Sudan UniversityofScienceandTechnology

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Investigating the Effect of Integrating Multimedia in Developing EFL Cognitive Learning

تقصي أثر إستخدام الوسائط المتعددة لتطوير المهارات الذهنية لدى دارسي اللغةالإنجليزية لغة أجنبية

A Study Submitted for the Fulfillment of the Requirementsfor the Degree ofDoctorate of Philosophy in Applied Linguistics

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Dedication

This work is dedicated to

My parents

My beloved wife and new born son

My colleagues and my friends

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First of all, I would like to thank all faculty members in Faculty of Education,Sudan University of Science & Technology for the efforts have been exerted to complete this work. Then, I am indebted to **Dr. Mohammed Bakri** with deep gratitude for his support, constructive feedback and comments.I am deeply thankful to Dr. AmnaBadryfor her valuable advice.I also would like to put forward myspecial thanks to **Dr. Amir Mohammed** for providing me with his insightful guidance support in making out this work.Last but not least, I am very grateful to my family who never hesitate to give hands and especially my wife for supportive. I also wish to thank all my friends for continuous cooperation and true friendship.

Abstract

This study aims to investigate the effect of integrating multimedia in developing EFL cognitive learning, in terms of teaching and learning reading skills. It is based on exploring Sudanese EFL teachers' perspectives and Sudanese EFL tertiary students' experiences.

The researcher has adopted the quantitative and experimental methods. Two forms of questionnaire and a test are used for data gathering. The two questionnaires are conducted to address both EFL Sudanese universities teachers and EFL Sudanese tertiary students. The test is constructed as pre and post-test as control group and experimental group. The obtained data from the two questionnaires and the two tests have been computationally processed with SPSS.

The result of this study reveals that Sudanese EFL teachers have basic knowledge to administer multimedia tools. Most of teachers are enthusiastic to try the interactive multimedia tools in EFL classroom. The majority of teachers confirmed that their performance is satisfactory when using multimedia in teaching reading skills. Since, multimedia enhances EFL learning environment, It develops cognitive learning in which increases learner's achievement. Raising multimedia awareness standard is demanded in EFL classes. Multimedia increases students' attention and stimulation in reading comprehension lessons and it makes EFL learning up to date.

As this study recommends that Ministry of Higher Education should equip universities with information communication technology facilities. Ongoing workshops must be conducted to empower the necessity of multimedia in ELT. Interactive multimedia knowledge must be part of teachers' training. Authorities and ELT experts may contrive teachers by organizing ELT conferences and seminars regarding innovative modern instruction.

مستخلص

تهدفالدراسةإلىالبحثفيتأثيردمجالوسائطالمتعددةفيتطويرالتعلمالادراكي،فيمايتعلقبتدريسوتعليممهاراتالقراءة،مرتكزةبذلكعلىرؤىالمعلمينالسودانيينللغةالانجليزيةكلغةأجنبيةفيتلكالوسائط،وتجربةالطلابالسودانييناللذينيدرسونهاللغةبعدالمرحلةالثانوية.

ولقدقامالباحثباستخدامطرقالبحثالكميوالتجريبيمستعملااستبيانينواختبارينلكلمنمعلميالجامعاتالسودانيينللغةالانجليزيةكلغةأجنبيةولطلابالمرحلةبعدالثانوية.وتماجراءالاختبارمرتين،الأولىقبلالقراءةوالثانيةبعدهاللمجموعةالتجريبيةوالمجموعةالضابطة.

وتمتحليلالبياناتالتيتمّالحصولعليهاحسابياً ًمنالاستبيانينوالاختبارينباستخدامبرنامجالحزمالإحصائيةللعلومالاجتماعية (SPSS).

وقدكشفتتلكالدراسةأنلدىالمعلمينالسودانيينللغةالانجليزيةكلغةاجنبيةخلفيةعناستخداموسائلالوسائطالمتعددةفيالتدريساللغوي.

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وبناءعلىثبوتتعزيزالاستعانةبالوسائطالمتعددةلبيئةتعليماللغةالانجليزيةكلغةاجنبيةفيالمناخالتعليمي،بالإضافةإلىتطويرهاللتعلمالادراكيمثمرةتحسناجلياًفيتحصيلالطلاب،فينبغيالعملعلىزيادةالوعيبأهميةاستخدامتلكالوسائطداخلالفصلالدراسيعندتدريساللغةالانجليزيةكلغةاجنبية.

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وتوصيالدراسةمؤسساتوزارةالتعليمالعاليبتزويدالجامعاتبوسائلتكنولوجياحديثةواقامةورشعملدوريةتحثعلىأهميةاستخداموسائطالمتعددةفيتدريساللغةالإنجليزيةكجزءلايتجزأمنالعمليةالتعليمية،كماأنعلىتلكالهيئاتالعملعلىزيادةوعيمعلميناللغةالإنجليزيةبالوسائطالمتعددةوعلاقتهابتطورالأداءالتعليميللمعلمين،خاصةالمعلمينالجدد.

كمايمكنأنتسهمالهيئاتوبيوتالخبرةفيإعدادمعلمينأكفاءمنخلالإقامةمؤتمراتوندواتخاصةبتطويرتعليماللغةالانجليزيةلمناقشةطرقتدريسابداعيةوحديثة.

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List of Abbreviations

ACOT	Apple Classrooms of Tomorrow
CAE	Computer-Assisted Education
CALL.	Computer-Assisted Language Learning
CALT.	Computer-Assisted Language Testing
CAT	Computer Assisted Teaching
CAI	Computer Assisted Instruction
CBT	Computer Based Training
CG	Computer Game
CMC	Computer-Mediated Communication
DVD	Digital Video Disc
EFL	English as a Foreign Language
ELT	English Language Teaching
ESL	English as a Second Language
FLL	Foreign Language Learners
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
HBDI	Herrmann Brain Dominance Instrument
HCI	Home Computer Initiative
IBM	International Business Machines
ICT	Information and Communication Technology
IM	Interactive Multimedia
ISTE	International Society for Technology and Education
IT	Information Technology
L1	First Language
L2	Second Language

MA Multimedia Applications

MAC Macintosh

MG Multimedia Games

MP Multimedia Presentation

MPEG Moving Picture Experts Group

MW Multimedia Work

NSs Native Speakers **PC** Personal Computer

PDA Personal Digital Assistant

RA Rhetorical Artifact

SWF Shock Wave Flash

SLA Second Language Acquisition

SLI Second Language Input

SLL Second Language Learner

TESL Teaching English as a Second Language

TESOL Teaching English to Speakers of Other Languages

TICCIT Time-shared, Interactive, Computer-Controlled Information Television

TPR Total Physical Response

URL Uniform resource Locator

VR Virtual Reality

VCR Video Cassette Recorder

WAES Web-based Adaptive Educational Systems

WBI Web Based Instruction

WBT Web Based Training

Definition of Terms

Cognition is the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses. It encompasses processes such as knowledge, attention, memory and workingmemory, judgment and evaluation, reasoning and computation, problem solving and decision making, comprehension and production of language, etc. Human cognition is conscious and unconscious, concrete or abstract, as well as intuitive (like knowledge of a language) and conceptual (like a model of a language). Cognitive processes use existing knowledge and generate new knowledge.

Com**puter-Assisted Language Learning**: it refers to the use of computers to help people to learn second or foreign language.

Computer-Assisted Language Teaching: it refers to the use of computers to help people in teaching second or foreign language.

Computer- Based Applications:it is known asusing computer technology in ESL/EFL teaching and learning.

Computer-Based: "mixed-media" it is a multimedia work or digital work that is accessed through the computer even if parts were created in analog form and then digitized for integration on the computer.

Curriculum Design: the term refers to designing study programmes and courses offered by schools, institutes, etc.

E-Learning: it has been defined as providing courses on the Internet for students so that they can study at home.

Information Technology: it isthe use of electronic processes for gathering and storing information and making it available using computer.

International Business Machines: (commonly referred to as IBM) is an American multinational technology company headquartered in Armonk, New York, United States, with operations in over 170 countries. The company originated in 1911 as the Computing-Tabulating-Recording Company (CTR) and was renamed "International Business Machines" in 1924.

Integration Artistic Whole: a multimedia work is not just a random collection of different media gathered somewhere on the system. The integration of media is the result of deliberate artistic imagination aimed at producing a work that has artistic unity.

Interactive Multimedia:itis known as any computer-delivered electronic system that allows the user to control, combine, and manipulate different types of media, such as text, sound, video, computer graphics, and animation.Interactive multimedia integrates computer, memory storage, digital (binary) data, telephone, television, and other information technologies.

Interactive: it is defined as the one of the features of multimedia is the interactivity or the programming that structures for the viewer's experience. Some level of interactivity is assumed in any computer-based work,

Multimedia: is content that uses a combination of different content forms such as text, audio, images, animations, video and interactive content. Multimedia contrasts with media that use only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material. In the other words it

can be recorded and played, displayed, interacted with or accessed by information content processing devices, such as computerized and electronic devices,

Multimedia Presentations: can be live or recorded. A recorded presentation may allow interactivity via a navigation system. A live multimedia presentation may allow interactivity via an interaction with the presenter or performer. Multimedia

presentations may be viewed by person on stage, projected, transmitted, or played locally with a media player. A broadcast may be a live or recorded multimedia presentation. Broadcasts and recordings can be either analog or digital electronic media technology. Digital online multimedia may be downloaded or streamed. Streaming multimedia may be live or on-demand.

Multimedia Games and Simulations: may be used in a physical environment with special effects, with multiple users in an online network, or locally with an offline computer, game system, or simulator.

Multimedia Technology: it refers to computer science; inventions related to computers; new machines, equipment, and ways of doing things that are based on computers. It includes reading software programs, internet-based programs, video projector and digital cameras, audio.

Moving Picture Experts Group (MPEG):is a working group of authorities that was formed by ISO and IEC to set standards for audio and video compression and transmission.

PowerPoint: widely used computer graphics programme for preparing slides and presentations in a Windows environment.

Rhetorical Artifact: a multimedia work is one designed to convince, delight or instruct in the classical sense of rhetoric. It is not a work designed for administrative purposes or any collection of data in different media.

Technology: refers to any computer device or electronic device which is attached to a computer use in classroom.

Teaching Performance: how well or badly a teacher does a particular activity, a lesson presentation in classroom.

Video Reality: often refers to virtual reality, a computer technology that simulates an environment with which a user may interact.

Windows: computer-operating system that is based on a graphical user interfaceand supports multitasking.

Chapter One

Introduction

1.0 Introduction

During the past few years, the world has witnessed a phenomenal growth in communication technology. It is represented in computer networks and information technology. This study sets out to investigate the role of multimedia and effective instructional use regarding improving teaching and cognitive learning of reading skills for English as a Foreign Language (EFL).

The investigation of the study looks at the interaction between technology-effective characteristics and other learning-related characteristics. It also investigates the in-school and out-of-school usage of multimedia. The investigation of teaching and/or instruction looks at the combination of factors that affect each type of learning outcomes. It considers the relationships of the measurement of effectiveness. It includes learning progress, learning attainment and learning motivation of the first year tertiary students by means of a computer. As well as it evaluates their developed abilities and their attitude towards learning. Multimedia in the context of this study is computer effectiveness. It has been adopted in so many areas including business, entertainment, government, and education. The global adoption of computer technology has been the landmark on the educational scene for the last few years.

