: Communicative CALL	21st century: Integrative CALL
Technology	Mainframe	PCs	Multimedia and Internet
English-teaching paradigm	Grammar-translation and audio lingual	Communicative language teaching	Content based, ESP/EAP
View of language	Structural (a formal structural system)	Cognitive (a mentally constructed system	Socio-cognitive (developed in social interaction)
Principle use of computer	Drill and practice	Communicative exrecises	Authentic discourse
Principle objective	Accuracy	And fleuncy	And agency

Table 1. Warshauer's Three Stages of CALL (Warshauer, 2000, cited in Bax, 2003, p.15)

Washauer's popular analysis of the history of CALL has been criticized through different point of views. For instance, Bax (2003) argued that the three stages of CALL coexist today, and the three different forms of CALL did not fall into the timeline, so that he replaced "stages" with "approaches".

The development of CALL still is a controversial matter till now. Currently, the contest is no longer about whether teachers should use the CALL or not, and it is not about whether teachers fear of CALL (Bax, 2003). Hence, the matter is how best to apply this in the future as technology has already considered it as an environment for language learning (Kern & Hanson-Smith, 2002).

2.2.2 Definitions of CALL

Over the last few years, CALL has received a considerable attention as research field and focus where various studies attempted to distinguish the limitations and the characteristics of research being enrolled in the field (Stokwell, 2007). Since 1960, CALL has experienced decades of developments. As a beginning, CALL was considered as a program which ran on

mainframe computers in order to provide learners with drills and practice. Further developments in technologies have led to the evolvement of CALL where this latter can be seen in a more specific way and regarded as the software means designed to reinforce language learning. Generally, it has been defined in much broader senses (Egbert, 2005). Traditionally, CALL has been described as means of presenting, reinforcing, and testing specific items of language. Learners are first provided with rules and some examples, after that, they answer a series of questions that test their knowledge of the rules and the computers provide them with the appropriate feedback and a mark, which maybe stored in order to be controled and checked by the teacher later on (Gunduz, 2005).

Levy (1997) defined CALL as "the search for and strudy of applications of the computer in language teaching and learning" (p.01). Levy's definition was considered very general and it has been widely cited in other CALL researches. Specifically, Hanson-smith, Cao and Egbert (1999, p.1) identified the basis of CALL as "optimal, technology-enhanced language teaching and learning environment, that is, language and content settings in which technology was used as effectively as possible to support learning". Recentlly, Egbert (2005) pointed to CALL as "using computers to support language teaching and learning in some way" (p.3). In order to explain "some way", Egbert (2005, p.3) stated that it was a massive work including all the additions and changes which have happened to CALL, because "CALL has come to include so many different technologies: laptop computers, personal digital assistants (PDAs), digital audio recorders, modem and cable internet access, local area and networking, and more". All in all, Computer-assisted Language Learning (CALL) is an approach to language teaching and learning which requires the use of computers related to internet in order to reinforce language learning.

Some of the characteristics which can determine any CALL program according to Ward (2003) include:

- The nature of language to be taught,
- The determination of language instruction,
- The specification of the languae writing system,
- The identification of the level of language to be taught,
- The choice of language content to be taught, and
- How is it to be taught.

CALL has been defined by many educators and scholars in terms of its usages and its various applications that foster language learning and describing its charactiristics in terms of the content and how to be taught in the process of language learning.

2.2.3 Computer-assisted Language Learning (CALL) Related Acronyms

Other than CALL itself, the readear may encounter many confused acronyms which are referred to the use of computers in language teaching and learning. Hoven (1997) stated that each of the acronyms reflects "the users' perception of the role or place of thecnology in language learning" (p.57); i.e. the focus given to the computers in language learnring process is what distinguishes the acronyms. The main acronyms are lisyed in the figuer below:

CALL	Computer Assisted Language Learning
CAI	Computer Assisted Instruction
ICALL	Intelligent Computer Assisted Language Learning
CELL	Computer Enhanced Language Learning
TELL	Technology Enhanced language Learning
WELL	Web Enhanced Language Learning

Figure 10. List of CALL Related Acronyms (Ward, 2003, p.34)

CALL is a genral term used to cover all the obove acronyms. Accordingly, regardless of what is being taught, CAI indicqtes the use of computers for instruction. ICALL refers to the use of some techniques from the domains of Artificial Intelligence (AI) and Computational Linguistis to develope CALL applications. CELL has just the same meaning as CALL. TELL

covers the same field as CALL, and it is mainly used in North America. Specifically, WELL reflects the use of the internet (or web) in language learning process, and it covers a great part from CALL because computers technologies has become more internet-based (Ward, 2003).

Moreover, Computer-assisted Instruction (CAI) refers to the use of computers as an assistance in instructional tasks. The CAI is used for applications such as tutorials, simulations, drill and practice, and educational games. Moreover, CAI can be used in various fields of study such as mathematics, chemistry, physics, social sciences and so on. Therefore, CALL is used under the umbrella term of CAI where CALL is defined as the use of computers to assist second and foreing language acquistion in instructional tasks, i.e. In breif, CALL is the application of CAI in second language and foreign language learning and acquisition (Merrill et al., 1986).

2.2.4 Categories of Computer-assisted Language Learning (CALL)

According to Warschauer (2000, as cited in Chaka, 2009)**,** CALL technologies are divided into three categories: Mainframe Computer Technologies, PC Technologies, and Multimedia Networked Computer Technologies. Each of these categories aims at assisting specific language features to be practiced in the classroom. Therefore, Warschauer and Kern (2000) argued that Mainframe Technology promotes repititive drilling like grammar, vocabulary, and spelling; reading and pronunciation; and fosters listening and repitition through audio recording models. PC technologies stress the use of language games and text reconstruction, CD-ROMs and DVDs written and oral communicative activities, critical thinking, hypothesis-testing activities and problem-solving. Whereas, Multimedia Networked Computer Technologies emphasize audio and video online conferences, Internet chatrooms and e-mail interactive tasks and activities, and web-based activities. In breif, CALL technologies provide extra wonderful features that enable learners to get involved in the language learning process.

2.2.4 The Design of a Computer-assisted Language Learning (CALL) Program

CALL development project has various starting points for the design of CALL, so that the order of the elements in not important. Here are some general elements in the CALL design process stated briefly (Ward, 2003).

2.2.4.1 Hardware

Computer hardware "refers to the phyisical parts of a computer and related devices. Internal hardware devices include motherboards, hard devices, and RAM. External hardware devices include monitors, keyboards, mice, printers, and scanners." (Christensson, 2006). In terms of CALL, a CALL developer should design the hardware in accordance to the needs of the proposed system. Thus, the hardware decision is quite important, because it determines which software would be availabe or possible (Ward, 2003).

2.2.4.2 Software

Computer software is " a general term that describes computer programs. Related terms such as software programs, applications, scripts, and instruction sets all fall under the category of computer software" (Christensson, 2006). According to Ward (2003), in an ideal CALL world, software development can be extended from making modifications to an actual program using an authoring package to construct and to write a program based on a High Level Languages (HLLs) which are :

> designed to be used by the human operator or the programmer. They are referred to as 'closer to humans'. In other words, their programming style and context is easier to learn and implement than low-level languages, and the entire code generally focuses on the specific program to be created (techopedi, n.d.).

According to Ahmad et al. (1985 as cited in Ward, 2003) using authoring packages is much easier for language teachers to construct CALL programs. So that, the use of authoring packages is one of the easiest ways for CALL construction rather than programming with the

HLL. Hence, some packages have an authoring language provided with a small set of instructions which are available to the user for the production of CALL programs. Recently, the access to authoring packages is becoming quite flexibale for language teachers through the widely available option World Wide Web (WWW) which provides a complete access to authoring packages (Ward, 2003). Currently, there are various and multiple packages availbe for the devolopers in order to invent and create new pages for enhancing the language learning process.

2.2.4.3 Authoring Packages

Often teachers find the commercially produced CALL materials unappropriate and unsuitable in terms of pedagogic content. However, it is not reasonable to convert content constructors and producers into programmers (Bangs & Shield, 1999). Consequently, the use of the authoring packages has been adopted as an approach. Therefore, authoring packages help teachers to develop CALL materials withouht learning how to design a program. Various language lessons and exercises are created with authoring packages on different web pages. Courseware developers or teachers are able to modify with thier own data on the provided templates. Importantly, teachers can develop materials which are suitable and relevent to students needs, and can add and up to date those materials constantly and whenever it is needed (Ward, 2003).

Moreover, authoring packages may impose some constraints and problems such as the fact that packages are new skill for the teacher, or may be the matrials produced do not suit the academic strictness, or may be the final products aimed at lower-proficiency levels. Bangs and Shield (1999) proposed two projects in oder to address such problems. First, The Open University which has developed authoring tools that allow the usages of central engine. They use a combination of node lables and data, hyperlinking and formatting, and scripts to produce CALL materials. Second, MALTED (Multimedia Authoring for Language Tutors

and Educational Development) project is a European-wide project which aims at preventing the recurrence and the duplication of previuos development efforts, and it provides accessible authoring tools. All in all, the authoring packages pave the way to teachers the freedom and the validity in choosing the materials needed in instructing for improving the language learning process.

2.2.4.4 The Internet

The internet has made an easy access to authentic language materials. We can find online newspapers and news services information for the world's major languages, In addition to E-mail, chat and message boards are widely available and feasible for langauge learners (Ward, 2003). Thus, Levy (1997) stated that giving a tutor role to the computer paves the way to teachers for working on more interesting and creative aspects. Otherwise, Ward (2003) asserted that the use of computers and internert may actually place an additional worload for the teachers, so that appropriate web sites must be searched in advance.

2.2.5 Internet-based CALL

In various studies, the internet has been found to support and to strengthen students' linguistic skills by boosting their self confidence (Dooly, 2007), self-instuction strategies (Harris, 2003) and their overall language learning attitudes (Felix, 2001; Kung & Chuo, 2002; Son, 2008). Similarly, several studies have proved that sudents can foster and improve their attitudes, motivation, and perception in language learning through the use of the internet (Felix, 2001; Lee, 2005).

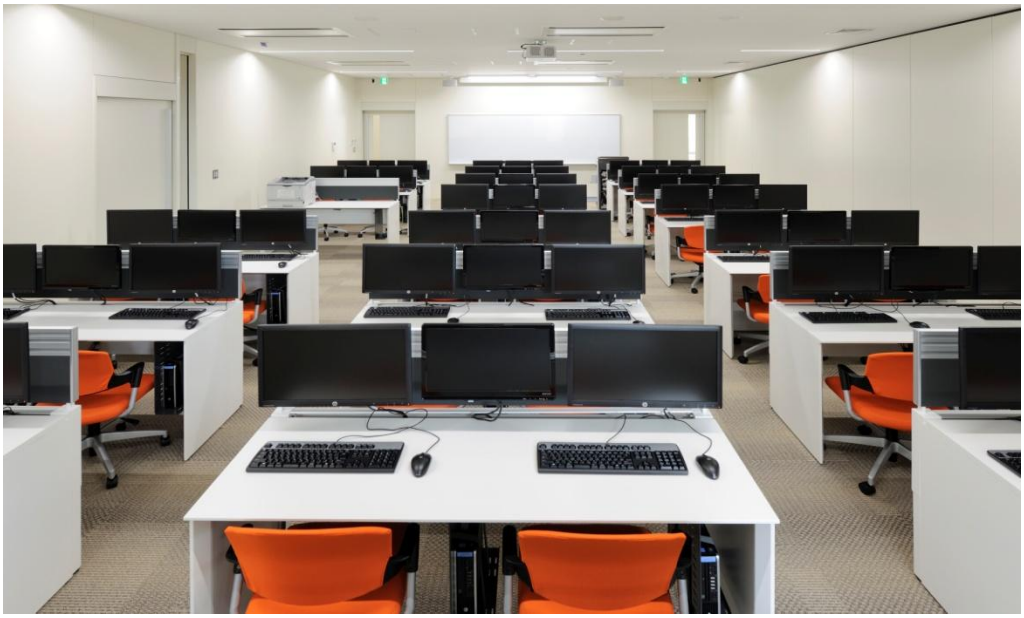


Figure 11. An Example for CALL Classroom (google image)

2.2.6 Web-based Language Instruction in EFL Classroom

Recently, the internet has been evolved rapidly to invade every aspect of people's life and becomes a necessity at homes, administrative insitutions, business, communication, education, and so on. Kerry and Isakson (2000) have seen internet as "perhaps the most transformative technology in history, reshaping business, media, entertainment, and society in astonishing ways. But for all its power, it is just now tapped to transform education" (p.1). This quotation tuerly indicates the significance and the re-orienation of internet that has been brought to the field of education by developing and improving traditional classroom instruction. Hence, the internet attempts at transforming teachers to e-tutors and web-based course developers, and shifting learners from "passive recipients of information to active information-literate producers" (Berger, 1998, p.71), and learning environment becomes "constructive" (Berger, 1998, p.93).

Moreover, Maeroff (2003, p.2) argued that the integration of Internet in education will be widley used as the technology evolves and "E-learning will be an embded feature of education, widely available and no longer an object of controversy". Therefore, the use of

web provides an esay access to certian intersting resources such as animation, texts, graphics, audio videos and so on into classroom environment which made it a efficient, enjoyable, and powerful technology that should be taken for granted. Khan (2001) emphasized that the improvement in developing web technologies have created learning environment that is "well-designed, learner-centred, engaging, interactive, affordable, efficient, easily accessible, felxible, meaningful, distributed, and facilitated"(p.5). These days, the web-based courses and projects are common and widely used because they allow the use of many available and interesting resources in the virtuel library of the WWW (Semonov, 2005; Hirtz, Harper & Mackenzie, 2008).

The web is being used by many teachers for various instructional purposes. Brooks, Nolan & Gallagher (2001, p.9) stated three significant characteristics of web-based teaching:

- Anytime, anywhere meduim.
- Nearly generic multimedia delivery system.
- Capability for supporting active learning system.

According to Maeroff (2003, pp. 6-7) web-based courses take four majore forms:

- Real-time, online, synchronous instruction, in which sudents communicate with teachers and other students from their computers as the teacher teaches the course;
- asynchronous instruction in which students work on thier own and later recieve messages on their computers from the teacher;
- web-based, packaged programmes consisting of a pretest, a tutorial, a practice, and a post test that the student submits online, without contact with teachers;
- traditional book-based courses in which students work online on their own pace, turn them in, and recieve responses, feedback, and recommendations from teachers.

The Internet-based CALL with its feasible and powerful software packages provide an enormous support to teachers in terms of instructing and to learners in terms of impoving their language learning skills. The Internet-based CALL is considered to be a motivational,

an enjoyable, and a vigorous instruction that should be applied in classrooms for the sake of enhancing and facilitating the language learning process.

2.3 Benefits and Challenges of Computer-assisted Language Learning (CALL)

2.3.1 Benefits of Using CALL

Many educators and schoolars stressed the importance of using computers and web-based instruction to foster learners engagement and intercation for improved language learning outcomes besides to the cultural elements that CALL materials afford. Some of CALL's benefits are stated as follows:

2.3.1.1 Motivation and Interset

motivation in which CALL can provide ways to learn English through games, problem-solving techniques via drills, and animated graphics which make the course more intersesting and make learners more motivated in the learning process. This was stressed by Croockes and Schmidt (1991) who have identified some strategies of relating motivation to classroom techniques and curriculum desing. The main focus was on the concret more than the abstract which inclised personalising materials. That is to say the syllabus will consider the concrete aspects and the program will provide quizzes and puzzles to the learners.

2.3.1.2 Atittude

According to Savignon (1972 as cited in Ward, 2003) learners attitude towards the target language and the language proficiency are considerably correlated. Okada et al. (1972 as cited in Ward, 2003) pointed out that negative attitude towards the target language can be determined from the language learning context. Teachers should show the learners that they belong to the digital age so more positive atittude towards the target language will be fostered.

2.3.1.3 Learners Autonomy

Learners autonomy is considered as an important part in learning process. Learners can

develope their critical thinking by enhancing their own skills and strategies to decide the suitable courses to their needs. CALL materials provide learners with templates contain different tips and strategies in order to help them to be effective language learners by themselves (Ward, 2003).

2.3.1.4 Optimal Use of Learning Time

One onther major benefit of CALL programs is the flexibility of choosing the learning time. Winter (1997 as cited in Kiliçkaya, 2007) emphasized the significance of the flexibility learning, leaning anytine, anywhere, anyhow, anything the learners want which is very accessible and valid via CALL and web-based instruction. Learners are given the apportunity to learn, study and review the desired information whenever the apportunity araises without limited time.

2.3.1.5 The Immediate Feedback

The immediate feedback that can be given by CALL in order to encourag students language learning, because delayed positive feedback reduces their interest and the delayed negative feedback affects students knowledge that must be mastered (Brown, 1997).

It is true that CALL programs promote learners autonomy, atittude and motivation, but these are not so important in CALL settings in the longer terms as the element of culture is missing. CALL also provide extra powerful benefits in accordance to EFL context as language cannot be taught apart from its culture.

2.3.1.6 Language Documentation

The printed information available about English language is almost limited and nearly not available online. Therfore, developing a CALL software for English language means collecting and supplementing the prinited material with oral material provided by its native speakers and put online in order to be available in order to be used by a wider audiance which is almost not possible with printed materials. This may help in increasing other contributors

for encouraging to other language and cultural documentation efferots (Ward, 2003). That is to say, CALL allows learners to an easy access to language information and exposes them to the target language context.

2.3.1.7 Multimedia Documentation

CALL programs premit for the multimedia presentation about language and the culture of the target language. Images, audio, and video elements all serve in the documentation of the language in more intersting way. For instance, the videos in CALL material can show a direct and typical scenes for the daily life of native speakers which enhance learners delivery of cultural information (Ward, 2003).

2.3.1.8 Opportunities for the Expression of Culture

Language and culture are inherently inter-related. Learners' communicative competence would be limited if the cultural knowledge of the language is unknown. CALL matrials can provide a complete corpus for the external and public representation of cultural information. The target language communities can have a wide apportunity to publish their stories, songs, anecdotes and the most famous phrases that memebers of the community uses where cannot be found easly in the traditional learning context (Ward, 2003). In other words, CALL materials allow students to be more aware of the target language items which enables them with learning new aspects of the language.

2.3.2 Challenges in Uusing CALL

Eventhough there are many benefits of CALL programs, the application of the present computer technology still have its disadvantages and limitations. Some of CALL disadvantages are stated as follows:

2.3.2.1 Lack of Trained Teachers

Computers will be beneficial just for teachers and students who have basic technology knowledge. Therefore, it is necessary for teachers and students to be skillful and familiar

enough about computers technology and internet before applying CALL intsruction in EFL classrooms (Roblyer, 2003).

2.3.2.2 Lack of Resources

CALL practitionners may encounter many challenges in EFL contexts concerning the shortage of computers and money to implement CALL courseware. Hence, in EFL communities maybe there will be no available electricity, even if it is available, it may not be relaible. Moreover, financial resources are considered very limited in EFL communities, because rarely when you find EFL communities afford computers without any external or additional support. It is quite challenging issue for EFL communities to provide the enough amount of computers in EFL contexts because of the lack of resources (Ward, 2003).

2.3.2.3 Lack of Available Materials

Curently, the main CALL softwares focus on writing, reading and listening skills. There are some speaking softwares which have been developed lately with limited finctions. Usually most of speakers are not knowledgeable enough about the structure of language, or they are not even competent enough about the language. Mostly, CALL courseware developers accept whoever wants to work with them in the audio recording regardless of their clear spoken language or if they are native speakers or not (Ward, 2003). Warschauer (2004 as cited in Ward, 2003) argued that the program should be ideal in terms of the ability to understand a user's spoken input and assess it in terms of appropiatness rather than correctness. That is to say, speaking programs should be evaluated and tested in advance before selecting the suitable one.

2.3.2.4 Cultural Acceptability

CALL developers assume that the developments of CALL materials is culturally acceptable and appropriate for the language speakers; otherwise, it may not be suitibale for EFL learners. Therefore, there are some communities who refuse sharing their culture or

accepting others culture. Also some communities have cultural reservation and prevent sharing images and recordings of people who have died (Ward, 2003). In other words, the cultural acceptability depends on both learners and the native speakers of that language, both have the same atittudes and reservations about their culture because of several reasons such as ethics, races, taboos and so forth.

Although CALL instruction has several limitations, it is still considered as a powerful material with its various benefits that provide an enourmous collaboration in teaching field and learning process.

2.4 Approaches to Computer-assisted Language Learning (CALL) and Second Language Acquisition (SLA)

Decades ago, Second Language Acquistion (SLA) theories principle concern was about the various aspects of intercation in the target language where the role of input, interaction and output have recieved major attention rather than the pragmatic, discourse and sociolinguistic components of the communicative competence (Kim & Rissel, 2008). Moreover, In Krashen's monitor model (1981) comprehensible input is the primary element responsible for developing the interlanguage system and the unique process of promoting language acquistion. Meanwhile many schoolars and educators stressed that the significane of the processed input in supporting language learning, a major emphasis was given to the role of intercation and negotiation of meaning (Ellis, 1985; Gass, 1997; Hatch, 1978; Pica, 1994).

2.4.1 The Interactionist Theory

Mackey & Gass (2006) stated that in addition to the interactionsit claim about the manipulation of input through interaction, also learners require some apportunities for recieveing a corrective feedback in order to regulate their output or language production effectively. Many studies in Second Languge Acquistion field emphasized the interactionist point of view. Therefore, Hsu (1994) asserted that learners' needs and requests for help is a

way to manage the breakdowns in the proccess of understanding what they have learned in interacting with oral passages. Long (1991) identified one of the important key componnets of the the interactionist theory which is the input that was noticebly viewed as beneficial for learners. Also, Liou (1997) argued that the desing of CALL matrials and the courseware reflects the interaction negotiation model of suggested by Long (1991) that's why she used the interactionist account.

Chapelle (2003) indicated three types of basic interaction: interpersonal (between people), interapersonal (within a person's mind), and the interaction that happen between a person and computer (learner-computer). Chapelle noticed that many computer users initiate the computer-learner interaction when they want to recieve comprehension or seek dictionary help they just click on a hyperlink. She asserted that one of the advantages of computer-learner intercation is that the obtaining of comprehensible input. Chapelle (2003) noted that most of SAL researchers agreed upon the enhancement and the enrichement of the of the input is more benificial in learning process rathan than just simple modifications because learners are enountered materials used by the native-speakers of the language.

Chapelle (1989) argued that the application of the interactionist theory to CALL requires an intextion of the perception of negotiation of meaning in two ways. First, Negotiation of meaning needs to be illustrated in face-to-face spoken conversations and in
written communication takes place in network computers as well. Second, the negotation of meaning also must be extended when the midified interaction occurs between the learner and the computer. The computer programs have created various opportunities for modified interaction by providing modified input depends on the demands of the learners where learners engage in the modified interactions by demanding and recieving the modified input, i.e., written texts and oral repititions (Chapelle, 1989).

Moreover, Long (1996) argued that the development of second language acquisition can be facilitated through the interactive tasks that promote the negotation of meaning. Negotation of meaning is the outcomes of the interactional exchange where communication breakdowns occur, so learners recieve ineractionally modified input and they are also pressured to produce intercationally modified output (Swain, 1985). The process of negoatiation of meaning helps learners to compare between their output and the delivered input to make them aware about their mistakes and correct for themselves.

2.4.2 The Sociocultural Theory (SCT)

The sociocultural theory is a basic learning process theory which goes under the umbrella term of constructivism. Constructivism is a theory which claims that humans gain knowledge and generate meaning from an interaction between their ideas and their experiences. According to constructivists, the process of learning is determined by constructing your own knowledge through social interactions with others.Withing the constructictivist theory the attention is given to the learner rather than the teacher, learners are allowed to think and determine the knowledge by themselves. The learner should gain knowledge through the process of self-learning by intercationg with his or her environment.

Levy Vygotsky, a psychologist and a social constructivist, developed a theory of The Zone of Proximal Development (ZPD) which stated the distinction between what a learner can do with assistance and what a learner can do without assistance. Vygotsky argued that a child imitates and follows adult's example in order to develope the ability to accomplish certain tasks without any kind of help. Vygotsky (1978) defined the ZPD as the interval between current development level of learners as it is specified through the independent problem solving and the level of potential level as specified through problem solving with help from adults (experts), or through cooperations with other peers (novices).

Cardenas-Calors and Gruba (2009) assetred that in terme of sociocultural theory, CALL can be seen from the point of view of the novice-expert account, so that, CALL can be seen as the expert who possess and provides information to novice learners who seek at understanding learning materials. When learners (novices) encounter difficulties, they may ask for extra forms of comprehensible input through CALL. Different enhanced input should be exposed to leaners in order to perform a better second language acquistion task. Moreover, Chapelle (2009, p.719) asserted that "CALL is not shorthand for 'the use of technology' but designates a dynamic complex in which technology, theory, and pedagogy are inseparately interwoven". She urged that the pragmatic goal of Computer-assisted Language Learning (CALL) researchers and developers is to invent and create a new learning apportunities in order to consider different theoritical appraoches to Second Language Acquisition (SAL) and the need of developing the role if instruction in SLA.

Chapelle (2009) indicated theoritical perspectives grouped in four major approaches in ordert to illustrate the conncetions between CALL and SAL:

- Cognitive Linguistic (the concept-oriented approch, autonomous induction theory, and Universal Grammar);
- Psycholinguistic (input processing theory, interactionist theory, processability theory);
- Human learning (skill acquistion theory, associative-cognitive creed); and
- Language in social context (conversation analysis, sociocultural, language socialization, complexity theory, systemic-functional).

Chapelle (2009) proposed that the above theoritical approaches can be benificial in the evaluation and the development of CALL materials and courseware. She suggested that the extending use of technology challenges SLA theory, changes the nature of cimmunicative competence, and raises the number of computers in SLA research.

2.4.3 The Communicative Language Teaching

According to Savignon (2002) The communicative Language Teaching is "the ability of classroom language learners to interact with other speakers, to make meaning, as distinc from their ability to recite dialogues or perform on discrete-point tests of grammatical knowledge" (p.3). Therfore, The Communicative Language Teaching is an approach to foreign or second language teaching which asserts that the major goal of language learning is to improve learners' communicative competence rather than the ability just to construct and apply grammatical rules in order to utter correct grammatical sentence but also to know how, when, and where to use them (Richards, J. Platt, & H. Platt, 1992).

Krashen (1985) is one of the most passionate advocates of communicative language teaching. Much of his SLA theory studies were about first language acquisition and he emphasized the importance of the principal element in learning a new language which is the comprehensible input. That is to say, Krashen argued that learners cannot acquire the language without understanding the meaning in second language.

Krashen's (as cited in Nutta, 1996) Monitor Theory contains five hypotheses on how language is learnerd:

- The Affective Filter Hypothesis which is about that learners cannot learn the language if their affective needs are not met.
- The Input Hypothesis which claims that the comprehensible input is the most curcial componenet in second language acquisition where the teacher must provide students with input higher than students' actual level of competence (i+1). The teacher can make the input comprehensible through repetition, through gesturing or through the use of visuals and so on just like the way childern acquire their first language.
- The Acquisition/Learning Hypothesis which is about that learners achieve fluency in learning through subconscious process when thery are exposed to plentiful

comprehensible input, and learning is conscious process which enables students to understand the language rules and apply them just when there is time to operate such as in writings and planned speeches.

- The Natural Order Hypothesis which is about the developmental sequence of language stuctures that are related to individual's process of language acquisition.
- The Monitor Hypothesis which claims that the learnerd sturctures are evaluted by a monitor that is located in the indivual's brain when there is time for planned writings or speeches but it does not accur in spontanous conversations.

Krashen's theory has been reviewed by many schoolars, and one of he most argumetns against his work is the lack of affirmations on interaction and output. Many researchers now emphasize the significance of negotiation of meaning and comprehensible input in classrooms (as cited in Nutta, 1996). Ellis (1985, p.161) has integrated contemporary theory on communicative language teaching inculdes two of the major aspects: input and interaction. He argued that the necessary feature for a rapid SLA evolvement are as follows:

- A high quantity of input directed at the learner;
- The learner's precieved need to communicate in the L2;
- Independent control of the propositional content by the learner, e.g., control over topic choice;
- Adherence to the "here and now" principle, at least initially;
- The performance of a range of speech acts by both native speaker/teacher and the learner;
- Exposure to high quantity of directives;
- Exposure to high quantity of extending utterances;
- Opportunities for uninhibited parctice, which may allow for new opportunities to experiment using new forms.

In order to achive communicative competence, teachers must expose learners to more authentic materials for constructiong the appropriate meaning of the target language which enables them to advance in the processof learning the language, and the CALL provides a suitable range of original materials that teachers use to develope learners' communicative competence.

2.4.4 The Cognitive and Social Processes of L2 Learning

Pica (1997, p.56 as cited in Chapelle 2003, p.38) asserted that there is a relationship between SLA research and teaching where this connection is significant in navigating the Bermuda triangle between CALL, materials and classroom teaching as it is illustrated in figure bellow. She argued that a connection exists:

> …with respect to their mutual interests in the cognitive and social processes of L2 learning….From the cognitive perspective among the most prominent [interests] are L2 comprehension, planing, and production; motivation; and attention to, and awareness of, L2 meaning and form. Social processes include various forms of communication and interaction, ranginf from collaborative dialogue to instructional intervention with mediation through negotiation of meaning.

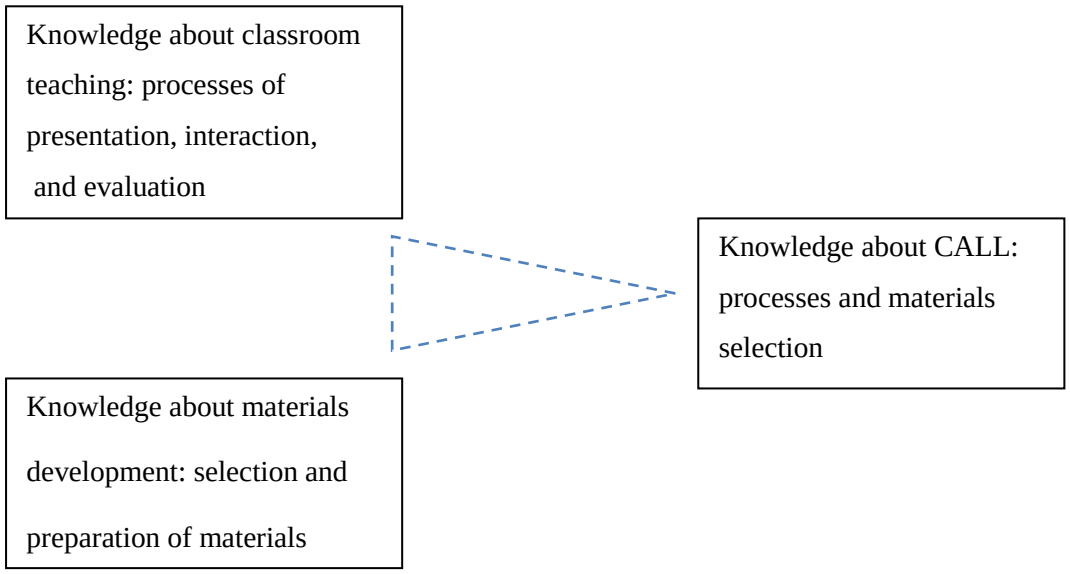


Figure 12. The distinct knowledge bases of classroom teaching (materials developmen) And CALL (Chapelle, 2003, p.38)

Even though Pica's work was about SLA research and teaching in general, the point was equal for more researches about particualr issues that arise in seeking some guidance concerning CALL. The cognitive and social processess through which learners acquire the target language has beeen considered as the most important guidance regarding how CALL tasks might promote second language learning as it is illustrated in the figure below (Chapelle, 2003):

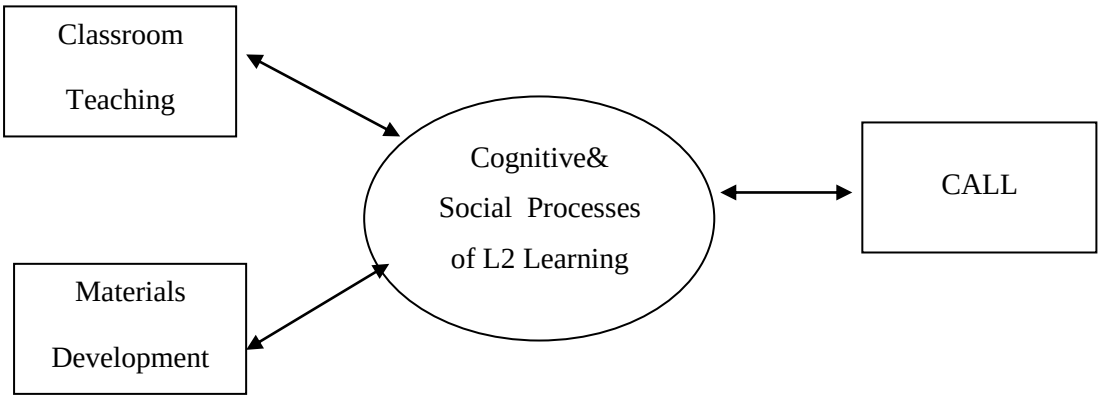


Figure 13. The relationship between knowledge of classroom teaching and knowledge of CALL (Chapelle, 2003, p.39)

Reasearches about the cognitive processes have developed hypotheses linked to the need for learners to understand linguistic competence and to highlight the gaps between their knowledge and the target language. Moreover, motivation has been seen as crucial for to engage learners in the process of comprehension by using their cognitive efforts which make them asking for help or make them noticing the knowledge gap. Henceforth, in order to make learners notice the knowledge gap, they need to produce the target language so that it can be enhanced when learners have time to organize their production and when they are allowed for correction. Meanwhile, the study of social processes is similar to cognitive processes but it emphasizes the role of the context in which processes take place. From the perspective of cognitive and social processes, CALL tasks has been considered as means for providing

learners with the input, for offering interactions, and the opportunities they allow for linguistic production (Chapelle, 2003).

2.5 CALL and Second Language Grammar Instuction

2.5.1 Related Reasearches to Computer-assisted Language Learning (CALL)

The application of technology in teaching and learning domains were the main focus in several researches and studies, including the remarkable developments in technology and CALL researches (Zaho, 2003). This section presents a number of researches and studies about CALL as follows:

Chapelle and Jamieson (1986) conducted a research about the effectiveness of computer-assisted language learning (CALL) in the acquisition of English as a second language. The study has been undertaken on students whose their native language either Spanish or Arabic in an intensive program where the students' proficiency in English was measured by an oral test of communicative competence and TOEFL test. The results of the research revealed that there was no big difference on the criterion measured by the use of CALL and showed that some CALL materials was suitable for some types of learners more than others and it is requisite to take into consideration various learner variables when conduction a research about the effectiveness of CALL.

Jamieson, Chapelle and Preiss (2004) declared that CALL evaluation might be ideally appropriate regarding second language acquisition principles. In their research, a subcategory of criteria were used to assess the design of English as a second or foreign language (ESL/EFL) online courses, Longman English Online. The results of the evaluation of the study showed that most of the criteria were suitable with the rspect of some were better than others.

Lasagabaster and Sierra (2003) indicated that several studies have been conducted to explore the attitudes of teachers and students of towards CALL, though a small attention was

given to researches about students insights and impressions. In their study, a considerable attention was given to students in order to express their point of views and insights about the the software they used in the laboratories. They have provided the sample of 59 participants with questionnaires to be completed, and the results showed that students agreed upon that the software is a necessary tool in the foreign language classrooms.

The field of Computer-mediated Communication (CMC) also has been considered as a powerful implementation of communicative, interactive and computer-based tasks which can yield to ample benifits for L2 learners. De la Fuente's (2003) research examined the various effects of computer-mediated interactions and face-to-face interactions in the process of acquiring L2 word meaning by Spanish learners. In order to assess task participation and assessment performance, oral and written, receptive and productive measures were used. Task-based and interactionist reasearch has examined the effect of pused output production in the process of negotiation and the possible influnce of negotation of meaning on L2 vocabulary impovements.

Tsai and Jenks (2009) conducted a quasi-experimental research to investigate the impact of the a Teacher Guided Multimedia CD-ROM program as a complement in teaching vocabulary to EFL students. Students from two different classes were divided to the control group and experimental group for four weeks. The same teacher taught both groups with the same identical lessons where the control group udegone only two hours of traditional instruction. The results revealed that the experrimental group which used the CD-ROM program obtained more English vocabulary than the control group which which has received the traditional instruction.

Godwin-Jones (2009) admitted that the use of computers to help students in practicing and learning grammar constructions is traced back to the earliest days of CALL. With the emergence of the Internet age, CALL began to shed lights more on the new potentails of

computer-mediated communication where the awarness of grammar structures, forms and rules for adults learners is a necessary component of online learning. Therefore, a new recognition focuses on integrating grammar forms into communication-centred or networked language learning environment rather than just teaching grammar in isolated activity. Moreover, the older grammar excercises formats like fill in the blanks and multiple choices require to be applied in more innovative way with engaging interactions and with communicative goals where contextual, informative and corrective feedback should coexist with exercises. Also Godwin-Jones (2009) claimed that the inticipation today is that online programs will provide innovative, integrated and intelligent exercises where students will pay attention to grammar structures and forms.

Several studies have been conducted by many educators and researchers have proved the remarkable impact of CALL in influencing the Second Language Acquisition domain, specifically in improving EFL leaners grammar and vocabulary which lead to the amelioration of their linguistic competence through distinct ways which CALL matrials can provide with evolvement of technology.