The researcher sheds light on the growth of those communication and computer systems. Throughout this study, both the ease of use and diversity of information transmission will be covered. It allows Sudanese EFL teachers and learners to have access to the world beyond the classroom. On the one hand, it has the potential to

transform the nature and process of the learning environment in addition to its envisioning a new learning culture interactivity, flexibility, and convenience, which have become the order of the day in the technology supported environment. On the other hand, the role of multimedia technology effective use will open up opportunities for cognitive learning. It enables EFL learners to access, extend, transform and share ideas and information in multi-modal communication styles and format as well as helping learners to share learning resources and spaces. It promotes learner-centered and collaborative learning principles. It enhances critical thinking, creative thinking, and problem-solving skills. Thus, multimedia technology is the fundamental building block. Therefore, it is one of the most effective means of achieving a quality education. Not only mastering computer skills but also utilizing it to improve teaching and learning is of utmost importance for teachers in performing their role of creators of pedagogical environments in higher education.

This study is going to provide some evidence of the effectiveness of using multimedia in technical considerations. Particularly, It improves EFL teaching and EFL learning process. It will pave the way to know more bit about which learning strategies and pedagogical framework should be used for education and training. How to construct these electronic teaching and learning environments? What will be the new vision and guiding principles of teacher development for pedagogy-technology integration? As we become increasingly supported by computer systems. EFL teaching and learning process will not be the same as before. EFL Teachers will have to make use of the rich and exciting opportunities offered by the new technology in education, in order to reach our new goal and vision. EFL teachers need to understand the major paradigm shifts in education in the recent years, and to make it a reality, especially, in higher education. As remarked by

Albirini, (2006). Harvey (1983) stated that the effectiveness of the use of computers in education may be an important factor in determining which countries will succeed in the future. Additionally, the development of a new broadband communication services with computers have created numerous possibilities to use a variety of new technological tools for teaching and learning system. The integration of computers and communications offers unprecedented opportunities to the educational systems with its capacity to integrate, enhance and interact with each other in a meaningful way to achieve the teaching-learning objectives".

However, as the case of developing countries, particularly in Sudan, the metaphor of the information age has generated a whole set of speculations about the need for educational system reformation. The reformation will accommodate the new tool.

Education, thus, with regard to the use of multimedia in teaching is to increase teaching-learning gains. Also, the necessity of reformation is to prepare the coming generation for mass use of computer and android, too.Computer systems are used in education for varied reasons as Leshin, Pollock, &Reigeluth, (97-99-1992) suggested that in most of the schools, computers are used to aid management and administrative activities, that directly relate to management and administrative support, they steer the management of the whole organization as one entity. In addition, computer applications are used in schools as an object of instruction-learning to acquire computer knowledge and skills to meet the challenges of the information age. Moreover, in most schools, specifically in higher institutions, the curricula have been upgraded to include computer components (e.g., computer application in accounting, computer application in design and technology, computer application in medicine, computer application in curriculum development. Furthermore, and more importantly, computers are used for language learning and instructional purposes.

In regard to the design of effective improvement for EFL teaching and learning Merrill (2002, 2006) identified that the first five principles of instruction: task centeredness, demonstration, activation, application, and integration. However, Merrill argued that any quality instruction should meet all the five principles. Task centeredness is based on the proposition that development of competencies is promoted if learners are engaged in solving real life problems. This has been the main focus of contemporary learning theories. Task-based instruction provided a specific demonstration of a particular whole task similar to those things the learners will confront in real life settings. The demonstration principle indicates that learners remember and can apply information better when the information includes specific examples.

Roschelle, Pea, Hoadley, Gordin, & Means (2000) indicated that showing a learner what to do through worked out examples, and modeling example, in addition to practice, are important dimensions for successful learning. The activation principle emphasizes that learning is promoted when relevant prior knowledge is activated. Stimulating prior knowledge of the learners and making it active for use in working memory, as a foundation for new information, is the key to productive and successful learning. The application principle asserts that learning is promoted when learners are required to use their new knowledge to solve problems. Finally, the integration principle indicates that learning is facilitated when learners are encouraged to integrate new knowledge or skills into their everyday life.

Merrill et al, (2006) indicated that the real intrinsic motivation for learners is learning. Learners have integrated instruction into their life when they are able to

demonstrate improvement in skills and modify their new knowledge for use in their everyday lives.

Noted by Earl (2002), Sarfo&Elen (2007) and many other instructional technology researchers, the costs are huge, but the impact may not be realized as expected. Solomon (2002) indicated that' the revolutionary change in education; learning in particular expected with the multimedia has not been realized. One of the reasons assigned to this, according to Solomon, is that computer users in educational settings, thinking that computer alone will bring a revolutionary change in learning, mostly focus on access to the computer rather than on effective instructional principles designed by teachers.

Finally, multimedia technology is either the basic requirement for productive teaching and learning or be a leader in pedagogical innovation. Then the use of multimedia may be part of a more extensive pedagogical innovation based on the principles of effective instruction. Therefore, it is essential in achieving the modern aims of education. It is very important also to focus more attention on the teachers training to acquire quality knowledge and skills in instructional design related to the principles of effective instruction. It is also important to expose learners to the effective principles of instruction.

1.1 Statement of the Study Problem

Traditional Sudanese EFL teaching and learning is no longer attractive and less adaptive. EFL Learning through facts, drill, and practices, rules and procedures which were more adaptive in earlier days. It was adopted an environment in which involves second language learners (SLL) and foreign language learners (FLL) in higher education. Thus, during the last three decades, the changes in the educational environment have been phenomenal. The model focus along with the

role of the learners and technology has been changed drastically from traditional instruction to virtual learning environment as depicted below.

This study tries to investigate the role of multimedia in improving EFL Sudanese teaching performance and cognitive learning in terms of reading skills. Through observation, the researcher realized that there were some discrepancies between what Sudanese EFL teachers already know and believe about the effectiveness of employing technology and the real ground of EFL teaching practices. The problem is that there are so many new available technology tools for EFL Sudanese teachers to use in their classrooms. EFL Sudanese teachers should realize if they spend the initial time learning to use technology tools. On the one hand, some Sudanese EFL teachers are enthusiastic about the integration of multimedia in their classes, and some of them are anxious about change. They would shy away from multimedia technology or sometimes use it inadequately. On the other hand, EFL Sudanese learners will benefit from integrating multimedia into the EFL classroom. Multimedia technology can also improve EFL learning process. However, the researcher introduces a great deal of interest in learning through projects and problems, inquiry and design, discovery and invention, creativity and diversity, action and reflection, which is perhaps more suitable for the present times. The major feature of this learning transition comes from a teacher-centered to the learner-focus paradigm. The obvious shifting of emphasis from teaching to learning can create a more interactive and engaging learning environment for teachers and learners. This new environment also involves a change in roles of both teachers and learners. The role of the teachers will change from a knowledge transmitter to that of a facilitator, knowledge navigator and sometimes as co-learner. The new role of teachers amends a new way of thinking and understanding of the new vision of learning process.

EFL Sudanese Learners will have more responsibilities for their own learning as they seek out, find, synthesize, and share their knowledge with others by making use of effective technology. Computer applications represent a powerful tool that supports the shift from the teacher-centered to learner-centered paradigms and new roles of teacher, learner, curricula and new media. For all these changes to occur in EFL Sudanese learning and teaching, a new learning environment that effectively harnesses the power of multimedia technology to improve learning should be employed. Multimedia has the potential of transforming the nature of education, its place, time and method of learning. It will facilitate the emergence and spread of knowledge within the Sudanese society, emphasizing lifelong learning with meaningful and enjoyable learning experience.

1.2 Objectives of the Study

Multimedia effective use is a key to productive and successful EFL teaching and learning. It improves modeling examples, practice, and better implementation. This study is aimed to:

1. Encourage Sudanese English language teachers to add multimedia in teaching reading skills.
2. Rate the significant correlations between multimedia use and developing reading proficiency.
3. Determine the associations exist between integrating multimedia access and Sudanese EFL learners' attitude.

1.3 Hypotheses of the Study

The role of modern technology effective use in EFL learning process is a relatively new phenomenon. Thus, the study mainly focuses on the effective integration of this technology into classroom practices poses challenges to teachers and learners. Therefore, this study hypothesizes the followings:

1. Sudanese EFL teachers are enthusiastic about incorporating multimedia in the field of EFL.

2. Using Multimedia in teaching reading skills is a prerequisite for Sudanese EFL learners.

3. Multimedia enhances students' ability to develop reading skills.

1.4 Questions of the Study

The following research questions were constructed to verify the hypotheses and to achieve the research objectives.

1. To What extent Sudanese English language teachers are enthusiastic about incorporating multimedia in the field of EFL?

2. How can the use of multimedia in teaching reading skills be deemed as prerequisite for Sudanese EFL learners?

3. How can multimedia enhance students' ability to develop reading skills?

1.5 Significance of the Study

Using multimedia can be beneficial to EFL teaching practices and learning experience. This has been a topic of research and discussion since the 1950s, where multimedia technology has revolutionized both EFL teaching and learning in higher education (Roschelle, Pea, Hoadley, Gordin& Means 2000).

The purpose of this study is to prove the importance of adding multimedia into teacher's instruction method. In this information age, technology helps make

language lessons similar to a real-life situation, thereby contributing to the usefulness and practicality of the classroom experience. When teachers use modern technology in their classrooms along with their instructional strategies, learners could be more excited and motivated in the learning process, thus changing their somewhat negative attitudes towards technology in learning, as they find themselves increasingly engaged in the lesson, which in turn is positively reflected on their test scores.

This study aims to show significant improvement in real EFL Sudanese teaching and learning by exploring that the abundance of software does not mean using it would not always have an immediate and sustained positive effect on EFL Sudanese learners. For these benefits to be achieved, EFL Sudanese teachers must not only be encouraged to add multimedia in the classroom, but they also have to undergo professional development in combining the use of technology with effective instructional strategies. Therefore, this study is considered significant due to its contribution in that field.

Using multimedia in EFL learning can increase both motivation to communicate, respond and initiate conversations with enhancing learners' understanding, making them more socially adept and confident with a broader view of processes, systems, and critical thinking. On the one hand, it is represented in the popularization of the Internet access to information and ease of communication. On the other hand, it generates the ability to become part of an electronic community among multiple educational resources that have become widely available for learners nowadays.

Moreover, the study shows how EFL Sudanese learners appear to welcome the new multimedia in their English classrooms. However, the question still remains

whether such use or enthusiasm could be translated into perceptions of increased learning and course effectiveness.

Technology provides a richer learning environment where the EFL Sudanese learner can be more actively involved in their own learning. It increases the amount of learning by using technology resources that are available to instructors and learners as well. Then, it reflects the shift in learning strategies that the flexibility of technology affords in contrary to traditional instruction. It generally involves an instructor-led, didactic approach to learning. Eventually, it also shows the introduction of the vital role of the computer into the classroom will come up with promises to change the passive learning approach by introducing interactive and dynamic capabilities into the classroom. Consequently, the following considerations can be added;

*Shifting the emphasis from teaching to learning can create a more interactive and engaging learning environment for teachers and learners.

*Using the computer in teaching and learning EFL promotes the achievement of quality education.

*Using a computer as a technological tool can support EFL learners to gradually acquire knowledge and skills.

*Using a computer as a technological tool can help EFL learners to solve challenging real life problems in a better way.

*Using a computer as a technological tool can present good examples of lifelike skills or procedures to help them in their everyday life.

1.6 Limits of the Study

A major limitation of the study is that the topic of instructional technologies is very broad and cannot be fully covered in one study. Therefore, this study is concentrated on the multimedia technology that could or should be commonly integrated within the EFL Sudanese context. Limiting the study to this multimedia does not rule out the importance and impact that other technologies have in EFL Sudanese teaching and learning process. This study mainly explores an effective pedagogy with the use of multimedia in EFL Sudanese teaching and learning in terms of reading skills. It reflects the perspectives of tertiary students' learning experience and reflective teaching practices, beginning with a review of factors that could improve EFL Sudanese teaching and learning environment using multimedia technology on the ground of contemporary theories and models of teaching and learning. Multimedia is used as the framework of investigation throughout the study, which involves EFL Sudanese teachers with different university qualifications and expertise in ELT in addition to first-year tertiary students selected from different colleges at the Sudan International University (SIU).

1.7 The Research Format

This study encompasses five chapters: the general framework of the study; literature review, the methodology of the study; analysis of data and discussion, conclusion, findings, and recommendations.

Chapter one provides an overview of the topic of the research as well as highlighting the research problem. The objectives of the study along with its questions are illustrated, and then the researcher points out the study hypotheses with reference to its significance and limits.

Chapter two is devoted to the presentation of the theoretical framework of the study, literature review and reporting the findings of the major research which has

been done in the field of using multimedia technology in teaching English as a foreign language.

Chapter three reports the methodology adopted in collecting data, the procedures along with showing the reliability and validity of the questionnaire.

Chapter four introduces the results of the study as well as their interpretations, leading to chapter five that concludes the findings of the study, states the recommendations and suggests areas for further future research.

1.8 Summary

This introductory chapter presents the general framework of the study. It is concerned with the presentation of the statement of the problem, objectives, hypotheses, questions, significance, limits of the study and concludes with research outline.

Chapter Two

Literature Review and Previous Studies

2.0 Introduction

This chapter introduces a great deal of concern in related literature to this study. It is going to focus attention on different sources including the findings of related studies. It reviews the theoretical foundations of computer assisted teaching and computer assisted language learning process. It presents multimedia tools in teaching and learning EFL in terms of benefits, facilitating, problems and the consequences of such implementation.

2.1 Theories and Histories of Multimedia

2.1.1 Different Approaches Bring the Real World to the Language Classroom through Multimedia

The present research examines the valuable aspects of the use of multimedia in the language classroom. The study of multimedia as a form of expression has not developed a theoretical tradition. Instead, critical theories from existing disciplines are being applied with increasing ingenuity from film studies to literary theory. The very issue of what existing theoretical traditions can be usefully applied to multimedia is a source of discussion.

As summarized by Mayer and Moreno. (2000) when integrating multimedia into the lesson plan through media, attract students´ attention to the topic presented in the class, enhance and facilitate comprehension of grammar and language, increase students' motivation, as well as help students to memorize the new vocabulary and structures. Apart from being an excellent tool to improve the language acquisition, the use of visual multimedia in the classroom provides a more meaningful context

for the students. All these factors lead students to become more participative and communicative members of the class group.

Cotton, Bob & Richard (2000) noted that a traditional way of thinking through what is new is to recover its histories. The histories of multimedia are still being negotiated and include the histories of different media, the history of computing, and the history of the critical theories applied to multimedia. One history of multimedia is the history of the computer as it evolved from a machine limited to numeric processing to a machine capable of handling multiple media. This is the history told here. An important feature of the computer as distinct from dedicated calculating devices is that the computer is a general purpose machine that can be extended to do different tasks (and handle different media) A calculator is an information appliance that is designed for and limited to, certain operations. The modern computer as it emerged after the Second World War is a general purpose machine that can be adapted to new purposes through programming and peripherals. The history of the computer since the ENIAC can be seen as the working out of this idea in different ways including the working out of techniques for managing different media. While the first computers were designed solely to do scientific and applied numerical calculations they were, over the years, extended to be able to handle alphanumeric strings (text), then raster and vector graphics (images), audio (sound), moving pictures (video and animation) and finally three-dimensional objects and space. Today's personal computer can handle all these media with the appropriate peripherals, making multimedia development and consumption available to the home user.

Petterson, (2004) concluded that multimedia have been an important component of the language classes over the years. To be exact, the use of multimedia visual aids for presenting, training, and teaching languages has been around since the 1920s – 1930s, consisting mainly of filmstrips, pictures, slides and pass around objects.

They have been considered a useful tool for teachers in almost every trend of second language teaching. Such was an impact of visual materials that several universities have even created catalogs of visual aids that trace the history of using visual literacy and visual education.

2.1.2 Cognitive Theories

Cognition is the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses. It encompasses processes such as knowledge, attention, memory and working memory, judgment and evaluation,

reasoning and "computation", problem solving and decision making, comprehension and production of language, etc. Human cognition is conscious and unconscious, concrete or abstract, as well as intuitive (like knowledge of a language) and conceptual (like a model of a language). Cognitive processes use existing knowledge and generate new knowledge.

The processes are analyzed from different perspectives within different contexts, notably in the fields of linguistics, anesthesia, neuroscience, psychiatry, psychology, education,

philosophy, anthropology, biology, systemics, logic, and computer science. These and other different approaches to the analysis of cognition are synthesised in the developing field of cognitive science, a progressively autonomous academic discipline. Within psychology and philosophy, the concept of cognition is closely related to abstract concepts such as mind and intelligence. It encompasses the mental functions, mental processes (thoughts), and states of intelligent entities (humans, collaborative groups, human organizations, highly autonomous machines, and artificial intelligences (Brown, John S., Allan Collins, & P. Duguid, 1989)

Thus, the term's usage varies across disciplines; for example, in psychology and cognitive science, "cognition" usually refers to an information processing view of an individual's psychological functions. It is also used in a branch of social psychology called social cognition to explain attitudes, attribution, and group dynamics. In cognitive psychology and cognitive engineering, cognition is typically assumed to be information processing in a participant's or operator's mind or brain.

Similarly, Wilson, Brent G., & Karen M. (1999) suggested that "cognition can in some specific and abstract sense also be artificial. The term "cognition" is often incorrectly used to mean "cognitive abilities" or "cognitive skills".

According toYang, Hanneke &Carbonell (1987) **"**the sort of mental processes described as *cognitive* are largely influenced by research which has successfully used this paradigm in the past, likely starting with Thomas Aquinas, who divided the study of behavior into two broad categories: cognitive (how we know the world), and affective (how we understand the world via feelings and emotions. Consequently, this description tends to apply to processes such as memory, association, concept formation, pattern recognition, language, attention, perception, action, problem solving and mental imagery. Traditionally, emotion was not thought of as a cognitive process. This division is now regarded as largely artificial, and much research is currently being undertaken to examine the cognitive psychology of emotion; research also includes one's awareness of one's own strategies and methods of cognition called metacognition and includes metamemory.

Empirical research into cognition is usually scientific and quantitative, or involves creating models to describe or explain certain behaviors. While few people would

deny that cognitive processes are a function of the brain, a cognitive theory will not necessarily make reference to the brain or other biological process (compare neurocognitive. It may purely describe behavior in terms of information flow or function. Relatively recent fields of study such as cognitive science and neuropsychology aim to bridge this gap, using cognitive paradigms to understand how the brain implements these information-processing functions (see also cognitive neuroscience), or how pure information-processing systems (e.g., computers) can simulate cognition (see also artificial intelligence). The branch of psychology that studies brain injury to infer normal cognitive function is called cognitive neuropsychology. The links of cognition to evolutionary

demands are studied through the investigation of animal cognition. And conversely, evolutionary-based perspectives can inform hypotheses about cognitive functional systems' evolutionary psychology". "The theoretical school of thought derived from the cognitive approach is often called cognitivism. The phenomenal success of the cognitive approach can be seen by its current dominance as the core model in contemporary psychology (usurping behaviorism in the late 1950s)" (Soltis (2004)).

2.1.2.1 Piaget's theory of cognitive development

For years, sociologists and psychologists have conducted studies on cognitive development or the construction of human thought or mental processes.

Jean Piaget was one of the most important and influential people in the field of Developmental Psychology. He believed that humans are unique in comparison to animals because we have the capacity to do "abstract symbolic reasoning." His work can be compared to Lev Vygotsky, Sigmund Freud, and Erik Erikson who were also great contributors in the field of Developmental Psychology. Today, Piaget is known for studying the cognitive development in children. He studied his

own three children and their intellectual development and came up with a theory that describes the stages children pass through during development (Harris, Lowery-Moore & Farrow, 2008).

2.1.2.2. Cognitivism

Gestalt Theory

Cognitive theories grew out of Gestalt psychology. Gestalt psychology was developed in Germany in the early 1900s by Wolfgang Kohler[and was brought to America in the 1920s. The German word *Gestalt* is roughly equivalent to the English *configuration* or *organization* and emphasizes the whole of human experience.[20] Over the years, the Gestalt psychologists provided demonstrations and described principles to explain the way we organize our sensations into perceptions.[21] Matt Wertheimer, one of the founding fathers of Gestalt Theory, observed that sometimes we interpret motion when there is no motion at all.[22] For example: a powered sign used at a convenience store to indicate that the store is open or closed might be seen as a sign with "flashing lights". However, the lights are not actually flashing. The lights have been programmed to blink rapidly at their own individual pace. Perceived as a whole, the sign flashes. Perceived individually, the lights turn off and on at designated times. Another example of this would be a brick house: As a whole, it is viewed as a standing structure. However, it is actually composed of many smaller parts, which are individual bricks. People tend to see things from a holistic point of view rather than breaking it down into sub units.

In Gestalt theory, psychologists say that instead of obtaining knowledge from what's in front of us, we often learn by making sense of the relationship between what's new and old.[22] Because we have a unique perspective of the world, humans

have the ability to generate their own learning experiences and interpret information that may or may not be the same for someone else.

Gestalt psychologists criticize behaviorists for being too dependent on overt behavior to explain learning. They propose looking at the patterns rather than isolated events.[23] Gestalt views of learning have been incorporated into what have come to be labeled *cognitive theories*. Two key assumptions underlie this cognitive approach: that the memory system is an active organized processor of information and that prior knowledge plays an important role in learning. Gestalt theorists believe that in order for learning to occur prior knowledge must exist on the topic. When the learner applies their prior knowledge to the advanced topic, the learner can understand the meaning in the advanced topic, and learning can occur Cognitive theories look beyond behavior to consider how human memory works to promote learning, and an understanding of short term memory and long term memory is important to educators influenced by cognitive theory.[24] They view learning as an internal mental process (including insight, information processing, memory and perception) where the educator focuses on building intelligence and cognitive development.[10] The individual learner is more important than the environment (Larsen-Freeman, 2013).

Once memory theories like the Atkinson-Shiffrin memory model and Baddeley's working memory model were established as a theoretical framework in cognitive psychology, new cognitive frameworks of learning began to emerge during the 1970s, 80s, and 90s. Today, researchers are concentrating on topics like cognitive load and information processing theory. These theories of learning play a role in influencing instructional design. Cognitive theory is used to explain such topics as social role acquisition, intelligence and memory as related to age.

In the late twentieth century, situated cognition emerged as a theory that recognized current learning as primarily the transfer of decontextualized and formal knowledge. Bredo (1994) depicted situated cognition as "shifting the focus from individual in environment to individual and environment".[In other words, individual cognition should be considered as intimately related with the context of social interactions and culturally constructed meaning. Learning through this perspective, in which known and doing become inseparable, becomes both applicable and whole.

Much of the education students receive is limited to the culture of schools, without consideration for authentic cultures outside of education. Curricula framed by situated cognition can bring knowledge to life by embedding the learned material within the culture students are familiar with. For example, formal and abstract syntax of math problems can be transformed by placing a traditional math problem within a practical story problem. This presents an opportunity to meet that appropriate balance between situated and transferable knowledge. Lampert (1987) successfully did this by having students explore mathematical concepts that are continuous with their background knowledge. Then develops the lesson to include more complex stories that allow for students to see various solutions as well as create their own. In this way, knowledge becomes active, evolving as students participate and negotiate their way through new situations (Bredo, 1994).