2.5.2 CALL and Corrective Feedback

It has been asserted that corrective feedback can be used to pay learners' attention to the mismatches between their production and the target language forms, and plays a valuable role in facilitating the acquisition of L2 grammar which cannot be learnt from input alone (Sauro, 2009). Lyster and Ranta (1997) proposed categories of corrective feedback as follows:

- Explicit Error Correction: for example: You should say visited.
- Metalinguistic Feedback: questions, comments, or information related to the ill-formed utterances, for example: there is a mistake. It is past tense, did you use the past tense.

- Elicitations: an immediate for learners to reformulate. For example, How de we say that in the past? Try that again. Yesterday we…
- Repititions: repitition of the part of the utterance which contains the error. For example: yesterday we visit* my aunt.
- Recasts: Implicit reformulation of the part or all the utterance of the learner which contains the error. For example: Yesterday we visited my aunt.
- Translations: Target language translation without the use of L1.
- Clarification Request: Asking for help when problems in accuracy or comprehension occur.

It has bee asserted that it is quite essential to investigate the role of corrective feedback in facilitating the process of L2 acquisition through CALL in order to know the relationship between grammar instruction and CALL research, because it has been founded that corrective feedback is a form of consciousnes-raising (Lightbown & Spada 1990). Nagata and Swisher (1995) argued that the computer could offer individualized grammatical consciousness-raising through intelligent corrective feedback. The traditional CALL feedback informs the learner with an incorrect or a missing word meanwhile intelligent CALL feedback provides a detailed meta-linguistic notifications about the type of error and goes beyond just simple explanations about the error. Moreover, Douhty (1991) indicated levels of consciousness-raising through shifting from explicit rule explanations to providing examples related to difficult structures. Nagata and Swisher (1995) suggeted that CALL embody the entire range of consciousness-raising.

Kim's (2009) research investigated the effectiveness of the types of feedback that differ in its explicitness in a Computer-assisted Language Learning (CALL) environment in addition to adaptive strategies of feedback delivery based on students' performance. A computer-based tutorial context was designed to examine both issues and to assist advanced Korean learners

of English to decrease overpassivization errors in academic writing. Hence, the results proposed that among the corrective feedback types presented (adaptive, traditional, constrastive, and adaptive), the constative type of feedback which included the target language structures was determined as the most effective feedback type for raising the ability of Korean ESL learners awareness towards the recognition and the correctness of overpassivisation errors.

Several online grammar exercises also provide interactive feedback that needs students' refelction on their answers. These exercises permit students to understand the reseans behind their correct and incorrect answers. Such exercises does not determine only why their answers are right or wrong, but also guide them to appreciable understanding of grammatical rules as they are encouraged to think, decided, and explore on the orientation of their own learning (Milton, 2003).

The corrective feedback with its various categories and types help students to recognize their L2 errors and correct them immediatly which leand in a considerable enhancement in certian grammatical rules as well as it promots their autonomy and critical thinking.

2.5.3 CALL and Grammar Instruction

McCarthy (1994) investigated the contributions and the limitations of computers in the presentation of grammar drills, specifically in second language acquisition by contrasting the the traditional tetxtbook instruction with the new technology. McCarthy (1994) noticed that Comptuer-assisted Language Learning (CALL) is derived from the traditional language teaching, though CALL has some benefits in seven areas: 1) display of items; 2) organazed materials; 3) feedback and scoring; 4) random representations and volume of materials; 5) animation and graphics; 6) focused toturial assistance; 7) cognitive orientation.

Zaho's (1996) research examined ESL directors' atittude towards Comuter-assisted Instruction (CAI) in American Universities and percieved that some ESL directors agreed

upon that the computer presented a better appropriate way for ESL in teaching grammar and vocabulary more than reading and writing where some significant statistical differences have been found between groups. Therefore, a modified version of Menke's 1989 questionnaire was distributed to 203 ESL directors with a return rate of 71%. Study results revealed that directors with more than 100 students strongly agreed that computer is a benificial tool for raising learners motivation and attention towards language learning. Directors with 50-100 students strongly agreed that computer is actually a poweful tool for ESL for teaching grammar and vocabulary more than reading and writing. Consequently, directors with CAI strongly agreed more than those without CAI that computer is a highly significant tool raising students participation in language learning.

Moreover, Nagata (1997) continued to examine the influence of computer-assisted metalinguistic instruction in teaching grammatical structures by using two to assess students' use of Japanese partical with 14 students of second year at college. The results proved that the application of computer exercises with meta-linguistic feedback were useful for students to comprehend difficult grammatical concepts.

Furthermore, Nutta (1998) contrasted the effectiveness of Computer-assisted Language Learning (CALL) grammar instruction with teacher-directed grammar instruction with the use of the ELLIS program with 53 post-secondary ESL students in an Intensive English Program (IEP). The results found that CALL grammar instruction was notified to be more effective than teacher-directed grammar instruction for post-secondary ESL students in an IEP. The results determined that CALL instruction was an effective method for teaching L2 grammar.

Conclusion

This chapter was an attempt to review the basic notions related to Ccomputer-assisted Language Learning (CALL). Moreover, it tried to provide a historical background about

CALL and its different deffinitions according to several educators. Also, the chapter tackled the various benefitis and the challenges of CALL and how web-based teaching can be applied in EFL classroom. Futhermore, the chapter hilighted the the importance of the input, interaction, and motivation in Second Language Acquistion (SLA) by stating approaches related to CALL and SLA fields. Finally, the chapter stressed the significance of corrective feedback that CALL materials provide and the significance of CALL in grammar teaching according to several researches and studies.

Computer-assisted Language Learning (CALL) is a new educational descipline which addresses the use of computers and web-based packages for the sake of promoting lereners autonomy, motivating learners to acquire the target language, engaging learners in the learning process, and the most of all improving EFL learners' knowledge of language, namely their grammar. Despite of the pelntiful advantages that CALL materials provide, it sill an ill-defined concept because of the different challenges and perspectives related to it. Therefore, many EFL parctitioners suggested the possibility of replacing the traditional learning with CALL.

CHAPTER THREE:

FIELDWORK AND DATA ANALYSIS

CHAPTER THREE: FIELDWORK AND DATA ANALYSIS

Introduction

The current study aims at exploring the impact of the Computer-assisted Language Learning (CALL) instruction in improving EFL learners' linguistic competence; intrinsically, the present chapter demonstrates the field work and the analysis of the collected data. Initially, it presents a theoretical background on the research methodology underlying the study. Also it attempts to describe the rational of each data collected methods and the adopted strategy that are used to examine the hypothesis under investigation. It includes the description of each date collection method, data analysis and the interpretation of the results in addition to the statistical procedures. Therefore, the chapter provides with a careful disscussion of the findings in order to answer the research questions, and to test the hypotheses suggested in the general introduction.

3.1 Rational for Research Approach

This study has been conducted through a mixed methodology because "this combination has a great potential for future research as it can bring out the best of both approaches while neutralizing the shortcomings and baises inherent in each paradigm" (Dornyei, 2003, pp. 130-131). First, a quasi-experimental research has been adapted in order to evaluate the effectiveness of the instructional program and to answer the first research question which stated "will the use of Computer-assisted Language Learning (CALL) programs for learning English language improve EFL learners' linguistic competence". Second, a students' questionnaire and students' evaluation form aimed at collecting both numerical and descriptive data in order to answer the second research question which stated "how do students perceive the benefits of CALL in assisting their linguistic competence, particularly their grammar". Third, a teachers' interview intended to gather teachers' attitude towards the instructional program and to answer the last research question of this research which stated "what would be the attitude of teachers and learners towards the use of CALL programs". As

such, the current study quantitatively and qualitatively describes the data gathered by means of a quasi experiment, a students' evaluation form and a students' questionnaire, and a teachers' interview.

3.2 The Quasi-experimental Study

The purpose of the quasi-experimental study was to explore the impact of the Computer-assisted Language learning (CALL) instruction in improving EFL learners' linguistic competence. Methods and procedures used in this quasi-experiment, including the sample selection, the quasi-experiment description, the experimental program description, the tests construction as well as the data gathering procedures are described in this chapter.

3.2.1 Sample and Population

The population of this study was Third-Year LMD students of English as a Foreign Language at Mohamed Kheider Biskra University of Biskra. Based on a simple random sampling technique, fifteen (15) EFL students have been chosen and volunteered to participate from the total number of four-hundered and fifty (450) EFL students. Having a sample from the overall population allows the researcher to make clear and appropriate generalization as it is asserted by Ross (2005, p.1 as cited in Meddour, 2014) "The information derived from the resulting sample is customarily employed to develop useful generalizations about the population". The experimental group consisted of eleven (11) females and four (04) males as participants which have studied grammar as official session for four semesters (i.e. two years). The reason behind the selection of this sample was simply that the linguistic competence is the foundation of mastering the target language, in addition to all their courses are built upon grammar constructions and rules.

3.2.2 The Description of the Quasi-experiment

As a matter of fact, the true experimental research design is considered as the standard for assessing and evaluating the usefulness of an instruction program and the improvements of

students' performance, thus "quasi-experimental studies may be more feasible or appropriate" (Moore, 2008 as cited in Meddour, 2014). Henceforth, there are some common feature between true experiments and quasi-experiments, fundamentally to find out the relationship between variables which results from a particular treatment or manipulation.

According to Cohen, Manion & Morison, (2007, p, 257 as cited in Meddour, 2014), the quasi-experimental studies may take different designs like,

- The one group pretest-posttest design,
- The non-equivalent control group design,
- The time series design.

Moreover, according to Moore, (2008 as cited in Meddour, 2014) all the above designs can provide helpful discussions of cause and effect relationship between the variables of the study.

The present study which aims at exploring the effectiveness of Computer-assisted Language Learning (CALL) on EFL students' linguistic competence adopts the quasi-experimental method for one main reason which is to examine the effect of CALL on improving EFL learners' linguistic competence. Consequently, the one group pretest-posttest design has been chosen to examine the resulted outcomes from the integration of CALL in EFL classroom. Therefore, the one group pretest-posttest design helps in measuring the relationship between the variables which are the experimental program and students' achievement in tests.

Moreover, the one-group pretest-posttest design consisted of a pretest, treatment level, and then a posttest, it aimed at colleting the necessary data on the experimental group before and after the treatment where the pretest-posttest scores aim at presenting information about the sample's learner competencies and performance. The treatment level which takes place during a period of time allowed the researcher to measure the potential effect caused during the

experiment and helps in measuring the difference between means in the pretest and posttest. According to Krik (1995, p.26 as cited in Meddour, 2014), the one-group pretest-posttest design allows for two hypotheses, the alterative and the null hypothesis as it is shown in the formula below which permits in testing the research hypothesis:

$$H_{0}: \mu_{1} - \mu_{2} = \delta_{0}$$

$$H_{1}: \mu_{1} - \mu_{2} = \delta_{0}$$

δ_{0} is usually equal to 0

Basically, the one-group pretest-posttest design necessitates collecting multiple forms of data in order to make relevant inferences, analysis, and interpretations of the study outcomes. Hence, the tests scores would be accompanied with course evaluation form checklist at the end of the treatment in order to collect qualitative data which would provide with detailed information about the quantitative results.

Practically, the current study with the whole one-group pretest-posttest design has been conducted in five weeks, two sessions per week with an hour and a half for each session where two sessions have been postponed for some administrative issues. The one-group pretest-posttest design sessions have been administratively divided as follows: a session for the pretest, eight sessions for the treatment level, and a session for the posttest. During the treatment level, the one-group study participants used computers in the Multimedia Laboratory at the Faculty of Letters and Languages. There are 20 computers in the laboratory where each computer runs on the version of Microsoft Windows 7 Professional. Each student had his/her own computer to work on the English Grammar Secrets Online Program.

3.2.2.1 Experimental Program Description

To attain the impact of Computer-assisted Language Learning (CALL) on the performance of the participants, the researcher selected the English Grammar Secrets online program because the content format and grammar presented in the software are identical to the courses' content which have been taught previously to the participants. The English Grammar Secrets program actually is Pearson Brown and Caroline Brown's (2010) book presented in an online software format and a PDF format. Therefore, The software combines instruction and practice in one program, it has some noteworthy features such as: animated grammar presentation, like moving squares and rectangles during practicing the exercises, the extensive grammar practice which provide multiple exercises including the dynamic practice as fill in the gaps through listening, the illustration and guidance of how grammar exercises work by providing an animated sample, and the ongoing evaluation which provides and immediate feedback through practicing exercises which allows the participants to monitor their own progress. The English Grammar Secrets online courseware took the advantage of everything multimedia has to offer including words, animations and movements, sound, colors and interactivity.

Moreover, The English Grammar Secrets online courseware uses the deductive model by dividing the English language into various teachable units or grammar categories such as tenses (i.e. past simple or present simple), the imperative form and the passive form, conditional and so on. The software presents the course in the form of rules and some examples first, then it provides practice exercising in accordance to the explanations of grammar point.

3.2.2.2 Tests Construction

According to Cohen, Manion, and Morison (2007, p.414 as cited in Meddour, 2014), "in tests, researchers have at their disposal a powerful method of data collection". Hence, a

pretest and a posttest have been conducted in order to gather the necessary relevant data about the participants' performance before and after the experiment.

Practically speaking, the pretest was administered one day before the experimental treatment, and the posttest was administered after one day from the last session of the experimental treatment, i.e., the tenth session. Thus, the tests evaluated students' achievements on tenses, modal verbs, and mixed words grouped by topic to assess their vocabulary and sentences structure. These grammatical units have been chosen on the basis that they are considered as the most difficult units encountered by students. Both the pretest and the posttest instruments were from George Yule (2006) book Oxford Practice Grammar and from Vocabulary Games and Activities (2013) PDF book. The content of both pretest and posttest approximately resembles the content of the official instruction tests and matches the activities presented in the English Secret Grammar online software.

The pretest has examined tenses, model verbs, and vocabulary, and it has been constructed into four parts. The first part was concerned with fill in the gaps test that included four sentences which were scored objectively. There were four set of verbs to fill in the gaps using the past simple or past continuous. Students were instructed to complete the sentences with the appropriate set of verbs and to conjugate the same set of verbs in the correct tense. The second part was concerned with fill in the gaps test as well, which included text completion with six verbs in addition to the presented modal verbs. The students were instructed to complete the text with the appropriate forms of can and could plus the appropriate conjugation of verbs. The third part was concerned with questions vs. answers matching and fill in the gaps test. There were four questions and four answers with six verbs to fill in the gaps. The students were instructed to match each question with each answer in addition to conjugate the verbs in the present perfect or in the present perfect continuous. Finally, the fourth part was considered with sentences reorder which consisted of six mixed sentences to

assess students' vocabulary and to evaluate how they constructed correct grammatical sentences. Each sentence contained a mixed set of words grouped to the same topic which is “sounds”. The students were instructed to rearrange the words to make complete sentences. Consequently, the posttest has taken the same directions and the same format as the pretest with different content as it is shown in the Appendix E.

3.2.3 Analysis and Interpretation of the Scores

At the end of the treatment, participants scores in both tests (pretest and posttest) were, collected, interpreted and analysed statistically and represented graphically using the experimental research conventional quantitative descriptions, namely the frequency distribution of scores in both tests, the mean, standard deviation, T-test and hypothesis testing because these statistics "are the most widely used measures in research reports and papers" (Calder & Sapsfords, 2006, p.214 as cited in Meddour 2015).

3.2.3.1 Statistical Consideration

In order to attain the difference between the pretest and posttest results statistically, we need to compute the mean, the variance, and the standard deviation. However, we decided to calculate the standard deviation using the frequency distribution of scores.

- **The Mean:** it is symbolized in writing as $\overline{X}$, which represents the average of scores. The formula of mean is as follows:

$$\overline{X} = \frac{\sum Fx}{N}$$

$\overline{X}$: Mean F_x : Score Frequency N: Number of scores Σ: The sum

- **The Standard Deviation (SD):** is used to calculate to what extent a set of scores varies in relation to the mean. The formula of SD is as follows:

$$SD = \sqrt{\frac{\sum x^2 - \overline{X^2}}{N}}$$

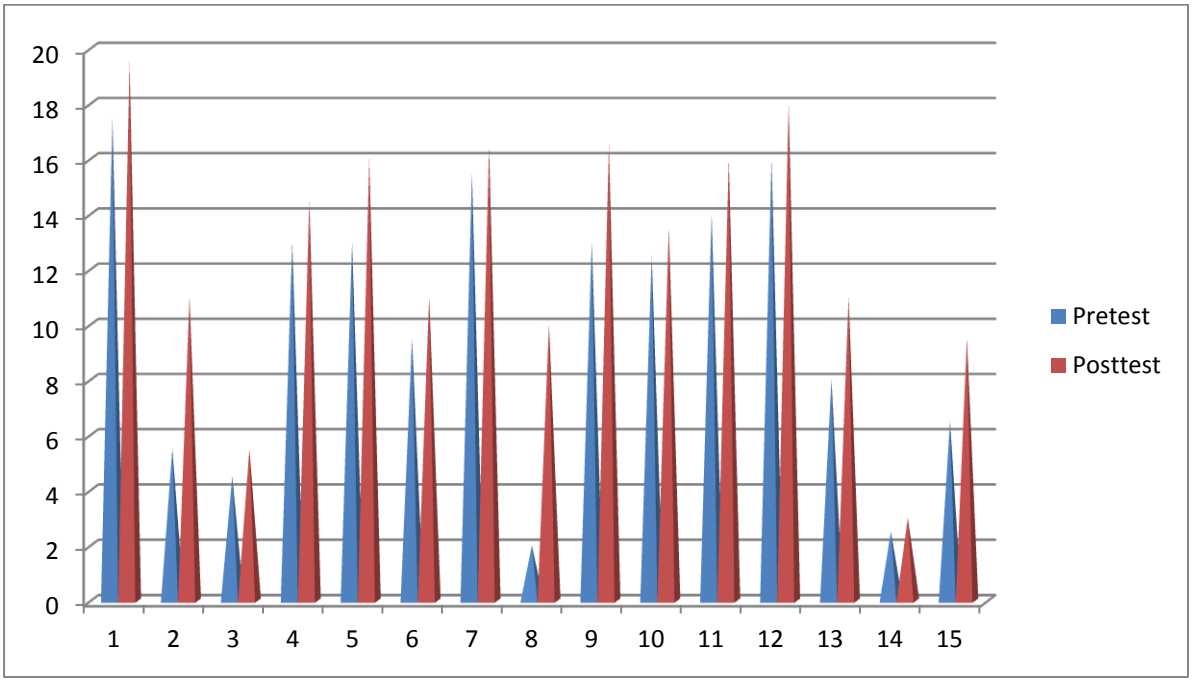
3.2.3.2 Students' Scores

The table below shows the obtained scores in the pretest and posttest respectively. We have considered students' initials which are ordered alphabetically in accordance to their last names as pseudo names.

N	Students' names	Pretest	Posttest
01	A. F	17.5	19.5
02	A. B	5.5	11
03	B. N	4.5	5.5
04	Ch. E	13	14.5
05	Ch. N	13	16
06	D. A	9.5	11
07	Dj. S	15.5	16.5
08	Gh. S	2	10
09	G. A	13	16.5
10	F. H	12.5	13.5
11	F. S	14	16
12	M. I. E	16	18
13	M. F	8	11
14	S. W	2.5	3

15	T. A	6.5	9.5
Sum of scores $\sum x$		**153**	**191.5**
Mean of scores ($\overline{X}$)		**10.20**	**12.77**

Table 2. Pretest and Posttest Students' Scores



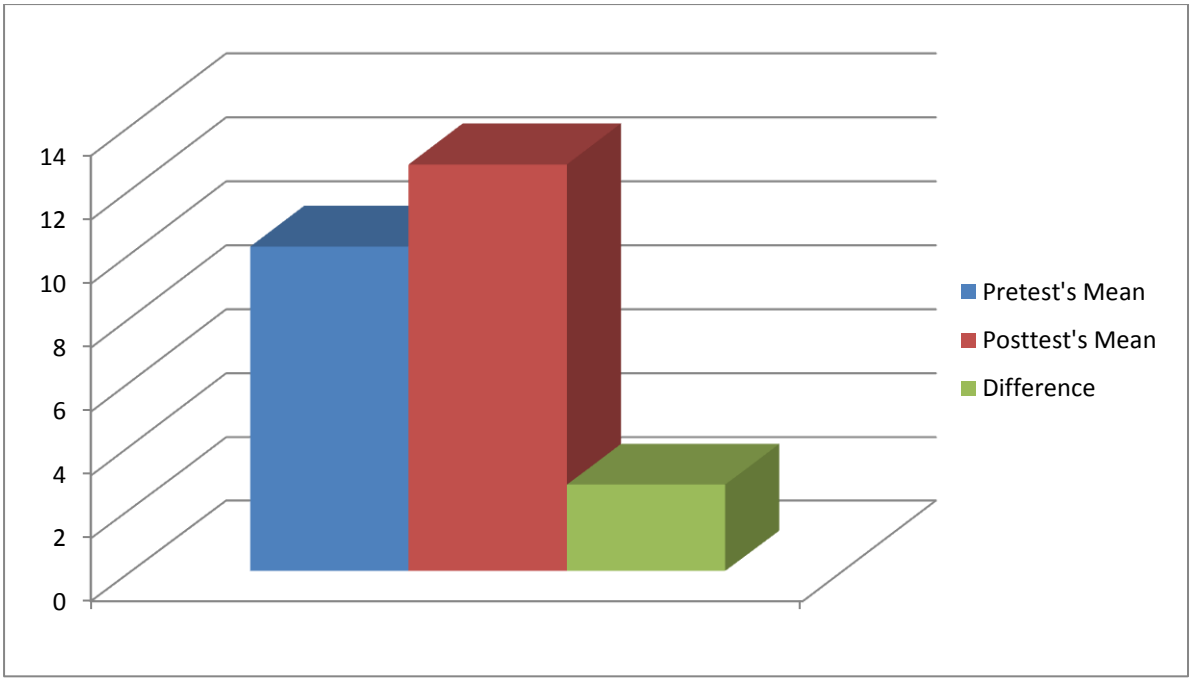
Graph 1. Pretest and Posttest Students' Scores

The table 1 and the graph 1 demonstrate that there is a noticeable progress in participants' scores from pretest to posttest, which is expressed in the sum of scores (153 vs. 191.5) and the difference in means (10.2 vs. 12.77). The table below shows how participants achieved in both tests by comparing statistically the means of scores.

Tests	**Pretest**	**Posttest**	**The difference in the means**
Means	10.20	12.77	2.75

Table 3. Pretest and Posttest Means of Scores

The graph (3.2) below presents the overall picture of the means of scores in pretest-posttest study.



Graph 2. Pretest and posttest Means Compared

From the table 3 and graph 2 displayed results, we notice the considerable difference in participants' scores from pretest to posttest, which is indicated by the difference in the score means (2.75) that initially indicates progress in the test performance by the participants. Therefore, we can make preliminary inferences on the participants better performance to the claim that is due to the adaptation of Computer-assisted Language Learning (CALL) instructional treatment that participants have gone during the quasi-experiment.

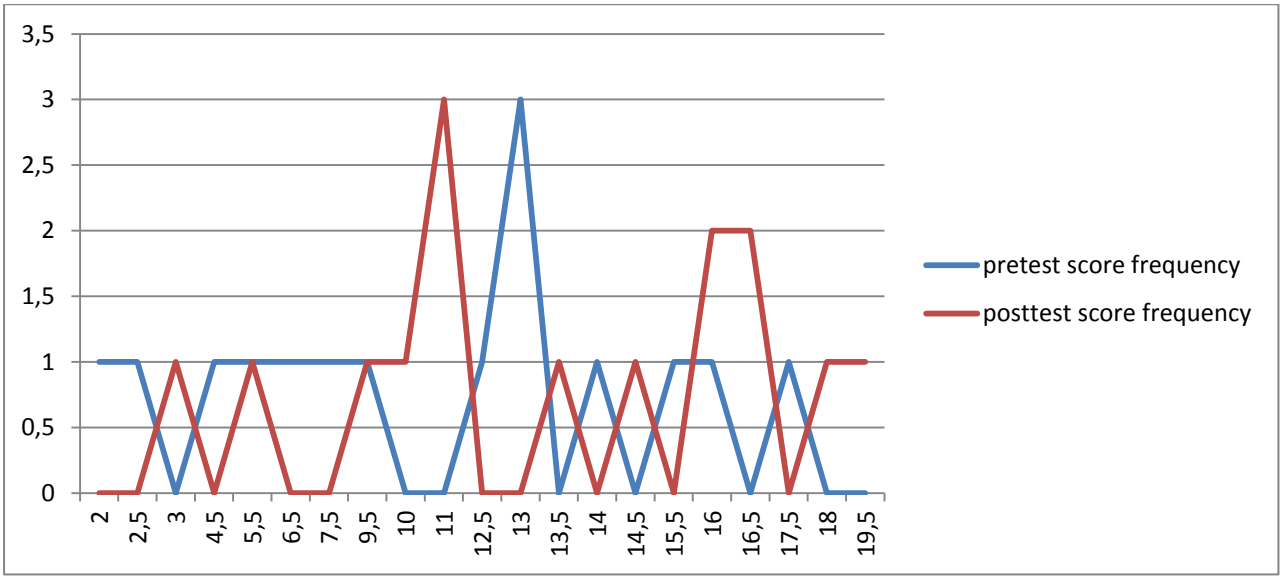
Frequency distribution of the pretest and posttest is shown in the table 3.

Pretest	
Score "X_{pre}"	Frequency "F"
2	1
2.5	1
4.5	1
5.5	1
6.5	1
7.5	1
9.5	1
12.5	1
13	3
14	1
15.5	1
16	1
17.5	1
Sum of "F"	**15**

Posttest	
Score "X_{post}"	Frequency "F"
3	1
5.5	1
9.5	1
10	1
11	3
13.5	1
14.5	1
16	2
16.5	2
18	1
19.5	1
Sum of "F"	**15**

Table 4. Frequency Distribution of Score Values

The graph below shows the frequency of score values



Graph 3. Frequency Score values of Pretest and Posttest

We need to determine the range of scores in both tests, the scores above and below the average, and the lowest and the highest scores in order to assort the required statistical procedures for the above frequency distribution score values. One needs to highlight these elements for one purpose which is making relevant assumptions and implications of the scores values in relation to the experimental treatment that participants have experienced. Starting with the pretest, we observe that:

- The scores values in pretest range from 2 to 17.5 with the supremacy of the score (13).
- 7 scores less than the average 10 and 8 scores more than the average 10.
- The score 13 being the highest score frequency.

As far as the posttest is concerned too, we notice the following points:

- The score values in posttest range from 3 to 19.5 with supremacy of the score (11).
- 3 scores below the average 10 and 12 scores above the average 10.
- The scores 16, 16.5, and 11 being the highest score frequency.

The calculation of the Mean and Standard Deviation (SD) of the pretest is presented in table below:

Pretest			
Score "X_{pre}"	Frequency "F"	Frequency Score Fx	Square of Frequency Score Fx^2
2	1	2	4
2.5	1	2.5	6.25
4.5	1	4.5	20.25
5.5	1	5.5	30.25
6.5	1	6.5	42.25
7.5	1	7.5	56.25
9.5	1	9.5	90.25
12.5	1	12.5	156.25
13	3	39	1521
14	1	14	196
15.5	1	15.5	240.25
16	1	16	256
17.5	1	17.5	306.25
Sum of "F"	N=15	ΣFx= 152.5	ΣFx^2= **2935.25**

Mean	**Standard Deviation**
$\overline{X} = \frac{\sum Fx}{N} = \frac{152.5}{15} = 10.17$	$SD_{pre} = \sqrt{\frac{\sum x^2 - \overline{X^2}}{N}} = \sqrt{\frac{2935.25 - 103.42}{15}}$ $= \sqrt{188.78}$
$\overline{X}_{pre}$ **= 10.17**	SD_{pre} **= 13.73**

Table 5. The Frequency of Scores, the Mean, and the Standard Deviation of the Pretest Scores

The Table 6 below demonstrates the score frequency, the Mean, the Standard Deviation of the posttest scores.

Posttest			
Score "X_{post}"	Frequency "F"	Frequency Score Fx	Square of Frequency Score Fx^2
3	1	3	9
5.5	1	5.5	30.25
9.5	1	9.5	90.25
10	1	10	100
11	3	33	1089
13.5	1	13.5	182.25
14	1	14	196
16	2	32	1024
16.5	2	33	1089
18	1	18	324
19.5	1	19.5	380.25
Sum of "F"	N=15	ΣFx= 191	ΣFx^2= **4514.25**

Mean

$$\overline{X} = \frac{\sum Fx}{N} = \frac{191}{15} = 12.73$$

$\overline{X}_{post}$ **= 12.73**

Standard Deviation

$$SD_{post} = \sqrt{\frac{\sum x^2 - \overline{X^2}}{N}} = \sqrt{\frac{4514.25 - 162.05}{15}}$$

$$= \sqrt{290.14}$$

SD_{post} **= 17.03**

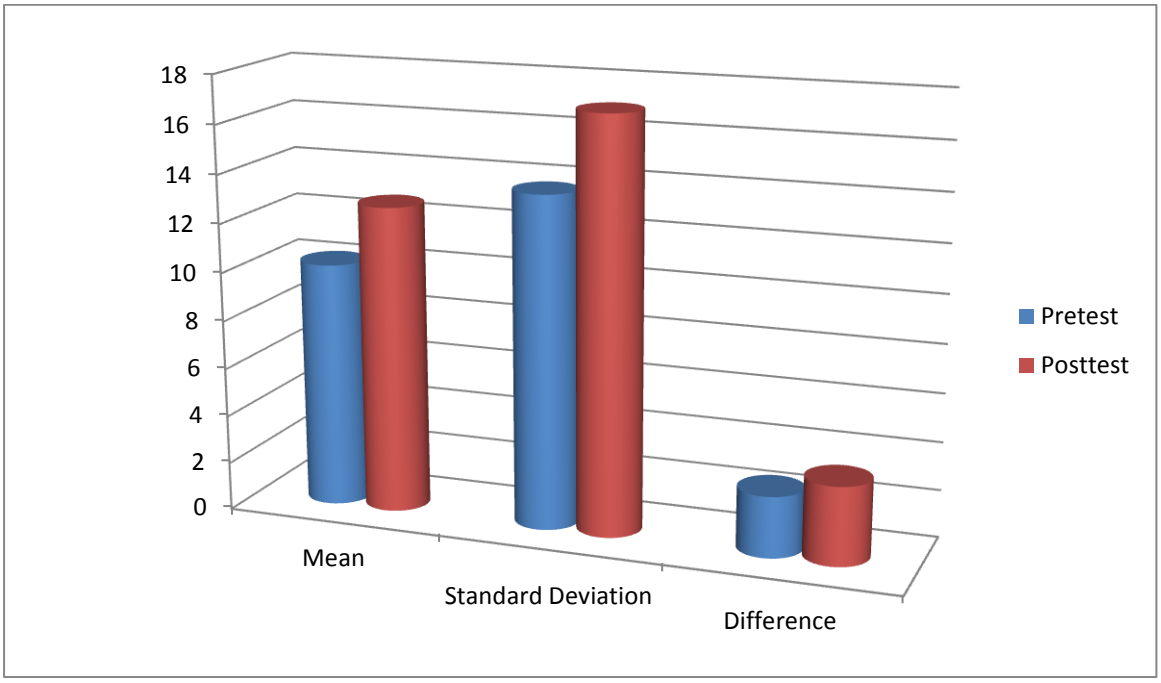
Table 6. The Frequency of Scores, the Mean, and the Standard Deviation of the Posttest Scores

Comparison between two tests descriptive statistics demonstrates the difference between pretest and posttest Mean and Standard Deviation as it is shown in the table below:

Descriptive statistics	Pretest	Posttest	The difference
Mean	10.17	12.73	2.56
Standard Deviation	13.73	17.03	3.30

Table 7. Comparison of the Pretest and Posttest's Mean and Standard Deviation

The graph below shows the difference between the Mean and the Standard Deviation of the above table:



Graph 3. Comparison of the Pretest and Posttest's Mean and Standard Deviation

According to the results displayed in the table 6 and the graph 3, the Computer-assisted Language Learning (CALL) instruction, which participants have gone through the experimental treatment, has slightly increased the participants' scores in the posttest. Otherwise, the difference between the Mean and the Standard Deviation are not highly noticeable to the extent to claim that the instruction has greatly improved students' performance. However, the instruction has left great impact on participants' better scoring

which is expressed in the remarkable progress of the majority of the participants. Therefore, in order to confirm this slight difference statistically, one needs to obtain extra descriptive statistics for better consolidation of the results which is the calculation the T-test.

3.2.3.3 T-test Calculation

The **t-test** is considered as the most appropriate test to compare between two means. It is used to reveal whether there are statistically significant differences between two tests or two groups.

According to Cohen, Manion, and Morrison (2007, p.543, as cited in Meddour, 2014), in order to calculate the **t** value, the following formula needs to be used:

$$t = \frac{\text{sample (or test)one mean} - \text{sample (or test)two mean}}{\text{Standard Error of the difference in means (SE)}}$$

To calculate the Standard Error (SE), the following formula needs to be applied:

$$SE = \frac{SD}{\sqrt{N}}$$

SD: Standard Deviation **N:** The number of the sample, which is N=15

Also, we need to consider these statistics:

$\overline{X}_{pre}$= 10.17

$\overline{X}_{post}$= 12.73

SD_{pre}= 13.73

SD_{post}= 17.03

So,

$$SE = \frac{SD}{\sqrt{N}} = \frac{17.03-13.73}{\sqrt{15}} = \frac{3.3}{3.87} = 0.85$$

SE= 0.85

Standard Error of the difference in means is **0.85**

With applying the above t-test formula, we obtain the following:

$$t-test = \frac{\overline{X}_{post-}\overline{X}_{pre}}{SE} = \frac{12.73-10.17}{0.85} = \frac{2.56}{0.85} = 3.01$$

t = 3.01

- **Dgree of Freedom**

According to Brown (1995, p.167 as cited in Meddour, 2014), "the degree of freedom (*df*) for the t-test of independent means is the first simple size minus one plus the second sample size minus one". It helps to find the critical value for "t".

$$df = (N_1 - 1) + (N_2 - 2)$$
$$= (15 - 1) + (15 - 1)$$
$$df = 28$$

- **Alpha Decision Level**

"The language researcher should once again set the alpha decision level in advance. The level may be at $\alpha < .05$ or at the more conservative $\alpha < .01$, if the decisions must be more sure" (Brown, 1995, p.159 cited in Meddour, 2014).

In the current pretest and posttest studies, we decided to set alpha at $\alpha < .05$, which means only 05% chance of error can be tolerated. The test is directional (tailed) because there is a sound logic and a theoretical reason to expect one mean to be higher than the other (CALL instructional treatment). Therefore, one tailed test predicts that the group will score more highly in the posttest than the pretest; consequently, it is chosen because "it is stronger than the two tailed test as it makes assumptions about the population and the direction of the outcome" (Cohen, Manion, and Morrison, 2007, p.504, cited in Meddour, 2014).

- **Critical Value**

Since alpha is set at $\alpha < .05$ for one tailed decision, *df* = 28 and the corresponding critical value for "t", in Fisher and Yates' Table of critical value, is **1.67**, then we obtain:

$$t_{obs} > t_{crit} \ (3.01 > 1.67)$$

- **Hypothesis Testing**

Now, all the necessary information for testing our hypothesis have been collected in table

Hypotheses Testing: $H_0 : \overline{X}_{post} = \overline{X}_{pre}$

$H_1 : \overline{X}_{post} > \overline{X}_{pre}$

The null hypothesis H_0 means that there is no statistically significant difference between the means of the group in the pretest and posttest. Meanwhile, the alternative hypothesis H_1 suggests that there is statistically significant difference between the means in the pretest and posttest.

Alpha level: $\alpha < .05$, one tailed (directional) decision.

Observed statistics: $t_{obs} = 3.01$

Critical statistics: $t_{crit} = 1.67$

Degree of freedom: *df* = 28

Table 8. Hypothesis Testing Rule

3.2.3.4 Statistical Significance and the Size Effect of the Tests

Since the observed statistics is higher than the critical value (3.01>1.67), the null hypothesis H_0 is not supported at P<.05. Automatically, having rejected the null hypothesis then the alternative hypothesis is accepted. This means that there is only 05% probability that observed mean difference: $\overline{X}_{post} > \overline{X}_{pre}$ (12.73>10.17) appeared by chance, or a 95% probability that was because of other factors than chance factors. The null hypothesis is

rejected which means that we are 95% sure that the relationship between the dependent variable "D" (the posttest scores) and the independent variable "ID" (the CALL instructional treatment) did not occur by chance. Hence, we are in the position to support the alternative hypothesis H_1 which claims that students' better output and grammar improvement is affected by the instructional input (the CALL and online treatment).

The statistical significance of the tests results is proved; therefore, the researcher needs to attain what is called "the effect size" of the treatment. The effect size (Eta squared) is calculated by the following formula:

$$\text{Eta Squared} = \frac{t^2}{t^2 + (N1-1)} = \frac{9.06}{9.06+14} = \frac{9.06}{23.06} = 0.39$$

The corresponding effect of this value (0.39) from Cohen guidance (1988) shows that there is a very large effect of the input (X) on the output (Y), in which the input is the Computer-assisted Language learning (CALL) instructional treatment and the output is students' scores in the posttest. Therefore, the effect sizes statistically reveals the considerable difference between the scores of the pretest and the posttest which is due to the exposure to an instructional program to find out the impact of integrating Computer-assisted Language Learning (CALL) instruction in improving EFL students' performance in linguistic competence.