2.1.2.3. Constructivism

Founded by Jean Piaget, constructivism emphasizes the importance of the active involvement of learners in constructing knowledge for themselves. Students are thought to use background knowledge and concepts to assist them in their acquisition of novel information. When such new information is approached, the learner faces a loss of equilibrium with their previous understanding which demands a change in cognitive structure. This change effectively combines previous and novel information to form an improved cognitive schema. Constructivism can be both subjectively and contextually based. Under the theory

of radical constructivism, coined by Ernst von Glasersfeld, understanding relies on one's subjective interpretation of experience as opposed to objective "reality". Similarly, William Cobern's idea of contextual constructivism encompasses the effects of culture and society on experience.

Constructivism asks why students do not learn deeply by listening to a teacher, or reading from a textbook. To design effective teaching environments, it believes one needs a good understanding of what children already know when they come into the classroom. The curriculum should be designed in a way that builds on the pupil's background knowledge and is allowed to develop with them. Begin with complex problems and teach basic skills while solving these problems.[33] The learning theories of John Dewey, Maria Montessori, and David A. Kolb serve as the foundation of the application of constructivist learning theory in the classroom.[34] Constructivism has many varieties such as active learning, discovery learning, and knowledge building, but all versions promote a student's free exploration within a given framework or structure. The teacher acts as a facilitator who encourages students to discover principles for themselves and to construct knowledge by working answering open-ended questions and solving real-world problems. To do this, a teacher should encourage curiosity and discussion among his/her students as well as promoting their autonomy. In scientific areas in the classroom, constructivist teachers provide raw data and physical materials for the students to work with and analyze (Brown, John, Allan Collins & Paul Duguid, 1989).

2.1.2.4 The Importance of the Input, Dual-Coding Theory, and Image Schema Theory.

According to Fotos, (2001) the importance of visual material in the process of language acquisition was researched by scholars belonging to the Cognitive

approach. Some of the theories that these scholars have developed are related to the importance of the input, dual-coding theory and image schema theory, which are deeply linked with the visual and experimental relationship of the human being with the world. Cognitivists allege that second language acquisition can be better understood by focusing on how the human brain processes and learns new information

Mitchell and Myles, (2004) assumed that "the meaning constructed through the language is not an independent module of the mind, but it reflects all of the human beings' experiences (Geeraerts, 2006). Linguistic meaning is based on usage and experience, and therefore students should be placed in an environment that trigger their experiences and let them use the language for real purposes as many times as possible".

Visuals can support the input that the student receives. In the cognitive approach to second language learning, a lot of prominences is given to the access to the target language input. Gass (1997) asserts that 'second language acquisition is shaped by the input one receives' (as cited in Fotos, 2000). Fotos also states that the input the students receive in the classroom can be manipulated in order to make it easier to understand, fitting their needs and level. She defends her position by arguing that teachers have been doing it over the years, with different strategies such as simplifying the grammar activities or physically highlighting the important points of a particular topic (grammar structures or vocabulary) in the presentations or in the prints that they hand to them (Fotos, 2000).

This directs our attention to Krashen's Input Hypothesis, which claims that "we move along the developmental continuum by receiving comprehensible input. Comprehensible input is defined as second language input just beyond the learners' current second language competence in terms of syntactic complexity". (Krashen, 1985, p.2). Thanks to the visuals provided in the classroom, the second language

input will be easily understood. They provide conceptual scaffolding, through cultural context or other clues, and it helps with the natural associations of images and words (Mannan, 2005).

The dual-coding theory explains part of the way the brain process the new information (the input). As Paivio (1991) wrote, cognition is formed by two subsystems, a verbal one and a non-verbal one. The first is in charge of dealing directly with the language, and the second is specialized in dealing with non-linguistic objects and events. These two systems are assumed to work together in the language acquisition. Therefore 'combining pictures, mental imagery, and verbal elaboration could be an effective method in promoting understanding and learning from the text by students ranging from grade school to university level' (Paivio, 1991, p.163).

Similarly, another point developed by cognitivism, as it has been mentioned before, is the image schema theory. It derives from the claim that knowledge is not static, propositional and sentential, but is grounded in and structure by various patterns of our perceptual interactions, bodily actions, and manipulation of objects. Following Johnson and Lakoff studies, they suggested that over two dozen different image schemas and several image schema transformations appear regularly in people's everyday thinking, reasoning and imagination (as cited in Gibbs, 2006). These image schemas are defined as 'dynamic analogical representations of spatial relations and movements in space and each one of them reflect aspects of our visual, auditory and kinesthetic bodily experience (Gibbs, 2006, p. 240).

Lantlof, (2000) also coined a new term called the Experiential Realism that is based on the assumption that there is a reality "out there", and that the purpose of our perceptual and cognitive mechanisms is to provide a representations of this reality (as Usage of Multimedia Visual Aids in the English Language Classroom.

According to this, if we want to set our students in a meaningful context, they should be placed in the reality they live in. In order to do it, we must bring the reality "out there inside the classroom.

2.1.3 The Importance of Visuals in Second Language Acquisition SLA

Most of the English language teachers seem to agree that the use of visuals can enhance language teaching. As they help teachers to bring the real world into the classroom, they make learning more meaningful and more exciting (Brinton, 2000).

According to Lantlof, (2000) it must be taken in to account that visual literacy is the key to obtaining information, construct knowledge and build successful educational outcomes. He asserts that this is due to the increase of the number of images in the world. It is important to point that students bring to the classroom their own background, that nowadays is associated with images provided by mass media, video games etc.

Santas, (2009) reflected on how teachers ask students to think without any of this help, what seems to require convincing them to give up what they have experienced in their lives. Visual aids can be a helpful tool in the language classroom (p.163). As Mannan (2005) pointed out that 'they help the teacher to clarify, establish, correlate and coordinate accurate concepts, interpretations, and appreciations, and enable him to make learning more concrete, effective, interesting, inspirational, meaningful and vivid (p.108).

Visual material or anything uses to help the student see an immediate meaning in the language may benefit the student and the teacher by clarifying the message, if the visuals enhance or supplement the language point, as Canning-Wilson (2000) indicated in her work. These advantages suggest that visuals can help make a task or situation more authentic (Canning-Wilson, 1998).

Researchers as Kemp and Dayton (1985) claimed that “visuals aid in motivation and maintaining attention by adding variety and making the lesson more interesting (as cited in Barrett, (1992). Usage of Multimedia Visual Aids in the English Language Classroom Watkins and Brobaker have collected in their paper several studies from different researchers that conclude that visuals clarify and enhance students learning and that this information is recognized and remembered for longer durations than verbal information alone. Early researchers such as Myers (1982) seem to agree with the idea that the memory for the picture-word combination is superior to memory for words alone or pictures alone. Branch and Boom explain that memory for pictures is superior to memory for words and this effect has been called the Pictorial Superiority Effect (as cited in Petterson, 2004). More recent research studies on visuals and words have shown that memory for visual tends to be better than memory for words (Clark and Lyons, 2004). Some other researchers as Barry (1998) have claimed that persuasion tends to be accomplished in both children and adolescents almost exclusively through imagery and that those images and visuals *speak* directly to us in the same way experience does: holistically and emotionally. Taking this into account Piaget and Inhelder (2000) states that young students have little knowledge of the living world and developing conceptions. Therefore they need more visual information to represent their thoughts (as cited in Arif and Hashim, 2009)”.

Moriarty (1994) also claimed that “human beings develop their visual language skills before the verbal language development and serves as the foundation for the last one. This is a possible explanation for the need of pictorial information rather than textual among young students (Arif and Hashing 2009). Paivio (2009) had already explained this with his theory based on the idea that cognitive growth is stimulated by the balance between verbal and visual experiences in the early stages

of learning. Arif and Hashim (2006) own research proves that pictures gained better attention than words, and among young learners, pictures became the main clue in interpreting the meaning of the words".

As suggested by Clark and Lyons (2004) in the process of learning two different types of memories are involved: working memory and long-term memory. The new information is stored in the working memory which is claimed to be the center of active mental work, including the learning. When the visual and phonetic information is received then it is organized to form a cohesive idea. Finally, this idea must be integrated with active prior knowledge from long-term memory. As it is seen, the two memories work together in complementary ways, to form what is called an updated mental model that will be stored in long-term memory, where it lasts indefinitely.

The virtual capacity of the working memory is affected by how much related the knowledge of the long-term memory is with the domain studied. The more it is related, the more is the virtual capacity. Taking into account that in a learning environment this related knowledge may not be too much, cognitive overload can take place if the working memory cannot process all the new information during learning. In order to avoid this cognitive overload, the two subcomponents of the working memory should be used in their best way. One of these subcomponents is specialized in visual input and the other one in auditory input. For example, if a graphic is explained by words presented in audio, learning the new information is better than if the words are presented in the text. The mental models that have been mentioned before are the schemas Usage of Multimedia Visual Aids in the English Language Classroom stored in the long-term memory and are the basis of thinking, and visuals are claimed to help to build them (Clark and Lyons, 2004, p. 6).

2.1.4 Teaching Approaches and Multimedia

In continuation, a brief overview on the use of visual aids throughout the history of the language teaching is provided hereby. As Brinton, (2001) stated that probably, the Direct Approach was the first one to give importance to the use of visuals in the language classroom. This teaching method, which became popular at the 20s - 30s of the last century, enhanced the use of the target language. Teachers used a direct reference to objects or concepts in order to avoid the mother tongue. The use of tape recordings and picture slides gained special importance in the 1950s -1960s with the rise of the Audio-lingual method in the USA. Based on Skinner´s behaviorist theory, it claimed to provide students´ with best models to imitate native speakers.

The Oral-Situational Approach, dominating in Britain in the middle of the last century, insisted on learning language situationally. Concrete objects, pictures, realia, charts, and flashcards were widely used in the classroom to promote real life contexts. Also in the 1960's, French Scholars developed the Audio-visual method. This method considered that audiovisual technology is a great contribution to help to teach. Students were taught through a combination of textbooks, filmstrips, tape recordings, slides and classroom presentation.

Methods involved on the Humanistic Approach have made a great use of visuals too. For example, The Silent Way Method avoided the use of the mother tongue in the classroom. The teacher made use of several visual aids: colored wooden rods, set of wall charts containing useful vocabulary, color coded phonetic charts, tapes or discs, film drawings and pictures, worksheets and transparencies.

Another method, the Total Physical Response, involved a lot of physical manipulation and action in order to imitate the way 1L is acquired. Teacher's words followed by actions served as a visual aid, as well as large pictures.

The Natural Approach developed by Krashen was based on his Monitor theory. Students were not expected to produce output immediately; they should go through a period of understanding first. Magazine pictures and other visual and kinesthetic aids were used as an elicitation device in the listening comprehension and early production stages. Videotapes were considered the most appropriate visual aid when the teachers were not native, as the Comprehension-based Approach claimed. This method was also based on the idea the 2L learning was similar to the 1L acquisition, so students received a lot of audiovisual input in the first stages of the learning. Against the trends that gave prominence to the stage of receiving input, in the recent years, language teaching has been enhanced by a number of different communicative approaches. They have had as their main objective to enable students' communication in the real world. These approaches have pointed the importance of bringing the real world into the classroom to make the learning more meaningful for students.