All in all, the participants had been exposed to online software during the period of the CALL instructional treatment in order to confirm the effect of such treatment on EFL learners' linguistic competence. The remarkable progress of the participants in the posttest has statistically proved the powerful benefits of Computer-assisted Language Learning in improving EFL learners' linguistic competence. Therefore, the null hypothesis is rejected at

alpha level P>.05 which indicated that the output of the treatment were purely the result of the treatment rather than the chance of other factors, which in turn has been confirmed with the computation of the size effect. Confirming the alternative hypothesis supports the substantial claim that the Computer-assisted Language Learning (CALL) instruction as an innovative teaching media in improving EFL learners' linguistic competence.

3.3 Students' Evaluation of the Instruction Effectiveness

Students' evaluation of program effectiveness has become a significant source of data for teachers to determine the success or the failure of their instruction. This section will provide the aim and rational of the students' evaluation form, the layout of the evaluation form and the interpretation and the analysis of the present students' course evaluation form and highlights its importance.

3.3.1 Rational and Aim

Students' evaluation form is another data collection method used in the present study in order to confirm the worth of the actual instructional program. Students' evaluation form is "related to decisions about the quality of the programme itself and decisions about individuals in the programme"(Richard & Schmidt, 2002, p.188 as cited in Meddour, 2014). Therefore, in what concerns our study, the students' evaluation forms have been distributed to the participants at the last session after having the treatment, i.e. at the eighth session. The students' evaluation form aimed at identifying the participants' views and perceptions towards the presented instruction, as well as the materials and the activities. The substantial aim of the evaluation form was to provide teachers with worthy reflections and useful insights to make relevant changes and improvements in teaching practices.

3.3.2 The Layout of the Evaluation Form

The evaluation forms have been administered for the same sample of the experimental research at the end of the intervention in order to obtain the participants' ratings of the

usefulness of the program they followed on their overall achievements. The distribution of the evaluation forms took place at the last session which was posttest's session and their collecting was immediately done after students finishing the posttest. The evaluation form has taken the shape of a checklist which was designed as a likert-scale wherein the participants could indicate to what extent they agree or disgree with each statement. Moreover, the evaluation form (see appendix F) consists of three parts. The first part covers aspects of the course related mainly to the materials used. The second part is concerned with exploring the effectiveness of the activities. The last part attempts at evaluating learners' motivation and interest towards the presented tasks.

3.3.3 Analysis and Interpretation

The students were asked to complete the form by putting an (×) in the circle that corresponds to their opinion in the checklist. The results are displayed as follows.

3.3.3.1 Evaluating Learning Materials

In this part of the checklist, students were asked to agree or disagree with statements about the CALL as an instruction, the utility of CALL materials, the relevance of information that CALL materials provide and so on. The objective is to measure students' satisfection with the materials that CALL presented and to what extent the materials were useful to meet their expectation. The results are summarized in table 9.

Statement	Strongly agree	Agree	Nuetral	Disagree	Strongly disagree
The instruction was useful for me as a student.	06	07	02	00	00
	40%	46.67%	13.33%	00%	00%
The materials used meet my learning needs.	02	13	00	00	00
	13.33%	86.67%	00%	00%	00%
The materials modled student-centred strategies.	02	10	03	00	00
	13.33%	66.67%	20%	00%	00%
The materials presented relevant and useful information	08	07	00	00	00
	53.33%	46.67%	00%	00%	00%
The materials allowed for raising my scores and success.	07	07	01	00	00
	46.67%	46.67%	6.66%	00%	00%

Table 9. Participants' Evaluation of the Materials

Table 9 demonstrates participants' ratings of the statements related to the learning materials in assisting them to cope with the course needs. To start with, out of 15, 07 participants (46.67%) agreed that the instruction is useful for them as students, 06 participants (40%) strongly agreed, and 02 participants (13.33%) were neutral. Over half of the participants consider CALL instruction with its materials suitable and useful for them as students. Hence, the table 9 shows that 13 participants (86.67%) agreed that the materials used meet their learning needs, and 02 students (13.33%) strongly agreed with the statement. The overall of the participants positively evaluated the learning materials as appropriate for their learning needs. Therefore, as far as student-centered strategies and learners' autonomy are concerned, 10 participants (66.67%) agreed that CALL materials modeled student-centered strategies. 02 participants (13.33%) strongly agreed with the given statement and 03 participants (20%) were neutral. This high percentage of pleasant evaluation confirms Ward's (2003) claim that CALL materials provide learners with templates contain different tips and strategies in order to help them to be effective language learners by themselves.

Moreover, the table 9 indicates that (53.33%) of participants strongly agreed that the materials presented relevant and useful information, and (46.67%) of them agreed with the given statement. All of the participants strongly revealed that CALL materials provided relevant and useful information which meet their learning objectives and level as they are exposed to authentic materials. The last item of the evaluation of the learning materials rates the extent of success and raising scores that CALL material may allow. The table 9 shows that 07 participants (46.67%) strongly agreed that the materials allow for raising their scores and success. Another 07 participants (46.67%) agreed with the statement and 01 participant (6.66%) was neutral. These affirmative statistics prove that adopting CALL as an instruction with its various and powerful materials encourages students at raising their scores and seeking well achievements. All in all, participants show great agreement about CALL

materials which affirms Hanson-smith, Cao and Egbert's (1999) claim which identified CALL as "optimal, technology enhanced language teaching and learning environment, that is language and content settings in which technology was used as effectively as possible to support learning" (p.1).

3.3.3.2 Evaluating the Lessons and Activities

In this part of the evaluation, students are asked to express their approval on statements related to software lessons and activities that CALL provides, namely their appropriateness to learning needs and objectives, the way they help students in improving their linguistic competence, the way they cover the main aspects of language such as grammar and vocabulary, and their appropriate level of difficulty. Here are the results.

Statement	Strongly agree	Agree	Nuetral	Disagree	Strongly disagree
The software package activities and lessons were appropriate to my learning objectives and needs.	05	10	00	00	00
	33.33%	66.67%	00%	00%	00%
The activities presented helped me to improve my level in linguistic competence.	04	09	02	00	00
	26.27%	60%	13.33%	00%	00%
The online activities content included the main aspects of language such as grammar and vocabulary.	07	08	00	00	00
	46.67%	53.33%	00%	00%	00%
The activities were in the appropriate level of difficulty.	07	05	03	00	00
	46.67%	33.33%	20%	00%	00%

Table 10. Participants' Evaluation of Lessons and Activities

The results displayed in the table 10 indicate that there is a considerable agreement with the statement concerning the appropriateness of the software's lessons and activities to students' objectives and needs; 10 participants (66.67%) agreed and 05 participants (33.33%) strongly agreed. All the participants reported that the software package activities and lessons used were appropriate to their learning needs and objectives. Therefore, 09 participants (60%) agree dwith the statement reporting the assistance of the activities to improve their level in

linguistic competence, 04 participants (26.27%) strongly agreed with the statement and 02 participants (13.33%) were neutral. Participants' high percentage of agreement confirms Godwin-Jones's (2009) that the anticipation today is that online programs will provide innovative, integrated and intelligent exercises where students will pay attention to grammar structures and forms.

Henceforth, when it comes to the main aspects of language such as grammar and vocabulary which the online activities include, out of 15 participants, a sum of 08 of them (53.33%) agreed and the remained 07 of them (46.67%) strongly agreed with the statement. Consequently, all the participants agree upon the fact that the online activities content includes the main aspects of language such as grammar and vocabulary which in turn confirms Zaho's (1996) research findings wherein directors with 50-100 students strongly agreed that computer is actually a powerful tool for ESL teaching grammar and vocabulary more than reading and writing. The last item of the lessons and activities evaluation indicates the appropriate level of difficulty of the activities. 07 participants (46.67%) strongly confirmed that the activities were in the appropriate level of the difficulty, 05 participants (33.33%) agreed with the statement expressing the activities difficulty, while 03 of them were neutral. It seems that the majority of the participants find the activities in the appropriate level of the difficulty in the sense that they enable them to practice grammar rules appropriately. All in all, over the help of the participants strongly reposted that CALL online activities provide purposeful, useful and appropriate information.

3.3.3.3 Evaluating Students' Motivation and Interest

In the last part of the present evaluation form, participants were requested to indicate to what extent they agree or disagree about the motivation and the interest that CALL instruction provides. The participants' results are portrayed in the table 11 below.

Statement	Strongly agree	Agree	Nuetral	Disagree	Strongly disagree
The sessions were well organized and enjoyable.	08	07	00	00	00
	53.33%	46.67%	00%	00%	00%
I was so interested and motivated because of the use of computers and online courses in the classroom.	04	08	03	00	00
	26.67%	53.33%	20%	00%	00%
Computers and online courses raised my interest of practicing more on grammar and vocabulary.	07	07	01	00	00
	46.67%	46.67%	6.66%	00	00

Table 11. Participants' Evaluation of Motivation and Interest

On the basis of the results shown in the table 11, all of the participants reported that the sessions were well organized and enjoyable, sum of 08 of them (53.33%) strongly agreed and the remained 07 participants (46.67%) agreed with the given statement. Hence, 08 participants (53.3%) were interested and motivated because of the use of computers and online courses in the classroom, 04 participants with the percentage of (26.27%) strongly agreed and 03 of them (20%) were neutral. Over half of the participants expressed their motivation because of the adaptation of CALL as an instruction in the classrooms. In the last item of the evaluation of the participants' motivation and interest towards the use of CALL, 07 participants (46.67%) strongly agreed that computers and online courses raised their interest of practicing grammar and vocabulary, another 07 participants (46.67%) agreed with the statement and only 01 participant (6.66%) were neutral. All in all, it seems the majority of our participants were motivated and interested about the various online courses and activities that CALL provides which stresses Croockes and Schmidt's claim (1991) who identified some strategies of relating motivation to classroom technique and curriculum design. The main focus was on the concret more than the abstract which inclined personalizing materials. That is to say the syllabus will consider the concrete aspects and the program will provide quizzes and puzzles to the learners.

3.4 Students' Questionnaire

Students' questionnaire aims at collecting the necessary data in order to explore the impact of the CALL in improving EFL learners' linguistic competence. Also it attempts at measure students' attitude towards the use of CALL.

3.4.1 Rational and Aim

Students' questionnaire has been chosen as a data collection tool due to the fact that questionnaires "are extremely versatile and uniquely capable of gathering a large amount of information quickly in a form that is readily proccessable" (Dornyei, 2003, p.1). This data collection method was used as a supplementary tool to gather more detailed information about the participants' perceptions on the impact of CALL in improving EFL learner's linguistic competence, namely grammar. As far as students were restricted with certain statements in the evaluation forms, the questionnaires provided the participants with the opportunity to express freely their own opinions and perceptions.

3.4.2 The Layout of the Questionnaire

Practically speaking, the questionnaire has been administered for the same sample as usual in order to obtain the participants' valuable feedback about the effective use of CALL. The distribution of the questionnaire took place after two weeks from the session of the posttest because of the academic vacations, and their collecting was done after two days from the distribution.

The students' questionnaire (see appendix G) consists of four parts (general information, regarding computer devices and internet usages, regarding English language learning, and regarding grammar learning). The general information part seeks participants' personal profile, i.e. gender and language proficiency level. The second part which is concerned with the use of computer devices and internet aims at investigating to what extent the participants use their computer devices, and which benefits and challenges they think computer devices

may afford. Then, the third part which is devoted to English language learning focuses on collecting information concerning Computer-assisted Language Learning with regard to English learning in general. Finally the fourth part which is the main core of the present study aims at exploring to what extent the participants use their computer devices to learn new grammatical structures, and how they perceive the usefulness of computer technologies to learn grammar.

Part one (general information) contains two questions which seek the students' gender and their language proficiency level. Part two (regarding computer devices and internet usages) contains eight questions which states the specification of computer devices types, the amount of time they use computers, their knowledge about the use of certain computer programs, the identification of places where they get access to the Internet, the type of web sites they often visit, their reasons to connect to the internet, and the benefits and the challenges they may encounter in learning via computer devices. Therefore, part three (regarding English language learning) includes six questions concerning the time allotment to learn English via computers, the reasons behind their not learning English with computers, where and when do they use their computers to learn English, the allowance to use computers inside the classroom, and the English language aspects they intend to improve. Finally, part four (regarding grammar learning) consists of six questions that investigate participants gaining of new grammatical rules, type of activities, if teachers use computers in teaching, and other related items concerning their level after using computers and how computer devices help them in learning grammar.

3.4.3 Analysis and Interpretation of the Results

The students were requested to complete the questionnaire by putting an (×) in the circle that corresponds to their opinion. The results are reported as follows.

3.4.3.1 Part One: General Information

Q 1. Gender Distribution

Response	Female	Male
Participants	11	04
Percentage	73.33%	26.67%

Table 12. Students' Gender Distribution

This question sought to know if gender affects the use of computer devices. The table 12 shows that out of 15 participants, 11 (73.33%) are females and 04 (26.67%) are males. The results are not surprising because studying Languages has been always a female-targeted field. Even in the other male-targeted fields such as Computer Sciences or Architecture, female students have become competitors of males and often score better than them in different exams and tests.

Q 2. Language Proficiency Level

Respone	Good	Average	Less than average	I do not know
Participants	04	11	00	00
Percentage	26.67%	73.33%	00%	00%

Table 13. Students' Proficiency Level

The table 13 demonstrates that 04 participants (26.67%) evaluated their language proficiency level as good and the remained 11 participants (73.33%) evaluated their language proficiency as average, which indicates their similar learning experience.

3.4.3.2 Part Two: Regarding Computer Devices and Internet Usages

Q 3. Which kind of computer devices do you have?

Response	Desktops	Laptops	PDAs	Tablets
Participants	04	11	05	04
Percentage	26.67%	73.33%	33.33%	26.67%

Table 14. Students Ownership of Computer Devices

Table 14 indicates that the most used devices among computer devices is the laptop computers with percentage of (73.33%), the PDAs come at the second place (33.33%), then the least percentages refer to desktop computers (26.67%) and tablet computers (26.67%) which come equally at the third place. Meanwhile, one of the participants added "phones" as a device s/he owns. The results reveal that computer devices are widespread among students, as it shown in the table 14, laptop computers and PDAs are the most widespread devices. Hence, students are familiar with computer technologies wherein each participant owns at least one kind of computer devices may be because of the low cost of some computer devices. Thus, handheld computer devices have become a necessity in students' lives.

Q 4. How often do you use your computer device applications (per day)?

Response	3 hours or more	1-3 hours	Less than 1 hour
Participants	07	05	03
Percentage	46.67%	33.33%	20%

Table 15. Frequency of Using Computer Devices (Per Day)

07 participants (46.67%) said that they spend 3 hours or more in using computer devices applications, 05 participants (33.33%) said that they spend between an hour and 3 hours in using computer devices applications, and only 03 participants (20%) said that they spend less than 1 hour in using computer devices applications. The results show that the majority of the participants spend 3 hours or more in using the different applications of computer devices.

One may relate this to the various attractive and interesting applications that computer devices afford to the student

Q 5. Which kind of computer programs or tools you know how to use?

Response	Internet	Power point	Excel	Word	Encyclopedia	Print shop
participants	15	10	04	11	02	02
Percentage	100%	66.67%	26.67%	73.33%	13.33%	13.33%

Table 16. Students' Knowledge About the Usage of Computer Programs

Obviously, all the participants (100%) know how to use internet as a computer program; meanwhile, 11 participants (73.33%) know how to use Microsoft Word, 10 participants know how to use Microsoft Power Point, and 04 of them (26.67%) know how to use Microsoft Excel. However the least percentages refer to Encarta Encyclopedia (13.33%) and Print shot (13.33%). Not surprisingly, the results reveal that all the students use their computers to get access to the internet as it is the most frequent program that students know how to use.

Q 6. In which of the following places do you often use the computer to access the Internet?

Response	Home	Friend's home	Library	Cybercafe	School
Participants	14	02	01	05	03
Percentage	93.33%	13.33%	6.67%	33.33%	20%

Table 17. Students' Frequent Places of Getting Access to the Internet

Table 17 denotes that home (93.33%) is the most frequent place where students' get access to the Internet, cybercafe (33.33%) is the second place, school (20%) is the third, and the least percentages refer to friend's home (13.33%) and library (6.67%) as the less frequent places of getting access to the Internet. The results indicate that home and cybercafe are the most frequent places where students' visit the internet in contrast with school and library. One

may consider a simple reason for this because they are the most places where Internet is highly available.

Q 7. Do you have certain web sites that you often use?

Response	Yes	No
Participants	11	04
Percentage	73.33%	26.67%

Table 18. Students' Frequent Use of Certain Web Sites

Out of 15 participants, 11 participants (73.33%) reported that they have certain web sites they often visit, however 04 participants (26.67%) reported that they do not have certain web sites to visit. Table 18 reveals that the majority of the participants have some web sites they regularly visit. In order to know which kind of web site they often use, the participants were asked to list some of those web sites. Not surprisingly most of the participants said that they often visit Facebook, Youtube, Google, and Pinterest. Some of them said that they often visit shopping sites like www.Alixepress.com and recipes websites. Except one of the participants reported the following websites "custom-essays.org ⟶ when I'm asked to write an essay, www.localhistories.org ⟶ when I'm asked to read about history, and www.grammarly.com to correct my paragraphs". The results indicate that most of the participants visit internet for entertainment and rarely when they access web sites for learning English.

Q 8. For which reasons do you connect to the Internet?

Response	Entertainment	Social networking	Learning English
Participants	11	06	05
Percentage	73.33%	40%	33.33%

Table 19. Students' Rreasons for connecting to the Internet

Table 19 portrayed that over half of the participants (73.33%) connect to the Internet in order to entertain, while (40%) of the participants connect for social networking, and only

(33.33%) connect to the internet for English learning. The results indicate that the majority of the participants connect to the Internet just for entertainment or social networking. One may relate to the unattractiveness and the disutility of the computer applications and activities, or may be they find it unimportant to learn English through web sites, or just they are not familiar with the habit of learning through online courses and like to be spoon feeded. So, to have an idea about the most frequented activities, participants were asked to rank the computer activities they often access to. Here are the results.

- Would you please specify examples of the activity?

Response	E-books	Social media	Games	Educational applications	Online courses	Songs
participants	06	10	08	05	04	12
Percentage	40%	66.67%	53.33%	33.33%	26.67%	80%

Table 20. Ranking of the Most Frequent Activities

Not surprisingly, over half of the participants (66.67%) reported accessing social media, a sum of (80%) for songs, and a sum of (53%) for games as the most frequent activities. However, a sum of (40%) reported their access for reading E-books, a sum of (33.33%) for educational applications, and the least percentage (26.67%) for accessing online courses. The results denote that the majority of students access for entertainment (games, songs) and social media activities more than accessing educational and online courses to learn English. This is may be due to the fact that they consider them as authentic materials to learn English as they couple between communication, fun, and learning.

Q 9. Which benefits do you think learning via computer devices may offer?

Response	"anytime-anywhere"	Practical use
Participants	12	03
percentage	80%	20%

Table 21. Benefits of Learning English with Computer Devices

When asked to evaluate the use of computers, Out of 15, 12 participants (80%) said that the "any-time anywhere" benefit is the top of computer affordance, and the remained 03 participants (20%) afforded the practical use of computers.

Q 10. Which kind of challenges students may encounter in learning via computer devices?

Response	Technical challenges	Coasts	The need to be skillful enough
Participants	06	03	06
Percentage	40%	20%	40%

Table 22. Challenges of Learning English via Computer Devices

Table 22 indicates that out of 15, 06 participants (40%) said the they encounter technical challenges such as internet problems in using computers to learn English, the same amount of participants said that they are not skillful enough to use certain programs, and the least percentage (20%) refers to the high coasts of PCs. The results reveal that technical challenges and the skill to use certain programs are the major problems encountered by the participants, unlike the problems with coasts which rank at the bottom of the list.

3.4.3.3 Part Three: Regarding English Language Learning

Q 11. How often do you use your computer devices to learn English?

Response	Always	Often	Seldom	Never
Participants	00	12	03	00
Percentage	00%	80%	20%	00%

Table 23. Frequency of Using Computers to Learn English

Out of 15 students, 12 participants (80%) claimed that they often use their computer devices to learn English; however, 03 participants (20%) claimed that they seldom use their computer devices to learn English. The results show that the majority of the participants take the advantages of their computers to learn English.

Q 12. For which reasons you do not use your computer device in learning English language?

This question sought to know the reasons which hinder the participants from using their computer devices to learn English. Students' answers were different from a participant to another as follows. Most of the participants claimed that they do not use their computer devices to learn English because of the lack of time and the lack of the Internet. Others mentioned that because of laziness while others said that because computers have negative effects on health. Meanwhile, some of the participants faced problems with understanding the online materials or just because the tasks given by the teachers do not need to be solved by the computers. Therefore, one of the participants said that "I prefer papers more than PDF stuff, or to read what I wrote".

Q 13. Where do you often use your computer devices to learn English?

Response	Inside the classroom	Outside the classroom	Wherever the opportunity arises
Participants	00	10	05
Percentage	00%	66.67%	33.33%

Table 24. Frequent Places of Using Computers to Learn English

Table 24 indicates that out of 15, 10 participants (66.67%) use their computer devices to learn English outside the classroom; meanwhile, 05 participants (33.33%) use their mobile devices wherever the opportunity arises. The results reveal that the majority of the participants use CALL activities an informal setting and in unplanned way and in no specific location.

Q 14. When do you often use your computer device to learn English?

Response	Before sleeping	Free time	Whenever the opportunity arises
Participants	01	03	11
Percentage	6.67%	20%	73.33%

Table 25. Frequency of Using Computers to Learn English

Out of 15 participants, 11 participants (73.33%) reported that they use their computer devices whenever the opportunity arises, 03 participants (20%) use CALL activities in their free times, and only one participant (6.67%) use it before sleeping. The results indicate that over half of the participant use CALL activities whenever the opportunity arises, i.e. in a spontaneous way rather than in a habitual regular pattern of activity. As for place, the results proved that participants use CALL activities in an informal way, taking the advantage of "anytime-anywhere" as stated earlier by the majority of the participants.

Q 15. Is it possible for you to use your computer device inside the classroom?

Response	Yes	No	Depends on the teacher
Participants	00	01	14
Percentage	00%	6.67%	93.33%

Table 26. Allowance of Using Computers inside the Classroom

Table 26 shows that 14 participants (93.33%) claimed that the allowance to use their computer devices inside the classroom depends on the teacher; however, only one participant (6.67%) claimed the opposite. One can relate this to the awareness of teachers towards the importance of educational technologies.

Q 16. Which aspects of English Language you intend to improve when using computer activities?

Response	Grammar	Vocabulary	Listening	Speaking
Participants	08	12	07	07
Percentage	53.33%	80%	46.67%	46.67%

Table 27. The Improved English Language Aspects with Computers

Table 27 reveals that there is a slight difference between the percentages of the improved aspects that the participants intend to use. 12 participants (80%) of the participants claimed that they use CALL activities to improve their vocabulary, 08 participants (53.33%) for improving their grammar, and 07 participants (46.67%) for improving their listening and the same percentage goes for speaking. The results indicate the positive reports of the participants, wherein vocabulary and grammar take the first places among the English language aspects that students intend to improve with their CALL activities.

3.4.3.4 Part Four: Regarding Grammar Learning

Q 17. Do you use your computer device to learn new grammatical rules and items?

Response	Yes	No
Participants	11	04
Percentage	73.33%	26.67%

Table 28. Learning Grammar Through CALL

Out of 15, 11 participants (73.33%) reported their positive attitude towards CALL by stating their use of computer devices to learn new grammatical rules and items; however, 04 of the participants (26.67%) reported the opposite.

- If yes, do you find it motivating?

Response	Yes	No
Participants	11	00
Percentage	100%	00%

Table 29. Degree of Motivation When Learning Grammar with Computers

Table 29 shows that all of the participants (100%) who said "yes" to the use of computers to learn new grammatical rules and items reported their positive attitude and motivation towards the use of CALL. The results clearly reveal participants' high motivation towards the use of CALL activities to learn grammar.

Q 18. What kind of activities do you use to improve your level in grammar?

Response	E-books	Text messaging	Online courses	CD-ROM Software	Online tests and quizzes
Participants	07	08	10	01	07
Percentage	46.67%	53.33%	66.67%	6.67%	46.67%

Table 30. Activities For Learning Grammar

10 participants (66.67%) admitted their use of online courses to improve their level in grammar, 8 participants (53.33%) use text messaging, 07 participants (46.67%) use online tests and quizzes with the same percentage for E-books, and the least percentage (6.67%) goes for using CD-ROM Software. The results reveal that the majority of the participants greatly use online courses to improve their grammar. The second place goes for the use of text messing and the third place goes for the use of online tests and quizzes; and the last places go for the use of E-books then CD-ROM Software. This results show the participants' great use of CALL materials to improve their grammar.

Q 19. Does learning grammar with computer device help you with your courses?

Response	Yes	No
Participants	15	00
Percentage	100%	00%

Table 31. Degree of Assistance that CALL provides

Table 31 presents that all the participants (100%) reported that learning grammar with computer devices help them with their courses. The results reveal the importance of learning grammar with CALL materials and the assistance they provide to the other courses. Hence, this means that CALL grammar activities affect students' language skills.

Q 20. Do your teachers use their computer devices and internet to teach you grammar?

Response	Yes	No
Participants	03	12
Percentage	20%	80%

Table 32. Teachers' Use of Computers and Internet in Teaching Grammar

Out of 15, 12 participants (80%) said that their teachers do not use their computer devices or Internet to teach them grammar, and 03 participants (20%) said the opposite. One may relate this to the lack of the necessary materials to adopt CALL as an instruction inside the classroom, or may be teachers are not conscious enough about the affordance of computer technologies.

- If no, do you like to see your teachers/instructors use their computer devices and web-based packages in course to teach grammar?

Response	Yes	No
Participants	10	02
Percentage	83.33%	13.33%

Table 33. Students' Attitude towards the Use of CALL to Teach Grammar

Out of 12 participants who answered with "No", 10 participants of them (83.33%) confessed that they like to see their teachers using CALL activities in course to teach grammar; however, 02 of them (13.33%) expressed their refusal. The results denote that the majority of the participants like to see their teachers use CALL activities to use grammar. Hence, in order to know the reasons behind their acceptance and their rejection, the participants were asked to explain why. Most of the participants who expressed their agreement reported that they like the use of CALL activities inside the classroom because they see it as helpful, interesting, motivating, active, and fun technique to improve their grammar. Some of them said that because computers make the lesson pass faster and they help them to understand the lessons well and enables them to deal with different exercises in order to evaluate their level from time to time. Therefore, one of the participants said that, "the internet is full of new creative ways of teaching that interests the modern generation which the teacher might not have thought about it", while another participant declared that, "It will kill the boring routine from time to time". Otherwise, the remained two participants who expressed their refusal said that they do not like to learn with computers because they see it just a waste of time and they prefer to study with specialized academic books.

Q 21. How would you evaluate your level in grammar before and after learning through computers and web-based packages?

Response	Improved	No difference
Participants	13	02
Percentage	86.67%	13.33%

Table 34. Students' Level after learning Grammar via CALL

Table 34 indicates that out of 15, 13 participants (86.67%) reported that their level in grammar is improved before and after learning through computers and web-based packages; meanwhile, 02 participants (13.33%) reported that there is no difference. The results reveal

that the majority of the participants reported that their level has been improved after assisting their grammar knowledge through computer devices. So, CALL activities have contributed to positive and valuable feedback.

Q 22. If you have any comments or recommendations regarding the topic of the study, please feel free to express.

This open-ended question sought to gather students' additional comments about the present study. The majority of the participants were advocates of Computer-assisted Language Learning (CALL) wherein positive feedbacks were received. Some of the participants claimed that it is quite beneficial to learn grammar with computers, while other said that teachers should use this way because it is fun and motivating and it is helpful to improve their levels. Therefore one participant said that, "Teachers must change their concept of school and lessons mean pen and papers, technology makes learning more fun and easier for teachers and students".

3.5 Teachers' Interview

The purpose behind choosing the teachers interview is to collect teachers' different attitudes towards CALL. Therefore, the interview seeks to explore how EFL teachers cope with the new educational wave.

3.5.1 The Sample

The interview was administered to six (06) teachers who teach modules that have a relationship with grammar learning such as Written Expression, Oral Expression, Grammar, Mastery of the Language, and Linguistics as it deals with studying the systems of the language. Also the selection of the sample was based on the consideration that some of the teachers use technology and language laboratories in teaching process. Thus, the chosen teachers of such modules has being seen as the best representatives of the extent to which computer technologies are included within the course to teach and assist students to learn

grammar correctly. However, one of the teachers did not render back the copy of the interview because s/he could not answer the rest of the questions. So, the results of the interview are based on (05) teachers who represent our sample.

3.5.2 Description of the Interview

A structured teachers' interview was submitted to our sample in order to investigate the third research question of the present study. The interview aims to discover if EFL teachers at Biskra University use their computer devices as a teaching tool and a support to improve their teaching style. Therefore, the interview intends to explore teachers' attitudes and perceptions about the utility of the computer devices in learning grammar.

The teachers' interview includes five (05) open-ended items. First, item one (Q1) sought to know the overall of modules that teachers deal with. Second, item two (02) and item three (03) investigated whether teachers use technology in the classroom in general, and if they use their computer devices to assist their teaching in particular. Then, item four (04) aimed at reporting the software packages that the teachers use in their teaching. Therefore, item five (05) and item (06) investigated to what extent the linguistic competence is important in English learning and how the use of computers help in improving EFL learners linguistic competence. Finally, item seven (07) was devoted to teachers' opinions about the importance of Computer-assisted Language Learning (CALL) in teaching and learning EFL, namely in teaching and learning grammar.

Otherwise, the teachers' identity is intentionally kept anonymous for the feasibility of the research; therefore, we have referred to each interviewee with a letter, such as "A", "B", "C", "D", and «E" as it is reported in the disscussion below.

3.5.3 Analysis and Interpretation of the Results

Item 1. Which modules do you teach?

This question intends to know the different modules that the teachers deal with.

Interviewee A: teaches Oral Expression, Written Expression, Didactics, Mastery of the Language, and ESP.

Interviewee B: teaches Oral Expression and Written Expression.

Interviewee C: teaches Linguistics, Grammar, and Oral expression.

Interviewee D: teaches Applied Linguistics and Oral expression.

Interviewee E: teaches Linguistics and Methodology.

As it can be seen, all the interviewees teach modules that are related to grammar where the linguistic competence of learners can be evaluated such as in Oral expression and in Written Expression modules.

Item 2. Have you used, or do you use technology in the classroom? If yes, please provide use with examples of technological materials you work(ed) with.

The question aims at exploring whether EFL teachers are aware about the use of technology in teaching, and the kind of the technological materials they use.

Interviewee A: "Yes, I sometimes do". The teacher mentioned examples of the technological materials such as "PC and data show, language laboratory"

Interviewee B: said that s/he does, mentioning examples like, "labos, computers, data show".

Interviewee C: "Yes, I used to use O.H.P as a tool to display authentic use of English in videos".

Interviewee D: said that s/he does by mentioning these examples, "video projection with slides, youtube experts of linguistic materials, and audio-visual aids for oral expression like pictures and info graphics".

Interviewee E: said just "No".

Except one teacher, four teachers admitted their use of the technological materials inside the classroom by stating various examples on the technologies they use. The findings indicate

that the majority of teachers are familiar with the use of technology mainly the use of data shows and language laboratories.

Item 3. Do you use computer devices to assist your teaching inside and outside the classroom? If yes, how they help you in your teaching process.

This question seeks to investigate to which extent EFL teachers use the computer devices to assist their teaching whether inside or outside the classroom and how it helps them.

Interviewee A: "Yes, I do. ICTs are good teaching support and helpful tools for better illustration and explanation of some difficult points in a lesson. They also motivate students and help them understand better the content of the course".

Interviewee B: "Yes, I do. Computer devices can provide me with a wide range of sources (audio and audio-visual) and real life situations. The student is approached through more than one modality to learning (hearing and vision)".

Interviewee C: "Yes, mainly laptop. This computer device helps me to show real examples of language (how it is used in real life situations). For instance, videos presented by Mr. Duncan presenting some grammar videos".

Interviewee D: said that, "question ambiguous, sorry can't answer".

Interviewee E: said just "No".

Out of 5, three teachers stated that they do use computers whether inside or outside the classroom to assist their teaching. The findings reveal that the majority of the teachers adapted the use of computers to improve their style of teaching. The teachers reported the importance of computers in the preparation of courses, in the illustration of lessons relating to real-life situations, and in motivating student for a better understanding of the courses. That is to say, computer technologies dominate not only learners' learning process, but also teachers' style of teaching.

Item 4. Have you used Internet or any software package for teaching purposes? Please explain

It is really significant to check whether teachers use the Internet or any software packages for their teaching as the Internet is the most targeted destination when it comes to education and searching.

Interviewee A: "I often use Internet for research. I also use it to prepare my lessons and download necessary materials (audio-visual, texts, images) that can be used as supportive materials for my lessons".

Interviewee B: "Yes, I have used youtube for some authentic and realistic videos. I have used the British council website for pedagogical sources and support. I do use dictionaries and some programs to attain different objectives fitting my students' needs".

Interviewee C: "Yes, indirectly I used Internet to select videos to support my grammar lectures".

Interviewee D: "No, for the simple reason that there is no internet device or connection in the classroom or any setting in the university that would enable us as teachers to use software that need internet connection".

Interviewee E: "Yes, as a support (at home), but in the classroom I do not use the Internet".

The teachers reported different answers depending on the use of the Internet inside or outside the classroom. The majority of the teachers claimed that they use Internet as a support to prepare their lessons and to use authentic materials from YouTube as audio-visual aids in the classroom. Also teacher "B" expressed his use of the British Council software as a support for teaching purposes. One teacher claimed that the obstacle behind the use of software packages inside the classroom is that the university does not provide any appropriate settings or laboratories to use the softwares inside the classroom. Hence, the majority of the teachers rely on the internet and software packages as supportative materials in informal

settings such as at home in order to use them in lecturing inside the classrooms. So, the findings reveal that if the university provides the necessary materials for teachers, CALL instruction would be adopted by the most of the teachers

Item 5. To what Extent do you think the linguistic competence is important in EFL learning?

The teachers are requested to identify to which degree the linguistic competence is important in English language learning.

Interviewee A: "It is very important. Learning a foreign language necessities being linguistically competent. A learner who does not develop his/her linguistic competence cannot communicate successfully".

Interviewee B: "I think it is very important because it enables them to distinguish all what is grammatical from ungrammatical ones".

Interviewee C: "It is crucial; simply we cannot judge ones level without his/her mastery of the linguistic competence".

Interviewee D: "It is important to the extent that the linguistic competence should be the first focus for language teaching and learning because it is the vehicle for the knowledge about the language".

Interviewee E: "It is axiomatic, it is important".

The five interviewees reported to which extent the linguistic competence is greatly important in learning English. The teachers declared the significance of the linguistic competence as the basis of learning English, as the interviewee D said, "it is the vehicle for the knowledge about the language". Teachers demonstrated its value to the extent that without the linguistic competence the learner is unable to communicate and the learner's level is judged mainly through their mastery of the linguistic competence.

Item 6. How do you consider the use of computers to teach the different aspects of language, namely their linguistic competence?

It is quite significant to measure EFL teachers' attitude towards the use of computers in teaching English language, specifically the linguistic competence.

Interviewee A: "The use of computer is very helpful especially when the materials chosen for the lesson are well-prepared and carefully selected".

Interviewee B: "I personally find it efficient. Students feel motivated using technology to acquire that kind of abstract grammar".

Interviewee C: "Of course it is extremely important in teaching the language and the linguistic competence".

Interviewee D: "Necessary at first stage through other devices may also help like tablets or smartphones".

Interviewee E: "I see it interesting to teach the English language and the linguistic competence with computers".

The five teachers agreed that the computer devices are beneficial and useful educational technology tools that may afford students with opportunities to develop their linguistic competence. However, in addition to the use of computers, one teacher added another kind of computer devices (tablets) and another instruction that requires the use of smartphones which is Mobile-assisted Language Learning (MALL).

Item 7. In your opinion, how is Computer-assisted Language Learning (CALL) important as an instruction to teach English as a foreign language in general and grammar in particular in the future?

This question intends to explore how EFL teachers consider the significance of CALL as a language learning approach in improving learners' linguistic competence, namely grammar.

Interviewee A: "CALL is an excellent support to teach grammar especially if the selected software is based on communication not only drilling".

Interviewee B: "Technology invaded every part of our life, so I think it is time for it to be widely used in teaching especially a foreign language. For grammar, I think that it can be motivating for learners as a support to rules and practice".

Interviewee C: "Yes, adopting CALL to teach grammar is an important instruction that may helps teachers and students. CALL is crucial; simply it brings newness to the educational process".

Interviewee D: "CALL is much biased to be extensively used because it allows interaction and facilitates understanding in real-life situations like doing exercises and solving them and checking your scores and you can read the same drills many times until you grasp the rule and the application".

Interviewee E: " I do believe it is a must to use CALL in teaching grammar".

Remarkably, all the interviewees share the same idea that computer technology is highly significant in teaching and learning English as a foreign language, especially in learning grammar. The teachers reported their agreement about adopting CALL as an instruction in teaching grammar for several reasons such as CALL "is an excellent support to teach grammar, CALL "is motivating as a support for rules and practice", CALL "brings the newness to the educational process", CALL "allows interaction and facilitates understanding real-life situations", and CALL is a must to use it in teaching grammar. The findings reveal the various advantages that CALL can bring to the classroom like motivation, interaction, authenticity, newness and the corrective feedback.