Brinton, et al (p.459, 2001) similarly provided as an example, Communicative Language Teaching puts much of the emphasis on the need for real life objects or texts to give authenticity to the communicative situation: Nonnative speakers (both inside the classroom and outside the classroom) make use of the here and now objects in the immediate environments'. There are other methods that worth being mention regarding the use they make of visual aids. Task-based Learning arises from cognitive theories about processes such as memory, attention, and recall. In the initial stage of the lessons, input can be presented through visual aids or realia that will be followed by the performance of the tasks. Also suggested that the visual materials use Content-based goes from gestures and pantomimes to pictures, photographs, and slides. These aids help to make the activities more motivating and meaningful for the students.

2.3 Paradigm Shift

With the growth of blended learning and the many ways this model is being adapted, pedagogy is evolving as well. Teachers' roles are changing as they evolve from lecturer to instructional guide. Independent student work and mentoring are becoming more common instructional strategies as teachers assess student progress and then use a variety of tools and resources, including digital content, to differentiate instruction in order to address students' needs. However, a search of available research literature confirmed this trend. A combination of flexibility, independence, and experience with online tools has been associated with improved critical thinking, research, and computer skills.As virtual school opportunities continue to expand to a wider range of students, it will be important that English courses are straightforward and consistent in their design, provide clear instructions and expectations, and make use of appropriate media (Szendeffy (2008)).

2.3.1 Multimedia Technology in Education

Dwyer, Ringstaff, &Sandholtz, (1991) agreed that "multimedia technology has become an inseparable part of today's world and this is also true with the field of foreign language instruction. The use of multimedia in teaching and learning of foreign language like English has always dominated the pedagogical debates and discussions and made the luminaries and pedagogues in the field to investigate the possible advantages and implications of this new technology for effective and dynamic teaching and learning of foreign language like English. Such debates and studies have often ended on recommending the use of visual media in foreign language instructions due to several advantages this use can offer both for the EFL teachers and learners. It is believed that such use guarantees much recommended

learner-centered learning and makes the whole process of foreign language teaching and learning interactive, interesting, and dynamic. However, for the past several decades, a great deal of debate has raged on about the pedagogical worth of computers in the classroom. On the one hand, computer and software companies often provide mostly anecdotal evidence as to the usefulness of technology in language instruction, stating heightened student motivation and more engaging learning. However, a number of researchers have suggested that while technology has grown by leaps and bounds, teachers' use of it often remains very antiquated, limited to simple writing assignments and Internet searches".

Garrison, (2009) suggested that "this has been due, in part, to educators' limited vision of the role multimedia technology in language instruction. In fact, Garrison,&Kanuka, (p. 75, 2004) pointed this out that "the use of the computer does not constitute a method" and it is only a "medium in which a variety of methods, approaches, and pedagogical philosophies may be implemented".

According to Saye,(1998), this is coming to the false conclusion that computer applications will do things better and faster for us without our intervention is at the center of this issue. We're all familiar with the extravagant promises of technology. It will make our students smarter and it will do it faster and cheaper than ever before. Moreover, the promise suggested, this miracle will occur almost by osmosis. We need only place a computer in a room, stand back, and watch the magic take place. If only life were that simple and learning that easy! As educators, we were unfamiliar with the new technology and uncertain about its possibilities. So we stepped back and let software developers, hardware vendors, and other technicians define not only what we could buy but also how those products would be used. In many ways, the technology drove the educational process. And guess what? It didn't work very well. In the field of language education, a great deal of emphasis now focuses on electronic learning and it is touted as the great liberator

by freeing students and teachers to accomplish learning in new and exciting ways. Personally, there are some benefits of electronic teaching and learning from both a pedagogical and technical standpoint (i.e., anywhere, anytime learning, collaboration with worldwide partners, access to native-speaking content, etc.)".

2.3.1.1 Incorporating Multimedia Technology in EFL Classroom

Teachers who reportedly value the integration of multimedia technology changed their teaching in order to better incorporate technology approaches (Barron & Goldman, 1994). Software and hardware availability and teacher willingness to use the software can have positive effects on the teachers' attitudes towards the adoption of the new interactive multimedia in the classroom (Spellings, 2006).

Interactive venues and discussion boards can help teachers to learn with technology instead of solely using it to teach (Coniam, 2002; Ducate& Arnold, 2006). Additionally, teachers who report a strong commitment to computer teaching, as well as their own professional development, have been found to integrate technology tools more readily (Hadley &Sheingold, 1993; Becker et al, 1999).

According to Norum, Grabinger and Duffield (1999, p. 187) studied the thoughts, perceptions, beliefs, experiences, knowledge and growth of teachers studying and attempting to integrate the use of computers in their classrooms. The important theme they found running throughout this research was teachers' strong assertion that they needed to change personally and take on new roles if technology was to be effectively integrated into their classrooms. Most of the teachers involved in this study saw themselves as the place where change efforts needed to begin. Experiences with computer technology planning highlight the well-documented observation that teacher attitudes toward computer technology and computer integration seriously impact the success of professional development programs. They thus need to be seriously considered.

Albion, (1999) argued that *positive attitudes toward computer integration enhance learning to use technologies in teaching and learning; negative attitudes constrain it. This does not necessarily mean that only teachers with positive attitudes should be included in computer technology training activities. It does mean that negative attitudes among participants need to be valued and addressed and that positive attitudes should be encouraged and developed. Teachers often recognize that their students do indeed need additional input and output activities to help them continue to improve their language skills, particularly pronunciation skills.*

Garrison, (2009) stated that "as the teacher plays the key role in classroom change and teachers tend to accept only changes that they perceive facilitate their work, exploring teachers‟ attitudes toward computer technology integration is necessary. Early in past years, it has been observed that the infusion of computer technology into school curriculum has the potential to drastically change educational practices. However, to successfully change traditional instructional practices, teachers must have positive attitudes toward the educational issues involved. If teachers are resistant to the change, the proposed curricular and procedural changes will have a slim chance of success. This is true of any educational innovation, but it is particularly true of technology use in education because the change involves both the acquisitions of new computer technology skills and pedagogies".

EFL teachers' attitudes toward the pedagogical use of computers were measured by Allan and Will (2001). These attitudes also play an important role in the effective investment in computer technology to support instruction and successful integration of computers in teaching.

Kanuka, Brooks &Saranchuck (2009) pointed out that "teachers' attitudes are a major enabling or disabling factor in the adoption of technology".

Bullock, (2004). Similarly, found that "teachers who have positive attitudes toward technology feel more comfortable with using it and usually incorporate it into their teaching".

Woodrow, (1992) asserted that "any successful transformation in educational practice requires the development of positive user attitude toward the new technology. The development of teachers' positive attitudes toward information communication technology ICT is a key factor not only for enhancing computer integration but also for avoiding teachers' resistance to computer use".

According to Watson, (1998). warned against the severance of the innovation from the classroom teacher and the idea that the teacher is an empty vessel into which this externally defined innovation must be poured (p. 191).

2.3.1.2 Pictures, Graphics, and Visual Organizers in Power-Point Presentations.

The projectors and multimedia classrooms have been integrated into classrooms nowadays, teachers can use different resources to support their explanations, correct exercises or play games. In order to make these presentations effective, teachers must be careful with the visual material and strategies they include in them. Several things must be taken into account, such as the way in which pictures, graphics, and visual organizers affect the learners, what is the best way to use them and what are their benefits.

Carney and Levin (2002) reported that pictures improved the reading-to-learn process, but they also pointed out that these pictures must be well-selected or well-constructed ones. The beneficial effects of the visuals and the reasons why pictures facilitate comprehension and learning are explained by Levin and Mayer. They proposed some principles called the seven "C". According to their words pictures make the text more: concentrated, compact, concise, coherent, comprehensible,

correspondent and codable. Other authors have also numbered some reasons for the benefits of the pictures, such as Peeck (1993). This author highlighted that pictures help increasing motivation, focusing attention, depth of processing clarification of text content, dual-coding theory, decreasing interference decay, process support for the type of information and serve as mental models.

As summarized Canning (2000) reading comprehension is significantly facilitated by visual support in the form of descriptive pictures and visual organizers thanks to the richness of the context provided. Usage of Multimedia visual aids in the English language classroom graphic images also help students to create relations amongst the words, 'bringing out more detailed, knowledgeable, responsive, awareness to the object, situation or text being communicated'(p.56). Canning also pointed that the picture can help the student to work with more abstract thoughts and organizing skills through the use of the logical structure.

Clark & Lyons, (2004) stated that "in order to help the working memory process the information, the graphical representations are effective because their processing requires fewer cognitive transformations. It is important to point that in order to improve memory for lesson content, visuals should be aligned with goals of the instruction'. Also, Clark and Lyons (2004) asserted that 'this improvement is the result of dual-encoding. These authors agree with Carney and Levin's idea of the principle of conciseness that visuals provide in comparison with the texts: 'If the visuals used depict relationships they can help building cause-and-effect mental models which support deeper learning".

2.3.2 Blended Teaching and Learning

2.3.2.1 Multimedia and Teaching Methods

Roshelle, Pea, Hoadley, Gordin, and Means (2000, (p. 82) indicated that "computers can be used in collaboration with all subject areas, but teachers must take into account the different styles of teaching and the students' different styles of learning in order to use them effectively. Technological tools, especially personal computers, are often cited by educators and policymakers as magic-workers in literacy programs, providing great access to all students".

Blamires (1999) claimed that "technological tools could help overcome skill-level barriers to learning. He went on to say computers could make us smarter, if not wiser".

According to Becker, &Jokivirta, (2007) *dedicated* pages to the motivational qualities of learning with technological tools. Students are very familiar with how to work computers, which means students are more engaged when using these technology tools. Motivation and engagement are frequently identified as the major benefits of using technological tools to support literacy learning.

Andrews, (2003). Suggested that "a common view is that in using computers, students are so engaged and motivated by a viewing text they hardly realize they are accessing, reading, decoding, and analyzing information. Why is it so engaging? As previously mentioned, technological tools are everywhere in society and are part of our everyday lives. Hence, the use of technological tools in teaching and learning experiences directly relates to the real lives of students".

Veen, (1993) declared that "students with learning difficulties, in particular, will quickly become disengaged if classroom teaching does not connect with their lives and if it does not engage them as learners with topics and issues that have interest and meaning for them".

Reading information on a website advertised in a favorite skating magazine, downloading the latest hits from a radio website, and reading the latest gossip about film stars are just some examples that connect with students' real lives yet require active practice and development of literacy skills. Others have suggested using computers for literacy building and literacy practice also allows students to take more risks with their language because of less fear of embarrassing mistakes The Read180 program that has been implemented in Department of Defense Education Activity schools is a good example. The Read180 software creates games for students while improving their reading skills. This point is similar to that made in referring to the computer as a non-threatening center of attention. Perhaps the highest indication of motivation and engagement is that in studies comparing literacy classes that used technological tools to those that did not, researchers found that truancy levels were much lower in the technological tools-focused classes (Hofmann, et al (2006)).

This was especially significant when discussing students identified as "at risk" because one of the major focuses of the Systems Analysis Evaluation and Research (SAER) programs is reducing truancy rates. At the same time, since technological tools, especially personal computers, and Internet access, are becoming more and more a part of students' everyday lives, using a computer is often no longer motivational in itself (Hofmann, J. (2006))

Becker, (2000) claimed that “since computers are everyday and ordinary, students would approach them as simply another tool, like a pen or pencil, and not an extrinsic motivational reward. This point can be true of all the new and innovative technology tools available today. Technology advances daily, and tools that are "new and improved" will always be a factor”

2.3.2.2 The Blended Teaching

Chen, Lambert, and Guidry (2010) stated that “widespread use of the computer and other Internet technologies in post-secondary education has been exploited in teaching last 15 years. An increasing focus of this trend is blended teaching. So popular has the uptake of blended teaching. It has been called the “new normal” in higher education teaching”.

Norberg, Dziuban, &Moskal, (2011) pointed that “a blended learning is a context that integrates physical and virtual components are seen as critical strategies for higher education institutions”.

Cobcroft, Towers, Smith, &Bruns, (2006) agreed that “this trend has intensified since the publication of a meta-analysis of 50 studies that found that while online students performed a little better than face-to-face students, students in courses that blended online and face-to-face components did much better than a straight online course. Moreover, the case for the effectiveness of blended learning derives from the observation that such courses offer students a greater range of affordances that enhance the learning experience beyond that of either online or face-to-face modes alone”. Support is offered by Ramsden, (2003) who argued that “blended teaching environments increase student choice and this can lead to improved learning”.

According to Oliver and Trigwell (2005) also suggest that “a blended teaching environment may offer experiences that are not available in non-blended teaching environments and that the nature of these different experiences improves teaching. While there is evidence to suggest the potential of blended teaching, there is also considerable evidence that most blended teaching courses fail to fulfill this potential”. Driscoll, (2002) & Hofmann, (2006) argued that “this failure can be partially explained by the well-documented resistance of teachers to computer-based learning, a common theme in the literature for at least 15 years. Lack of

adequate professional development influence the blended teaching. The profusion of online and blended teaching courses have become pervasive in the educational sector, driven by senior administrators who are more positive about the efficiency of blended teaching than teachers".

Allen, Seaman, Lederman, &Jaschik, (2012) found that "faculty isoften given little option about incorporating blended teaching into their classes, so it's not surprising that the results are frequently acceptable.

While there is substantially blended learning literature on the student experience, course design, and even the professional development of teachers, a neglected area is teaching practice: how and why teachers balance the blend of online and classroom components".

Torrisi-Steel & Drew, (2013) in a literature review of over 800 articles, Torris-Steele and Drew (2013) found that "only one article, by Woods Bates, &Sangra, (2011), on academic practice in a blended teaching environment. Knowing more about what teachers do in their teaching practice when they are required to introduce trend may go some way to explaining the failure of blended teaching to reach its predicted potential. Only by understanding current practice can we prepare to make changes to that practice. However, this study adds to the sparse literature on the practices and attitudes of teaching in blended courses in a qualitative study in which teachers were interviewed about their teaching practice and their attitudes to blended teaching. In addition, the effectiveness of their computer and classroom was assessed against a pedagogical framework of student engagement strategies".

2.3.2.3 The Blended Learning

Blended learning has been described as a mode of teaching that eliminates time, place, and situational barriers, whilst enabling high-quality interactions between teachers and students (Kanuka, Brooks, &Saranchuck, 2009). It echoes the practice of distance education that emphasized the flexibility of time, place, and pace of student learning. Research suggests that the student experience varies considerably and results in variable learning experiences indicating a need to clarify how a blended approach can support learning (Jeffrey, Kinshuk, Atkins, Laurs, & Mann, 2006; Zepke, Leach, &Prebble, 2006).

According to Mayes and Morrison (2008), the role of faculty in successful blended learning has been noted in a number of studies. They found that, in addition, to a well-managed program, it was important that teachers are both interested and competent in teaching in a blended context.

Bates and Sangra (2011) argued that "there is convincing evidence that online students do just as well if not better than students in face-to-face courses, but more important, the results depend on the conditions in which students are studying. All modes of delivery will suffer from badly designed teaching or inadequate resources" (p. 147).

Technology has increased the breadth and depth of access to education. This is significant because it has been a hallmark of western education that the collocation in time and space of teachers, students and resources is the spirit of education. Changing from a classroom-only context to include a computer context requires adjustment for both teachers and students. The speedy adoption of educational computer technologies is evidence that new forms of teaching and learning are possible. However, shifts of this magnitude need major changes in approach from

faculty and administrators in education, especially in higher education, where the lectures still dominate teaching practice (Swenson & Redmond, 2009).

To summarize all above mentioned, the blended learning models are also flexible and adaptable so teachers can create instructional activities and assignments that give students the opportunity to work collaboratively, tapping their interest and abilities in social learning. In addition, project-based and experiential learning can also be facilitated through blended models, giving students the opportunity to conduct research online, participate in group work, and then develop multimedia projects that showcase their learning processes and outcomes.

2.3.2.4 Multimedia in Language Instruction

The idea of incorporating computer technology in EFL has always been the focal point of discussion and debate for a very long period of time. This integration of computer technology into the domain of foreign language education began during the 1950sand since then, as the computer technology witnessed drastic changes, this use also has undergone tremendous modifications and became the part and parcel of the modern day education system. The result of all these has been evident on all those related to EFL instruction including teachers. The advent of computer technology in EFL instruction has to lead to significant changes in teachers' approaches, methodologies and strategies to teach a foreign language as English. With many practical benefits both for EFL teachers and learner. Today, the use of computer technology in EFL teaching and learning has achieved possible implications of this technology for achieving the aims and objectives of EFL teaching and learning and have recommended strongly this use for effective and dynamic teaching and learning of foreign Language like English. Such arguments encourage the use of computer technology in EFL teaching and

learning, advantages of the use of computer technology in EFL teachers and learners (Swenson & Redmond, 2009).

2.3.2.5 Using Visual Media in the Language Classroom

According to Brinton, (2001) some authors differentiate between Media with "M", and media with "m", when relating the term to the language classroom. The first one, Media, refers to all of the technological advances such as new software, hard-wares and the use of computers and projectors. And media for the non-mechanical aids, such as charts or even props for the daily life adapted for teaching purposes. Both kinds of media seem to have the same beneficial outcomes. Brinton also points out the different reasons why it is helpful to use media in the class. The main reason is that the media appeal to student's senses and help them process the information, in this way the teacher does not have to give extra explanations as the teaching point has already been reinforced. It is remarkable that media help teachers to motivate students because it brings the real life into the classroom and the language is represented in a complete communicative context. And instead of taking up additional class hours (a traditional worry of the teachers) they help to economize the teaching task. The students with different learning styles must be taken into account too, and using media help the teachers a way to address the needs of visual, auditory and kinesthetic learners. It is important to say that the use of media-based material must be perfectly integrated into the lesson in order to be effective and not treated as something extraneous to it.

Brinton (2000) "devoted summary for the rationale behind the use of the media in the language classroom: "Use media materials when variety is called for, when they expedite your teaching task and serve as a source input, and/or when they help you to individualize instruction and appeal to the variety of cognitive styles in your classroom. But above all, use media to involve students usage of Multimedia visual

aids in the English language classroom more integrally in the learning process and to facilitate language learning by making it a more authentic, meaningful process" (p. 130).

2.4 Multimedia & Teaching EFL Skills

The use of the computer in EFL classrooms has many advantages. It develops the EFL learners' language skills. It provides the EFL learners with a gateway to various activities for developing their language skills as follows. The use of computer technology can contribute a lot in developing EFL learners' reading comprehension skill and other sub-skills related to it as well. Using computers, with the use of internet provides a variety of current and authentic reading materials compared to potentially dated reading material sourced from textbooks.

Kasper, (2000). Chun and Plass (1996) stressed that "the verbal and visual systems in computer programs help students to better understand the text. Most of the CALL programs are filled with graphics and voices and when EFL learners visualize the situation, they can remember the subject better in the long term".

Nuttall, (1992) has also reported that "CALL programs for vocabulary development have positive results. Learning vocabulary, using computers, helps learners to learn vocabulary significantly faster than the traditional way of teaching vocabulary. The varieties of reading materials, available with the use of computer technology and internet can encourage EFL learners and open opportunities to read widely in a foreign language like English. This can be highly effective for developing vocabulary through wide reading and in mastering important structures in the target language. That is why it is argued that computers can promote extensive reading; build reading fluency and rate; develop intrinsic motivation for reading; and contribute to a coherent curriculum for student learning".

2.4.1 Common Understandings about Reading

> Teaching reading comprehension is one of the most demanding tasks for a language teacher. It is also a crucial part of the language learning process for the learner. Yet, it has been proved that hurrying young non-English-speaking learners into reading in English without ensuring adequate preparation is very much counterproductive.

However, the above-mentioned preparation means that learners should be taught how to effectively read in their native language while acquiring oral proficiency in English and subsequently taught to extend their skills to reading in English.

According to Bell, (2001), reading is the active process of understanding print and graphic texts. Reading is a thinking process. Effective readers know that when they read, what they read is supposed to make sense. They monitor their understanding, and when they lose the meaning of what they are reading, they often unconsciously select and use a reading strategy (such as rereading or asking questions) that will help them reconnect with the meaning of the text. Reading skills and strategies can be taught explicitly while students are learning subject-specific content through authentic reading tasks.

A very common perspective on reading comprehension claims that it is the mere interaction between a reader's prior knowledge of the world and a certain language on one part, and the information encoded in a text on the other part. The reader is considered as an active participant who can contribute to the construction of meaning (Nunan, 1999).

Kramsh, (1998) and Nunan, D. (1993) asserted that 'reading comprehension can be defined as the full interaction of a certain reader with a certain text. It is rather a skill that makes the separation between a

passive, unskilled reader of a text and an active reader who proves to have developed the understanding of the concept of interaction'.

Kramsch& Andersen (1999 suggested that 'an active reader is someone who may have a privy dialogue with himself while going through a text. A person also who has developed strategies to approach, read and interpret a text'.

However, in fact, much like learning to drive, reading comprehension becomes so automatic that most skilled readers forget that they had to develop their reading comprehension skill. When dealing with reading comprehension, most students usually interpret the text in the light of their previous knowledge and simultaneously modify their original schemata as they are exposed to new information that they learn.

2.4.1.1 The Importance of the Reading Comprehension Skill

Bell, (2001) argued that 'evidently, the reading comprehension skill increases the pleasure and the effectiveness of reading. Besides, a strong reading comprehension skill will help ESL/EFL learners in all other subjects as well as in their professional and personal lives.

According to Hill, (1997) reading comprehension also derives its importance from the fact that high stake tests that control advancement through elementary, middle and high school and which determine entrance to colleges are in large parts a measure of reading comprehension skills. Since building an adequate reading comprehension skill requires a long-term strategy in which all the linguistic components (phonetics, fluency, vocabulary…etc) are

involved, it is then evident that it will contribute to the success of the learner'.

2.4.1.2 Reading Theories

According to Krashen, (1995) several theories come into play in Extensive Reading:

Krashen's Input Hypothesis (1982, p10) made a distinction between acquisition and learning. For Krashen, the dominant mode of language learning is in the *acquisition*, the largely subconscious "picking up of the language" which characterizes language in informal settings and which is similar, if not identical, to the way children develop ability in their first language. Language acquisition represents unconscious learning which takes place when attention is focused on meaning rather than form. In order to acquire language, Krashen suggested the learner must be exposed to large amounts of second language input (SLI) that was meaningful, interesting, relevant, not grammatically sequenced, and in a low anxiety setting. It is felt that Extensive Reading programs provide such an environment.

> *The L1=L2 Hypothesis suggests that second language learning, like the first, follows a highly predictable pattern. If the conditions of first language acquisition are approximated by extensive second language reading, the second language learner (SLL) can achieve native-like competence in a classroom. An extension of this suggests that reading for pleasure from appropriate second language texts provides subconscious and progressively more difficult second language input much like that essential for first language acquisition.*

Brown, (1994) &Rumelhart (1980) ‘proposed an interactive model of the reading process in which reading is a complex task of simultaneously combining "bottom-up" processes (in which the reader analyzes text in small pieces and builds meaning from these) and "top-down" processes (in which the reader makes "guesses" about the content of a passage). It is thought that Extensive Reading programs provide the quantities of reading practice necessary for the automaticity of the "bottom-up" (word recognition) process’.