3.6 Disscussion of the Results

To review, the objective of the current study was to investigate the effectiveness of Computer-assisted Language Learning (CALL) instruction in improving EFL learners'

Linguistic Competence. Hence, it aimed at helping learners to enhance their grammatical competence in terms of producing accurate and correct sentences. Simultaneously, the study sought to promote learners' autonomy and interaction through exposing them to authentic material that enable them to develop their grammar. Also, the study pursued raising students' attention to their grammatical mistakes through the immediate corrective feedback that CALL provides. Furthermore, the study intended to support the adaptation of technology mainly computers as new and creative way in teaching practices to improve learners' linguistic competence.

Indeed, the findings revealed a considerable impact in developing learners' linguistic competence through CALL, and it revealed interesting insights into the use of computer technologies by students and teachers. The findings of this study which have been drawn from the analysis of the four data gathering methods were positive in many aspects. Initially, the quasi-experimental study portrayed the substantial difference between learners' pretest and posttest scores. A noticeable progress was observed and statistically confirmed in learners' posttest scores which proves the benefits of CALL instruction in enhancing EFL learners' linguistic competence, namely their grammar. The null hypothesis is rejected at an alpha level $P>.05$ which indicates that the output of the treatment was purley the results of the treatment rather than any extra factors which has been affirmed through the calculation of size effect. Since the alternative hypothesis was confirmed, we can conclude with the considerable impacts of Computer-assisted Language Learning (CALL) as an innovatine instruction in improving EFL learners' linguistic competence.

Regarding students' evaluation forms, the findings revealed that the majority of the sudents expressed their agreements concerning the different materials provided by CALL. Over half of the students preferred CALL as an instruction by rating their agreements on the usefulness, the suitability, and the relevance of the information that CALL materials deliver.

Hence, most of the participants expressed their positive agreement about that CALL materials promote student-centered learning strategies and autonomy, and they allow for better scoring and achievements. Henceforth, concerning CALL lessons and activities, it was agreed that CALL activities are appropriate to their learning objectives and they offer a great assistance in improving their linguistic competence which includes grammar and vocabulary. In addition to evaluating CALL in terms of motivation and interest, the findings revealed that the majority of the participants found CALL materials and online activities and lessons quite motivating, interesting, organized, and enjoyable for practicing grammar.

In this respect, it is worthy to notice the extent to which students prefered CALL instruction rather than the traditional way of teaching. This demonstrates the high positive attitude of EFL students towards the use of CALL in developing their linguistic competence. Therefore, the students confessed the importance of the authenticity that CALL materials allow for raising their motivation and interest in order to understand efficiently the content of courses and to improve their grammatical competence.

In addition to students' questionnaire, the findings revealed that the mobile devices are widespread among EFL learners, and every student have at least one computer device. This proves the omnipresence and the availability of computer devices as two main features to exploit. The majority of students use their computer devices for 3 hours or more which denotes the addiction of the students towards the attractive activities that computer devices afford, and it elucidates the manipulation of the input and interaction between computer devices and the learners. Hence, the findings revealed that all the participants know how to use the Internet wherein it is seen as the most targeted spot more than the other computer software because of its various and beneficial websites. Also, the findings revealed that most of the participants evaluated computer devices in terms of affordance wherein the anytime-anywhere benefit identified as the main feature of computer devices, and the technical

challenges and the need to be skillful about the use of computers identified as the main challenges. Reliability issues and educational problems were the main disadvantages that may reduce the use of CALL.

Moreover, the findings revealed that the majority of students use their computer devices and access to the Internet whenever and wherever they find the opportunity which confirms the anytime-anywhere benefit. Likewise, the results indicated that EFL learners often use their computer devices and online packages for English learning; however, it not surprising that students spend most of their time on entertainment activities such as songs and games and on social networking, i.e. they do not prioritize English learning as a computer activity. Thus, EFL students use web-based packages informally maybe because they find the freedom to choose the kind of activities that fit and satisfy their needs more than to be conditioned in formal setting like school. One can conclude with that EFL students use their computer devices and Internet packages in a spontaneous and irregular way; so that, they take the anytime-anywhere benefit for granted to fulfill their times. These findings broadly match the approaches stated in the chapter two, i.e. the interactionist theory, the sociocultural theory, the communicative approach, and cognitive and social processes theory.

Along with the same vein, this study revealed that vocabulary and grammar are at the top of language aspects that EFL learners intend to improve. Thus, the majority of the students reported their dependence of online courses and test messaging in improving their grammatical competence. Additionally, the findings revealed students motivation and interest when using CALL activities to learn grammar. Hence, Form their own CALL experience, students reported that CALL activities improved and raised their grammatical competence. To conclude, the study denotes that CALL activities offer various opportunities for effective grammar learning. In fact, EFL learners learn grammar implicitly more than explicitly.

Finally, the teachers' interview analysis provided with positive comments and valuable feedback towards the use of CALL as an instruction to teach grammar. The findings revealed that EFL teachers were aware about the use of the different technological materials inside and outside the classroom and their implementation in the process of teaching. Therefore, EFL teachers expressed their massive use of the computer devices especially laptops in preparing the different materials that meet the courses requirements. Also, teachers admitted their wide reliability on the Internet and the various websites in illustrating real-life situations and exposing learners to authenticity. It is worth noting that EFL teachers reported the extreme significance of teaching and learning the linguistic competence as it is the foundation of mastering a language as well as it is the basic aspect of well delivery of communication. Hence, it was agreed that CALL activities are effective in improving EFL learners' linguistic competence, especially grammar. Although, EFL teachers are not completely conscious about the affordance of CALL activities, they have agreed that CALL is an efficient instruction to in developing EFL learners' English language, specifically their grammar. The EFL teachers expressed their positive attitude and high agreements towards the use of CALL materials in teaching grammar.

To conclude the discussion, the study findings revealed that CALL grammar activities penetrate both teachers' teaching style and learners' process of learning. Therefore, the study proved that CALL is and effective instruction to be adapted in teaching and improving learners' grammatical competence. This provides answers to the previous research questions and confirms the research hypotheses.

Conclusion

This present chapter provided with the analysis and the interpretation of the different research methods from the different stages of the research. The collected data was by means of a quasi-experiment, students' evaluation form, students' questionnaire, and teacher's

interview. First, the results of the quasi-experiment were carefully analysed and interpreted both statistically and descriptively whether in tables and graphs to show how statistics distinguish from one to another. Second, students' evaluation forms and students' questionnaires were coded by means of tables and analysed and interpreted respectively. Third, teachers' interview was descriptively analysed and interpreted as well in order to provide with a general idea about the data. Finally, the chapter ends up with an in-depth discussion of the study results in order to answer the research questions and to test the research hypotheses. To conclude, the chapter provides answers to the research questions and confirms the research alternative hypothesis; so that, both EFL teachers and learners exploit their computer devices as teaching and learning means, and they consider the use of CALL activities as an effective tool in improving grammar knowledge.

General Conclusion

The current dissertation has explored the impact of Computer-assisted Language Learning (CALL), as a new approach, in improving EFL learners' linguistic competence. Accordingly, the present dissertation aimed at examining the current status of teaching EFL learners grammar at Biskra University as a situation that requires convenient remedies and immediate action. Also, the dissertation aimed at investigating whether EFL teachers and learners use CALL activities as a support for their teaching and learning in general, and grammar learning in particular. For these reasons, the present study investigated the effectiveness of CALL in grammar as an instruction that is greatly implemented in academic settings and international institutions in order to take for granted the potentials and to facilitate the internet offers for education. Thus, this dissertation is conducted to confirm or reject the hypothesis stating that CALL instruction improves EFL learners' linguistic competence and motivate them to make sense of learning.

First of all, it is essential to review the related literature which was presented in the first two chapters. The first chapter provided a complete analysis about the linguistic competence, stating its origins with tackling the different related linguistic schools, its components and representations, the different theories emerged in accordance to its evolvements, its relationship with second language acquisition, and the different learning strategies that are related to cognition as it is a cognate aspect. Meanwhile, the second chapter dealt with the Computer-assisted Language Learning (CALL) as an emerging language learning approach that encompasses the use of computer devices as educational tools. The chapter consisted of the basic concepts and definitions related to the use of computers for educational purposes, its history and its different definitions according to many educators, its benefits and challenges and how web-based teaching is used in the academic setting, then the different approaches

related to CALL before reporting the various researches and studies that investigated the use of CALL to teach and learn grammar.

Furthermore, in order to test the research hypothesis, the research method consisted of quasi-experiment, students' evaluation form, students' questionnaire, and teachers' interview was used to collect relevant data on the subject and to make appropriate inferences about future recommendations. The quasi-experiment was conducted as an intervention to implement CALL in EFL classrooms in order to investigate its utility and to examine its importance in bettering EFL learners' linguistic competence. The statistical tests and results revealed a considerable progress in their performance because of their exposure to the different applications of the web tools and the authentic materials that Internet provides which led to confirming the alternative hypothesis and rejecting the null one mainly through T-test and size effect. Hence, the quasi-experiment results were strengthened by the students' evaluation form to measure the success level of the CALL courses that students had experienced by their ratings of the various aspects related to the instruction. The majority of the students reported their high agreements about the relevance of the information that CALL materials, lesson and activities provide, also they expressed their great motivation and interest towards the use of CALL activities as instruction in EFL classrooms.

Moreover, students' questionnaire was submitted in order to gather further data about the use of CALL and to measure students' attitude towards computer devices. The majority of the majority of the students own at least one kind of computer devices wherein they seldom use them for learning English or grammar. The students reported their addiction of computers by spending more than three hours in using their computer devices and Internet which indicates that students initiate computer-learner type of interaction which leads to promoting their autonomy. Also the findings revealed that students are allowed to use CALL activities in informal settings more than the formal ones wherein they benefit from the anytime-anywhere

advantage. Hence, students had shown positive attitudes towards the use of CALL activities as a support to learn English, namely grammar, by providing corrective feedback and checking their answers immediately. Additionally, EFL teachers were provided with structured interviews in order to have their opinions and attitudes towards to the implementation of CALL in EFL classrooms as an instruction. Most of the teachers expressed their use of CALL activities to prepare their courses and to provide real-life situations as illustrations in the classrooms. All the teachers reported their agreements about the significance of linguistic competence in learning English as it is the foundation of mastering the language. Also, all the teachers expressed their efficient agreements about adapting CALL as an instruction to motivate learners as well as to exploit its benefits among them the corrective feedback and interaction. As a final point, the dissertation provided with some pedagogical recommendations and remarks for the future.

Finally, the present dissertation has mainly investigated the effectiveness of CALL as a new educational tool with unlimited advantages in improving EFL learners' linguistic competence. This emerging wave of technological tools has been confirmed to be an aid to assist EFL students' competencies and language skills, particularly their grammar learning.

Suggestions and Recommendations

The implementation of ICT tools and Internet in educational processes has become a targeted field for so many EFL teachers and learners to develop learners' different English language skills and competencies. Therefore, computer technologies, including desktop computers, laptop computers, tablet computers, PDAs and several computer devices, become an essential part in both teachers' and learners' lives. Thus, it is necessary to raise the awareness of EFL practitioners in order to know how well exploiting these computer technologies. As such, the present study suggests the following recommendations:

- Computer devices are the most appropriate solution for integrating ICT tools in EFL classrooms; i.e., they promote the spontaneous usage of both teachers and learners.
- Teachers may take the advantage from the widespread ownership of the different computer devices among their students in using CALL activities that suit these latter.
- Teachers and learners should be encouraged and motivated enough by implementing the various computer devices as teaching and learning tools through different CALL activities.
- As far as learning tasks can hardly be accomplished without the directions of the teacher, the teacher should orient their students on choosing the suitable and effective learning materials.
- As long as CALL activities are used widely by learners outside the classroom (informal settings), it should be beneficial for teachers to direct their students to spend more time learning on activities which require the use of computer technologies.
- Teachers and instructors should assist learners' autonomy which allows for the learners to combine formal and informal learning.

- As far as linguistic competence is concerned, teachers should invest the unlimited number of CALL grammar activities (online courses, quizzes and tests) to integrate authenticity to the course and to promote learners to use them.
- In the concern of CALL activities, designers should pay attention to design CALL activities that build learners' competencies and language skills, particularly their grammar, in order to fulfill learners' different objectives and needs.
- As both traditional grammar learning and computer assisted language learning have their innate benefits and challenges, a blended learning approach is recommended to meet learners' particular needs.
- Hence, it would appropriate to create research laboratories to mix between applied linguists and computer specialists in order to design different software, programs and computer applications which fit the language curriculum.
- At last, the researcher suggests adding a module which would be concerned mainly with training teachers and learners on implementing and using computer devices in the teaching and learning processes. Therefore, the module’s program should be designed and prepared by the suggested research laboratories with a constant update of the content as technology always is.

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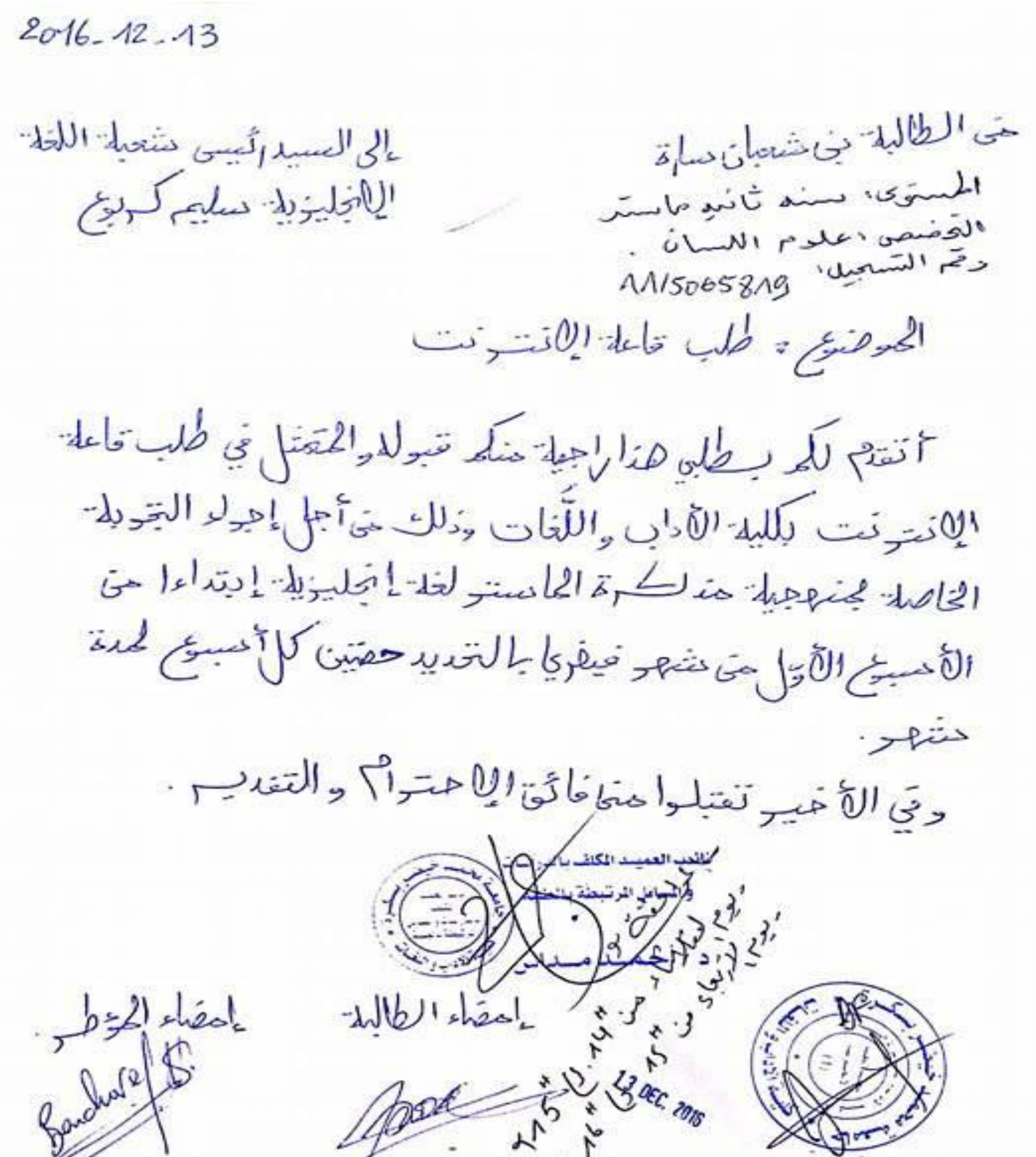
APPENDICES

Appendix A: Approval Letter



2016-12-13

من الطالبة: بن شعبان سارة
المستوى: سنة ثانية ماستر
التخصص: علوم اللسان.
رقم التسجيل: 11150065819

إلى السيد رئيس شعبة اللغة الإنجليزية: سليم كرواع

الموضوع: طلب قاعة الإنترنت

أتقدم لكم بطلبي هذا راجية منكم قبوله والمتمثل في طلب قاعة الإنترنت بكلية الآداب واللغات وذلك من أجل إجراء التجربة الخاصة بمنهجية مذكرة الماستر لغة إنجليزية ابتداءا من الأسبوع الأول من شهر فيفري بالتحديد حصتين كل أسبوع لمدة شهر.

وفي الأخير تقبلوا منا فائق الاحترام والتقدير.

إمضاء المؤطر   إمضاء الطالبة

نائب العميد المكلف بالدراسات والمسائل المرتبطة بالطلبة

13 DEC 2016

Appendix B: Students' Attendance Sheet

The Impact of the CALL Instruction
in Improving EFL Learners' Linguistic Competence

Attendance Sheet

Full Name	Group	S1	S2	S3	S4	S5	S6	S7	S8
AKERMI Faten	04								
AMRATE Badereddine	07								
BECHKI Nassima	01								
CHEMINI Elhachemi	09								
CHERIFI Nabila	05								
DEFDAF Ahlem	07								
DJABER Selsabil	04								
GHIBOUB Sara	07								
GOURARI Amine	07								
FAISSAH Hanane	07								
FRAIHAT Salima	07								
MOUADA Issam Eddine	09								
MAOUCHE Fatima	04								
SAYAH Wafa	05								
TELLI Anfal	03								

pretest: 31/01/2017.
S01: 01/02/2017.
S02: 07/02/2017.
S03: 15/02/2017.
S04: 21/02/2017.
S05: 22/02/2017.
S06: 28/02/2017.
S07: 01/03/2017.
S08: 06/03/2017.
posttest: 07/03/2017.

Appendix C: Pretest

Part One: Verbs

Directions: Please complete the gaps below with one set of verbs, using the past simple or past continuous.

miss / not get / wonder break / see / steal / teach

come / listen / make / say explain / talk / understand

A We …….. To music when one of the neighbours…….. to the door and …….she couldn't sleep because we ……too much noise.

B Someone…….into Barbara's office and……..her computer yesterday afternoon while she…….her history class. No one…….. the thief.

C Because he never……...anything very clearly, none of us…….. what the science teacher……..about most of time.

D I'm sorry, I……. here on time and I…….....the beginning of your presentation, but I……..if you might have an extra handout left.