Kramsh, (1998) & Richards and Rodgers et al (2001) Long after experimenting learners’ attitudes towards texts and the ways they deal with them, it has been concluded that

there exist many simultaneous and complementary ways of processing a text by the learner:

a. Top-down reading

According to this approach, readers make full use of their prior overall knowledge in order to make predictions about the text or interpret it.

b. Bottom-up reading

It is when the readers rely on their knowledge of the linguistic elements of language-letters, words, and sentence structure- to first recognize them and then use them for the construction of meaning.

However, the main ideas of this part are that EFL teachers should carefully instruct learners to start their reading by using a *top-down* approach to any reading text. That is to say, learners should be trained to use their prior knowledge of the language as well as their experience of the world to make predictions and

interpretations. Then, they are to make the shift to a *bottom-up* approach in order for them to check their assumptions through reading for details. Those two approaches really support and complement each other in a way that if they are applied in the right way, it will be so abnormal that a learner doesn't comprehend a reading text appropriately.

2.4.2 Reading Sub-skills

Kramsh, (1998) stated that

a. Skimming: Also called reading for gist meaning that learners rapidly go through a text without showing any interest to details just in order to grasp the main idea of a text.

b. Scanning: It is reading for specific information. Learners read with questions in the head about detailed information in the text.

2.4.3 Types of Reading

2.4.3.1 Intensive Reading

Richards &Rodgers (2001) and Bill, (2001) agreed that

a- *Intensive reading: this type of approach implies a careful reading for complete, detailed comprehension. Learners go deep inside the text and consider minor ideas, specific details, lexical items, sentence structures.*

Bell, (2001) explained that 'intensive reading "calls attention to grammatical forms, discourse markers, and other surface structure details for the purpose of understanding literal meaning, implications, rhetorical relationships, and the like." He draws an analogy to intensive reading as a "Zoom Lens" strategy".

Brown, (1994) &Long and Richards (1987) & said it is a "detailed in-class" analysis, led by the teacher, of vocabulary and grammar points, in a short passage."

However, Intensive Reading, sometimes called "Narrow Reading", may involve students reading selections by the same author or several texts about the same topic. When this occurs, content and grammatical structures repeat themselves and students get many opportunities to understand the meanings of the text. The success of "Narrow Reading" on improving reading comprehension is based on the premise that the more familiar the reader is with the text, either due to the subject matter or having read other works by the same author, the more comprehension is promoted".

2.4.3.2 Intensive Reading Characteristics

Brown, (1994) suggested the followings

- *usually classroom based*
- *the reader is intensely involved in looking inside the text*
- *students focus on linguistic or semantic details of a reading*
- *students focus on surface structure details such as grammar and discourse markers*
- *students identify key vocabulary*
- *students may draw pictures to aid them (such as in problem-solving)*
- *texts are read carefully and thoroughly, again and again*
- *the aim is to build more language knowledge rather than simply practice the skill of reading*
- *seen more commonly than extensive reading in classrooms*

2.4.3.3 Skills developed

- *rapid reading practice*
- *interpreting text by using:*

  -word attack skills

  -text attack skills

  -non-text information

2.4.3.4 When is it used?

- *when the objective of reading is to achieve a full understanding of:*

  - logical argument

  - the rhetorical pattern of text

  - emotional, symbolic or social attitudes and purposes of the author

  - linguistic means to an end

- *for study of content material that is difficult (* Brown, 1994).

2.4.3.5 Role of the Teacher

- The teacher chooses suitable text.
- The teacher chooses tasks and activities to develop skills.
- The teacher gives direction before, during and after reading.
- The teacher prepares students to work on their own. Often the most difficult part is for the teacher to "get out of the way".
- The teacher encourages students through prompts, without giving answers (Brown, 1994).

2.4.3.6 Advantages

- It provides a base to study structure, vocabulary, and idioms.
- It provides a base for students to develop a greater control of language
- It provides a check on the degree of comprehension for individual students
- The students may:

- develop a "reading habit"
- gain more confidence in reading
-improve their attitude towards reading and become more motivated to read
- feel more autonomous over their own learning and more likely to take more initiative.
- become more " independent readers", being able to read for different purposes and being able to change reading strategies for different kinds of texts
- become more aware of what's available to them to read and how to access materials
- expand sight vocabulary
- acquire "incidental" grammatical competence - that is, it may be acquired even though it was not directly taught
-build background knowledge
- increase reading comprehension
- improve overall language competence
- be more prepared for further academic courses because they have read large quantities (Brown, 1994)

2.4.3.7 Disadvantages

- There is the little actual practice of reading because of the small amount of text.
- In a class with multi-reading abilities, students may not be able to read at their own level because everyone in the class is reading the same material.
- The text may or may not interest the reader because it was chosen by the teacher.
- There is little chance to learn language patterns due to the small amount of text.
- Because exercises and assessment usually follow the intensive reading, students may come to associate reading with testing and not pleasure (Brown, 1994).

2.4.3.8 Role of Student

- The student assumes total responsibility for developing reading ability.
- The student reads without the use of a dictionary.
- The student usually chooses their own material and moves along at their own pace but must push themselves in order to show greater progress (Brown, 1994).

2.4.3.9 Challenges

- An Extensive Reading program may be costly and time-consuming to set up if materials are not already available. It may be difficult to get support from Administration.

- Students need to have easy access to texts within their language proficiency level. An Extensive Reading program is easiest to establish when the students have a high level of second language proficiency. For intermediate levels, students require a specialized library within their language proficiency range. They need texts they can read without great use of a dictionary.
- It may be difficult to keep students challenged to read more difficult texts as the program continues. Some established programs use a "weighing scale" for students to record materials read, giving more "marks" for materials read at a higher level. Although this has proven to be a motivating or competitive factor in some cases, in others it becomes counter-productive if students try to read texts that are more difficult than they can manage and consequently become discouraged.
- Reading each student's journals and reports can be very time-consuming for teachers.
- Students who come from a culture in which literacy is not valued may be unwilling to participate in pleasure reading or may not get support at home.
- Some teachers prefer a skills-based program and do not feel comfortable with Extensive Reading.
- Some teachers are unaware of how to use Graded Readers and so, provide a limited range of activities for students, limiting their responses.
- Some teachers feel that time spent on Extensive Reading will take away from time that could be spent on learning language skills. Others will argue that Extensive Reading provides a "richer context" for practice.
- Some people feel that if graded readers are used, they can give a false impression of the level of reading that has been achieved. They feel that

some students may try "ungraded" materials too soon and may revert to using a dictionary to translate.

- Some people feel that students may place too much emphasis on the number of pages read instead of on the understanding achieved.
- Students that have only been exposed to Intensive Reading programs may not believe that Extensive Reading is a "proper" way to learn.
- Aeberscold (1997) reported that feedback from students in an Extensive Reading program indicated that they liked the "choice" but not the "load" Brown (1994).

2.4.4 Extensive reading

Helgesen, (1997) stated that

it is a kind of reading that most of the time occurs outside the classroom framework. It means reading large quantities of simple materials for the sake of improving reading speed and knowledge of vocabulary.

However, as mentioned earlier, most of the above-listed approaches to dealing with a reading text can be combined together as they certainly complement each other. The outcome of the combination will finally help ESL/EFL learners achieve the aimed interaction with texts and thus become active readers. In fact, it has been proved that most effective readers tend to continually adopt a top-down approach to predict the probable theme and then shift to the bottom-up approach to check their assumption by reading details.

2.4.4.1 Intensive and Extensive Reading Together

Bell, et al (2001), Helgesen, (1997), Hill, David (1997) & Pugh, (1978) stated that "it is common for both approaches to reading to be used in the same class. For example, where extensive reading is encouraged, the teacher may have all the students read the same text so they can discuss the topic together or learn a specific skill such as-as writing an outline. In a class where intensive reading is mostly used, students may be asked to read texts of their own choosing to report back on, in either an oral or written format. In both approaches, it is not the nature of the skills that are of most interest but rather, the results".

2.4.4.2 Scanning

- Scanning is a quick reading, focusing on locating specific information.
- Scanning involves quick eye movements, not necessarily linear in fashion, in which the eyes wander until the reader finds the piece of information needed.
- Scanning is used when a specific piece of information is required, such as a name, date, symbol, formula, or phrase, is required. The reader knows what the item looks like and so, knows when he has located what he was searching for. It is assumed then, that very little information is processed into long-term memory or even for immediate understanding because the objective is simply matching (Bell 2001).

2.4.4.3 When is it used?

- Scanning is used often with technical, scientific or professional materials to locate specific information.
- Scanning is a valuable skill for second language learners SLL or foreign language learners FLL to develop because often they do not require a detailed read of a text. There are many everyday uses for scanning, relevant to a purpose, such as reading a schedule (Brown 1994).

2.4.4.4 Role of Teacher

- The teacher selects passages that do include specific information.
- The teacher may use authentic materials that are commonly scanned in real life, such as the telephone directory, menus, bus schedules.
- The teacher may ask students before they scan a text to note how the information is organized in the text.
- The teacher needs to remind students that as they read carefully to find the required information, they should pay particular attention to titles and keywords (Brown 1994).

2.4.4.5 Role of the Student

- The student forms questions before reading. What specific information are they looking for?
- The student looks for contextual clues. The student tries to anticipate what the answer might look like and what sorts of clues would be useful.

- The student is aware of the graphic form that the answer may take, such as a numeral, a written number, a capitalized word or a short phrase that includes keywords (Brown 1994).

2.4.5 Skimming

- Skimming is a quick reading to get:

- to know the general meaning of a passage to know how the passage is organized that is, the structure of the text.
- to get an idea of the intention of the writer.

- Skimming is a more complex task than scanning because it requires the reader to organize and remember some of the information given by the author, not just to locate it.
- Skimming is a tool in which the author's sequence can be observed, unlike scanning in which some predetermined information is sought after (Bell 2001).

2.4.5.1 When it is Used?

- Skimming is used when reading some general questions in mind.
- Skimming is used in making decisions on how to approach a text such as when determining if a careful reading is deserving.
- Skimming is used to build student confidence and an understanding that it is possible to gain meaning without reading every word in a text.
- Skimming is used as part of the SQR method of reading, often for speed reading. This method involves the student
  in **s**urveying, **q**uestioning, **r**eading, **r**eviewing and **reciting.**

- Skimming is used for the *initial survey* and for *review.*
- Skimming is a skill that a student may want to develop if they are planning to continue with academic studies. It is often used in reviewing for a test (Brown 1994).

2.4.5.2 Role of the Teacher

- Before the students start reading, the teacher should guide students to ask themselves the following questions:

- What kind of audience was the text written for? Was it, for example, the general public, technical readers, or academic students?
- What type of text is it? Is it, for example, a formal letter, an advertisement, or a set of instructions?
- What was the author's purpose? Was it, for example, to persuade, to inform or to instruct?

- The teacher should make the following clear to students before assigning a skimming exercise:

1. The purpose of the exercise.
2. How deeply is the text to be read? (Brown 1994).

2.4.5.3 Role of the Student

- Students read through the text in the following manner:

1. Read the title if any.
2. Read the introduction or the first paragraph.
3. Read the first sentence of each of the following paragraphs.

4. Read any headings or sub-headings.
5. Look at any pictures or phrases that are in boldface or italics
6. Read the summary or last paragraph (Brown 1994).

2.4.5.4 Skimming and Scanning Together

Skimming and scanning are sometimes referred to as t*ypes of reading* and at other times, as *skills*.

Skimming involves a thorough overview of a text and implies a reading competence. Scanning is more a limited activity, only retrieving information relevant to a purpose.