Part Two: Modal Verbs Completion

Directions: Please complete this text with appropriate forms of can and could plus these verbs.

avoid be not imagine pick save not send

These days, when we…… up a phone and call anywhere in the world, we really don't realize, and often……., how difficult long-distance communication ……for people in the past. In the early 19th century the Treaty of Ghent brought an end to the War of 1812 between Britain and the United States. But the news ……..across the Atlantic fast enough to stop General Andrew Jackson attacking and defeating the British forces in New Orleans a full three weeks after the treaty was signed. With better communication, the battle…….and the lives of more than two thousand people……

Part Three: Questions vs. Answers Matching

Directions: Please choose an answer (a—d) for each question (1—4) and add these verbs in the present perfect and the present perfect continuous.

be complete do know read show swim

1 How long……..she and Mark……. each other? (……)	a Yes, he……it for past hours.
2 Why is your hair all wet? (……)	b I…….....just……..
3 …….you……..an application Form? (……)	c They……..friends since school.
4 …….you……...Keith the report Yet? (……)	d Yes, I…….already……..that.

Part Four: Sentences Reorder

Directions: Please rearrange the words to make complete sentences.

1 Bang / with / heavy / the / door / a/ closed

.....

2 Rustled / wind / the / the / trees / in

……..

3 Squeaked / the / wheel / his / bicycle / old / on

…….

4 Snapped / pencil / the / on / when / it / he / sat

……

5 Rang / woke / up / doorbell / when / he/ the

…….

6 Dog / hungry / howled / the night / all

……

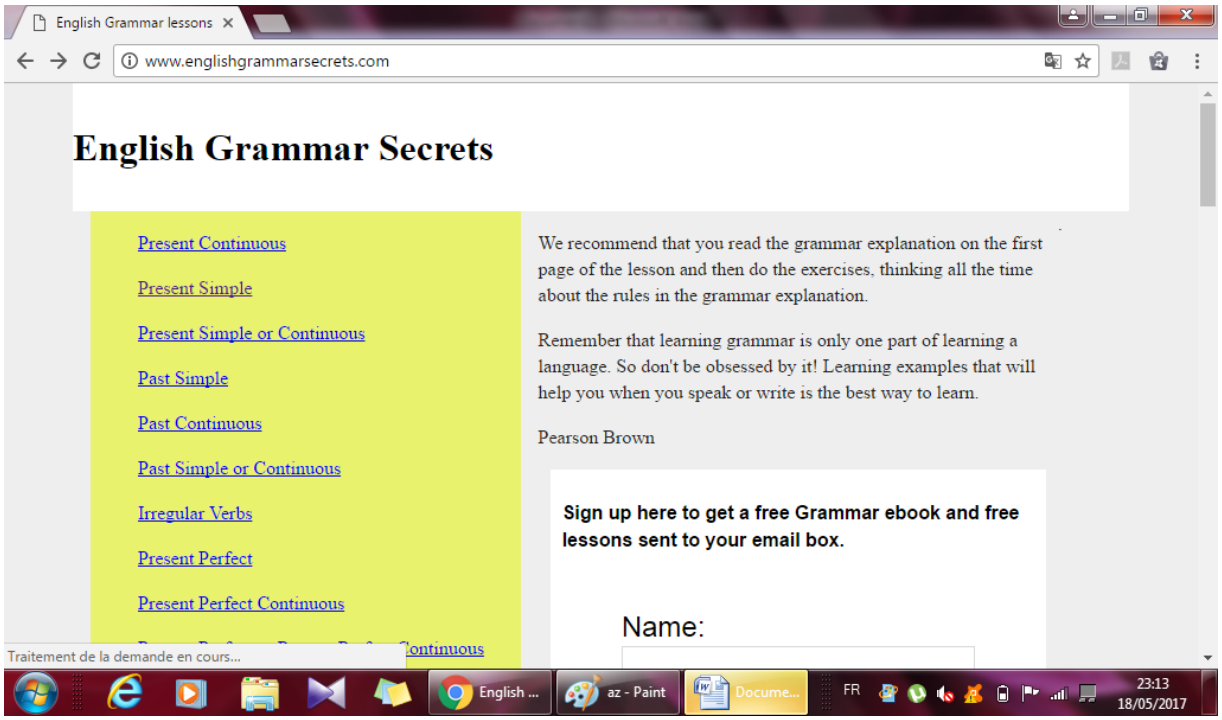
Thank you

Appendix D: CALL Grammar Instruction

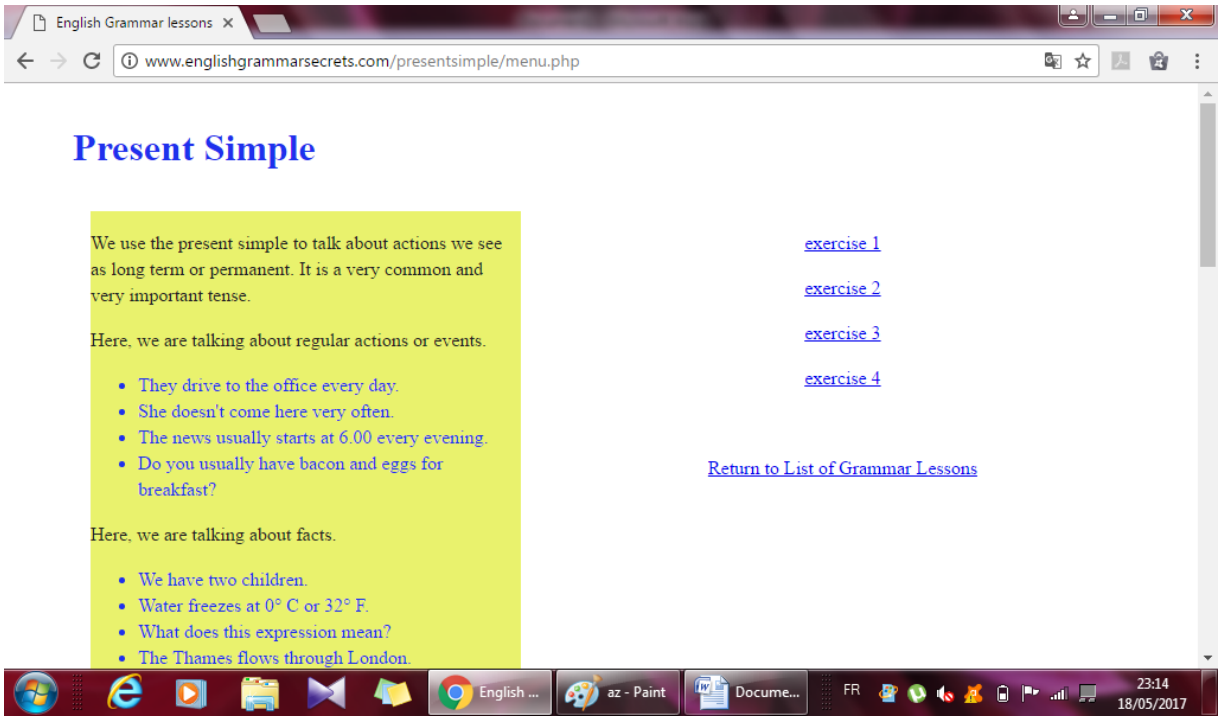
Step 1: To log onto English Grammar Secrets Courseware, please go to the link below:

http://www.englishgrammarsecrets.com

Step 2: Click on the "Present Simple" tab at your upper left-hand corner.



Step 3: You are ready now to study the present simple tense and practicing it



Appendix E: Posttest

Part One: Verbs

Directions: Please complete the gaps below with one set of verbs, using the present simple or present continuous.

know / look / not be / repair / use be / be / have / say / tell

be / live / look / move / resemble

A My computer ……... very irritating right now, Every time I ……... it to save something, it…… it……. no space in its memory, which……... ridiculous.

B Whales and dolphins……. like fish, but they…….. mammals that…… in the ocean and……. through water in ways that …… the movements of a dog rather than those of a shark.

C Man: Excuse me, I……for Mrs Adamson, but she……..in Her usual classroom. ……you…….. where she is?

Woman: Oh, they ……..her classroom ceiling this week so she …… the library as her classroom.

Part Two: Modal Verbs Completion

Directions: Please complete each sentence with an adjective and a model verb.

absurd feasible theoritical may may be might

disqualified potential undecided may not (×2) may have might not

1 Your uncle…….. run in marathon when he was younger, but it's ……..**absurd**…to keep describing his as " one of the top runners."

2 She…….. breaking the rules and will possibly be…… from the rest of the competition.

3 If someone is……about an action, they…….or ……do it.

4 We knew about the……. problems and the workmen had said they

…… finish on time.

5 Your plan…… be approved because people don't think it's economically ……

6 From a…… perspective, that…….happen, but nobody Thinks i twill.

Part Three: Sentences Matching

Directions: Please choose an ending (a—d) for each beginning (1—4) and add these verbs in the past perfect and the past simple.

come give need not finish say talk work

1 He……..the money last week, (…)	a that you……about that already.
2 You……during the meeting (…)	b so I.……it to him then.
3 When he…….back later, (…)	c if she……...harder.
4 Ashley could have done much better (…)	d they still……writing their report.

Part Four: Sentences Reorder

Directions: Please rearrange the words to make complete sentences.

1 you / of / really / help / us / it's / kind / to

.....

2 bed / out / of / thing / you / lazy / get

……..

3 won't / he / if / he's / mind / you / easygoing / are / late / very

…….

4 the / you / birthday / are / generous / for / thank / very / you / present

……

5 her / he / him / shy / too / ask / was / to / dance / with / to

…….

6 bright / always / does / he / he / well / tests / at / student / is / a

……

Appendix F: Students' Evaluation Form

Mohamed Kheider University of Biskra
Faculty of Letters and Languages
Department of Foreign Languages
English Devision

Students' Evaluation Form

Dear students,

You are kindly requested to complete the following evaluation form by using the 5-point rating scale to indicate the extent to which you agree or disagree with each statement. Please put (×) in the circle that applies. Your feedback is valuable for planning future instructions and it will provide a geart help for us.

Materials

	Strongly Agree	Agree	Nuetral	Disagree	Strongly Disagree
1. The instruction was useful for me as a student.	◯	◯	◯	◯	◯
2. The materials used meet my learning needs.	◯	◯	◯	◯	◯
3. The materials modled student-centred learning strategies.	◯	◯	◯	◯	◯
4. The materials presented relevant and useful information.	◯	◯	◯	◯	◯

5. The materials allow for raising my scores and success. ○ ○ ○ ○ ○

Lessons and Activities

	Strongly Agree	Agree	Nuetral	Disagree	Strongly Disagree
1. The software package activities and lessons were appropriate to my learning objectives and needs.	○	○	○	○	○
2. The activities presented helped me to improve my level in linguistic competence.	○	○	○	○	○
3. The online activities content inculded the main aspects of language such as grammar and vocabulary.	○	○	○	○	○
4. The activities were in the appropriate level of difficulty.	○	○	○	○	○

Motivation and Interest

	Strongly Agree	Agree	Nuetral	Disagree	Strongly Disagree
1. The sessions were well organized and enjoyable.	○	○	○	○	○
2. I was so interested and motivated because of the use of computers and online courses in the classroom.	○	○	○	○	○

3. Computers and online courses raised my interest of practicing more on grammar and vocabulary.	◯	◯	◯	◯	◯

Thank You

Appendix G: Students' Questionnaire

Mohamed Kheider University of Biskra

Faculty of Letters and Languages

Department of Foreign Languages

English Devision

Students' Questionnaire

Dear students,

You are kindly requested to answer the following questionnaire which aims at exploring "*The Impact of the Computer-assisted Language Learning (CALL) Instuctionin in Improving EFL Learners' Linguistic Competence*". Please answer the questions carefully and put (×) in the column that applies.

Your feedback is valuable for planning future instructions, and it will provide a geart help for us.

Thank you in advance for your collaboration.

Computer-assisted Language Learning (CALL): the use of computers in second or foreign language learning.

Part One: General Information

Q1- Specify your gender

a- Female ◯ b- Male ◯

Q2- Specify your level in English

a- Good ◯ b- Average ◯ c- Less than average ◯ d- I do not know ◯

Part Two: Regarding Computer Devices and Internet Usages

Q3- Which kind of computer devices do you have? (you may choose more than one option)

a- Desktop Computers ◯ b- Laptop Computers ◯

c- PDA (Personal Digital Assistant) ◯ d- Tablet Computers ◯

e- Others……...

Q4- How often do you use your computer device applications (per day)?

a- 3 hours or more ◯ b- 1-3 hours ◯ c- Less than 1 hour ◯

Q5- Which kind of computer programs or tools you know how to use? (you may choose more than one option)

a- Internet ◯ b- Microsoft Power Point ◯ c- Microsoft Excel ◯

d- Microsoft Word ◯ e- Encarta Encyclopedia ◯ f- Print Shop ◯

g- Others……

Q6- In which of the following places do you often use the computer to access the Internet?

a- At Home ◯ b- At a Friend's Home ◯ c- Library ◯

d- Cybercafe ◯ e- At School ◯

Q7- Do you have a certain web sites that you often visit?

◯ ◯

a- Yes b- No

If yes, please list some of your web sites that you regularly use.

.....
.....
.....

Q8- For which reason do you connect to the Internet?

a- Entertainment ◯ b- Social networking ◯ c- Learning English ◯

- Would you please specify examples of the activity? (you may choose more than one option)

a- Reading E-books ◯ b- Social media, Blogs ◯ c- Games ◯

d- Educational applications ◯ e- Online courses ◯ f- Songs ◯

g- Others……

Q9- Which benifits do you think learning via computer devices may offer?

a- The "anytime-anywhere" benifit ◯ b- Practical use ◯

c- Others……...

Q10- Which kind of challenges the students may encounter in learning via computer devices?

a- Technical challenges (e.g. the disavailability of internet somedays) ◯

b- Coasts (e.g. the high coast of PCs) ◯

c- Others……

Part Three: Regarding English Language Learning

Q11- How Often do you use your computer devices to learn English?

a- Always ◯ b- Often ◯

c- Seldom ◯ d- Never ◯

Q12- If you do not use your computer devices to learn English, it is because:

……

……

Q13- Where do you often use your computer device to learn English?

a- Inside the classroom ◯ b- Outside the classroom ◯

c- Wherever the opportunity arises ◯

Q14- When do you often use your computer device to learn English?

a- Before sleeping ◯ b-Free time ◯

c- Whenever the opportunity arises ◯

Q15- Is it possible for you to use your computer device inside the classroom?

a- Yes ◯ b- No ◯ c- Depends on the teacher ◯

Q16- Which aspects of English Language you intend to improve when using computer activities? (you may choose more than one option)

a- Grammar ◯ b- Vocabulary ◯ c- Listening ◯ d- Speaking ◯

c- Others……...

Part Four: Regarding Grammar Learning

Q17- Do you use your computer device to learn new grammatical rules and items?

a- Yes ◯ b- No ◯

If yes, do you find it motivating?

a- Yes ◯ b- No ◯

Q18- What kind of activities do you use to improve your level in grammar? (you may chose more than one option)

a- Reading E-books ◯ b-Text messaging (e.g.chatting) ◯

c- Online courses ◯ d- CD-ROM Softwares ◯

e- Others……

Q19- Does learning grammar with computer device help you with your courses?

a- Yes ◯ b-No ◯

If yes, which course?

a- Written Expression ◯ b- Oral Expression ◯ c-Grammar Course ◯

d- Others……...

Q20- Do your teachers use their computer devices and internet to teach you grammar?

a-Yes ◯ b- No ◯

If no, do you like to see your teachers/instructors use computer devices and web-based packages in course to teach grammar?

a- Yes ◯ b- No ◯

Explain why: …….....**.....**

……..

Q21- How would you evalute your level in grammar before and after learning through computers and web-based packages?

a- Improved ◯ b- No difference ◯

Q22- If you have any comments or recommendations regarding the topic of the study, plsease feel free to express:……

.....……...

……

……

……

Thank You

Appendix H: Teachers' Interview

Mohamed Kheider University of Biskra

Faculty of Letters and Languages

Department of Foreign Languages

English Devision

Teachers' Interview

Dear teachers,

You are kindly requested to answer the following questions concerning the interview which aims at exploring "*The Impact of the Computer-assisted Language Learning (CALL) Instuctionin in Improving EFL Learners' Linguistic Competence*".

Your feedback is valuable for planning future instructions, and it will provide a geart help for us.

Thank you in advance for your collaboration.

Computer-assisted Language Learning (CALL): the use of computers in second or foreign language learning.

1. Which Modules do you teach?

……

……..

2. Have you used, or do you use technology in the classroom?

If yes, please provide us with examples of technological

materials you work(ed) with.

…….....

.....

.....

3. Do you use computer devices to assist your teaching inside and outside the classroom? How they help you in your teaching process?

……
……..
.....
.....

4. Have you used internet or any software package for teaching purposes? Please explain your choice.

……
……
……
……

5. To what extent do you think the linguistic competence is important in EFL learning?

……
……
……

6. How do you consider the use of computers to teach the different aspects of language, namely the linguistic competence?

……
……
…….

7. In your opinion, how is Computer-assisted Language Learning (CALL) important as an instruction to teach English as a foreign language in general and grammar in particular in the future?

……
……
……
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Résumé

L’apprentissage par l'ordinateur est considéré comme un nouveau champ multidisciplinaire populaire de la technologie éducative. L’apprentissage des langues assisté par l'ordinateur est une approche d’apprentissage des langues qui consiste à utiliser les appareils mobiles pour enseigner et apprendre une langue. Cette nouvelle vague a gagné sa popularité grâce à l’ubiquité de différentes technologies informatiques utilisées pour améliorer l’apprentissage. Par conséquent, cette étude met en évidence l’utilisation actuelle des technologies informatiques chez les étudiants et les enseignants de l’Anglais comme langue étrangère à l’Université de Biskra. En ce qui concerne l’Anglais comme langue étrangère, la connaissance de grammaire est considérée comme sa partie essentielle. Donc, l’objectif principal de l’étude est d’explorer comment les étudiants d’Anglais exploitent leurs différents types d'ordinateurs pour acquérir la connaissance en grammaire, ainsi que comment les enseignants d’Anglais utilisent leurs appareils mobiles pour enseigner la grammaire. Alors, les données ont été recueillies à l’aide d’une quasi-expérience, une format d'évaluation, un questionnaire dédié aux étudiants et une interview dédiée aux enseignants. Les résultats ont révélé un progrès dans les scores du post-test et des attitudes positives du coté des étudiants et des enseignants envers l’importance et l’utilisation des ordinateurs. En outre, l’apprentissage des langues assisté par l'ordinateur a prouvé son efficacité dans l’amélioration de la compétence en grammaire des étudiants en Anglais. Pour conclure, les enseignants et les étudiants sont concernés par l’utilisation des appareils informatiques comme des nouveaux outils pédagogiques d'une manière appropriée afin d’avoir de meilleurs résultats pédagogiques.