Brown (1994) suggested that

perhaps the two most valuable reading strategies for learners as well as native speakers are skimming and scanning. (p.283)

Pugh (1978) suggested that since scanning is a less complex style of reading it can be introduced first. Skimming requires greater fluency and more practice is required, so it should be introduced later. Often skimming and scanning is used together when reading a text. For example, the reader may skim through first to see if it is worth reading, then read it more carefully and scan for a specific piece of information to note. Students need to learn that they need to adapt their reading and techniques to the purpose of the reading. By practicing skimming and scanning, the individual learns to read and select specific information without focussing on information that is not important for meaning.

2.4.5.5 Advantages

An Extensive Reading program may be combined with writing or combined with speaking practice in a meaningful way (such as when students discuss with each other the books they have been reading.

Bell, (2001) suggested that "it is by pursuing the activity of extensive reading that the volume of practice necessary to achieve rapid and efficient reading can be achieved".

Krashen (1993a) suggested that the benefits of free voluntary reading included "enhanced language acquisition and literacy development, more ideas and information, greater success in life, loss of verbal memory, and more fun".

Table 2.0 Skimming Skill

Skimming	
What is it?	When you SKIM, you read quickly to get the main idea of a paragraph, page, chapter, or article, and a few (but not all) of the details.
Why do you skim?	Skimming allows you to read quickly to get a general sense of a text so that you can decide whether it has useful information for you. You may also skim to get a key idea. After skimming a piece, you might decide that you want or need to read it in greater depth.
How do you skim?	1. Read the first few paragraphs, two or three middle paragraphs, and the final two or three paragraphs of a piece, trying to get a basic understanding of the information.

	2. Some people prefer to skim by reading the first and last sentence of each paragraph, that is, the topic sentences and concluding sentences. 3. If there are pictures, diagrams, or charts, a quick glance at them and their captions may help you to understand the main idea or point of view in the text. 4. Remember: You do not have to read every word when you skim. 5. Generally, move your eyes horizontally (and quickly) when you skim.

Table 2.1 Scanning Skill

Scanning	
What is it?	When you SCAN, you move your eyes quickly down a page or list to find one specific detail.
Why do you scan?	Scanning allows you to locate quickly a single fact, date, name, or word in a text without trying to read or understand the rest of the piece. You may need that fact or word later to respond to a question or to add a specific detail to something you are writing.
How do you scan?	1. Knowing your text well is important. Make a prediction about where in a chapter you might find the word, name, fact, term, or date. 2. Note how the information is arranged on a page. Will headings, diagrams, or boxed or highlighted

	items guide you? Is information arranged alphabetically or numerically as it might be in a telephone book or glossary? 3. Move your eyes vertically or diagonally down the page, letting them dart quickly from side to side and keeping in mind the exact type of information that you want. Look for other closely associated words that might steer you towards the detail for which you are looking. 4. Aim for 100% accuracy.

Table 2.2 Clues for Using Context to Find Meaning

Clue	Description	Signals
Definition	The unfamiliar word is specifically defined in the sentence, or in the preceding or following sentences	• "is" or "which means" • commas that set off a qualifying phrase
Example	The unfamiliar word is illustrated by one or more examples	• for example," • "including," or "such as" • pictures or diagrams
Description	Characteristics or features of the unfamiliar word are described.	• descriptive words • sensory words • adjectives and adverbs
Illustration	The unfamiliar word is shown in a diagram, picture or map.	• "see figure 2.1" • graphic features on the Page

Clarification	The meaning of the unfamiliar word is restated in slightly different language, summarized, or paraphrased.	• "in other words," "sim - ply," "clearly"
Parenthetical Note	The meaning of the unfamiliar word is provided in parentheses directly following the word.	(……)
Comparison	The meaning of the unfamiliar word is provided by contrasting or comparing it to another word, phrase or concept.	• "such as," "like," "compared to," "unlike" or "similar to" • synonyms, antonyms • charts
Elaboration	Additional information about the unfamiliar word is provided in the following sentences and paragraphs. This may be a description of a related event, process or product, or a question prompt	• "in addition," "another," or "consequently
Typography and Design	Design features draw attention to important words and concepts, and to their definitions	• **bold**, *italics*, and other Embellishments

Table 2.3 Engaging in Reading: Using Context to Find Meaning

What Teachers Do	What Students Do
Before Select a reading passage on a current topic or issue. Identify one or more important concept words in the text. • Write the concept word on the chalkboard and ask students to suggest possible meanings for the word. • Direct students to the concept word in the text. Ask students to read the paragraph(s) and confirm or reject their suggested meanings. • Discuss how they were able to determine the meaning of the concept word in context. Note that writers use different ways of providing meanings for concepts and words. Record these on the chalkboard. • Show several examples from a course text or resource. (For subject specific samples, • Model how to use context to determine the meaning of the words/concepts.	• Recall what they already know about the topic or concept. Make connections to known words and phrases. • Locate the concept word in the passage, and read the text. • Make connections between the new learning and what they already know about the concept. • Note different ways a reader can use context to help figure out unfamiliar ideas, concepts, and words.
During • Provide groups of students with different reading passages on the same topic/ concept.	• Read the passage, identify the important concept, and use context to understand the passage.

• Ask groups to read the passage, identify the important concept, determine the meaning of the concept, and (optionally) complete a concept map. For more on concept maps, • Ask groups to share and compare their findings. Discuss similarities and differences in order to establish a common understanding of the concept. • Concept maps can be posted, or a class concept map can be created based on the compiled findings.	• Contribute to the concept map, if that strategy is used. • Define the important concept.
After • Ask students to describe how they used context to understand what they read. • Assign further reading so that students can practice using context when reading	Describe how they used context to help understand the text (e.g.: "I read ahead to look for a definition or more information." "I looked for diagrams and sidebars." O*r* "I looked for signal words that pointed me to the relevant information.

2.4.6 Intensive Clues for Finding Answers in the Text on the Lines

Some questions can be answered by "reading between the lines"; the answer is *right there* in the text. The question asks for literal information from the selection such as details, facts, and information stated by the author. Some "question starters" that ask for literal knowledge are *given, list, find, describe, tell, retell* and *what*. To answer a question "on the line":

• Find the words used to create the question.

• Look at the other words in that sentence to find the answer (Day & Bamford. 2002).

2.4.6.1Among the Lines

The answers to some questions are to be found by "reading between the lines." This type of question has an answer in the text, but this answer requires information from more than one sentence or paragraph. Some "question starters" that ask for literal knowledge are a *list, compare, how,* and *summarize*. To answer a question "among the lines":

• Find the words used to create the question.

• Reread the sentences or paragraphs that contain the question words.

• Look at the other words in the sentences or paragraphs to find the answer (Dandonoli,1989).

2.4.6.2 Between the Lines

Some questions ask you to "read between the lines". This type of question asks the reader to make inferences based on the ideas and information in the text. The answer might be found interpretively in the reader's own background knowledge, but would not make sense unless the reader had read the text. Some "question starters," that ask for inferences are *why, how might, what do you think, explain, predict,* and *what might*. To answer a question "between the lines":

• Look for key words and clues in the question.

• Re-read that part of the text in which the author gives the clues needed to construct the answer.

• Ask yourself:

- Is this what the author meant?

- Does this make sense? (Day & Bamford, 2002)

2.4.6.3 Beyond the Lines

The answers to some questions are not in the text at all: they are "beyond the lines." This means searching for the answer in the reader's own background knowledge. Some "question starters" that ask for interpretations are *what can you learn from, how might you, what if,* and *is it fair that*. To answer a question "beyond the lines":

• Read the question and identify the keywords.

• Identify your beliefs, experiences, and knowledge that relate to the question.

• Ask yourself:

- Would the author agree with this conclusion? (Day & Bamford, 2002).

2.4.7 How to Teach Reading Comprehension?

2.4.7.1 Stages of Reading Comprehension Lesson

According to Brown, (1994), a reading comprehension lesson should normally go through three different stages, which should necessarily be inter-related. The first stage has to pave the way for the second that in turn prepares for the last. Learners should not feel a gap between the stages as the transition from one stage to another has to be smooth and effective. A short description of these stages may go as follows:

a- Pre-reading stage

Hence the name, this stage occurs before learners get into contact with the reading material they are going to deal with. This stage includes introducing the general topic through the use of visual aids; short listening passages, dialogues, short verbal exchanges…That's why it is called the *brainstorming* phase. It also includes eliciting and presenting new lexical items relevant to the reading comprehension text learners

are going to be exposed to. One of its primary objectives is to help the learners establish their background knowledge. All this can be achieved through a class discussion that may take various forms i.e. teacher-pupil interaction or pupil-pupil interaction.

b- While-reading stage

During this stage, various tasks and activities are assigned to learners along with the silent reading of the different parts of the text. It should include a variety of activities such as chart filling, w/h questions, filling in gapped sentences, completing diagrams. Also, activities may be assigned in the form of individual, pair or group work.

c- Post-reading stage

Again, the name of this stage implies that it should be held after the contact with the reading material has been established. Hereby, the teacher becomes more interested in checking if comprehension was achieved through asking questions. It's the phase for the wrap up on the part of the teacher while it may be the evaluative phase for the learner (Krashen and Terrel, 1988).

2.4.7.2 Reading Comprehension Teaching Techniques

Krashen&Terrel, (1988) and Brown et al, (1994) stated that many teaching techniques have been developed to activate learners' effective processing of texts so as to facilitate reading comprehension. Those techniques tend to be varied and mainly aim at providing learners with appropriate instructions as well as practice in applying reading strategies.

Below is a non-exhaustive list of techniques that may be applied inside EFL classrooms in order to foster reading comprehension:

a- The Semantic Map Technique

It is one of the most widely used techniques, which is targeted to activate learners' appropriate background knowledge of a given topic. It is an organized arrangement of vocabulary concepts which reveals that learners already know about the topic and provides them with a base upon which they can construct the new information learned from the text. Hereby, the teacher begins by telling the learners the topic they are going to read about then asks them to make free associations with it. Learners write down or pronounce whatever words they think of when they hear the topic. The teacher would then ask the learners to group their associated words into categories. The teacher can help learners by conducting the discussion with the whole class.

b- Questioning

Questions may be generated by the teacher or by the learners. They must be set before the reading takes place. Many teachers form pre-reading questions from the comprehension questions that appear in their textbooks. The problem here is that not all the questions originally designed as post-reading exercises can be appropriately converted into pre-reading activities. For instance, a question like "What is the main idea of the second paragraph?" does not provide learners with any clue to the content of the passage and also fails to stimulate their prior knowledge which would enable them to make feasible predictions.

c- Previewing

It is a technique to help learners predict or make some educated guesses about what is in the text and thus activate effective processing for reading comprehension. Several stimuli in the text such as the title, photographs, illustrations, or subtitles are usually closely related to the author's idea about the content. So, based on any of them, learners can make predictions about the content of the text and then join them to what they would read to come up at last with an effective comprehension of the text.

2.4.7.3 Reading Comprehension Classroom Activities

Day & Bamford, .(2002) and Nunan, (1991) agreed that there really exists a wide variety of activities that may promote an effective teaching of reading comprehension. Teachers may use more than an activity in one lesson and also vary activities from one lesson to another so as to avoid monotony and boredom on the part of learners.

Below are some of the activities that lend themselves to exploitation inside the reading comprehension classes:

a- Brainstorming

It is an activity that is used during the preparatory stage for the reading comprehension. It is based on elicitation and debate in order to predict topic and information in the text.

b- Contextual guessing

This is an activity that concerns vocabulary. It consists of finding the meaning of words by looking at the surrounding words in the text.

c- "Jigsaw" tasks

It’s an activity where learners are asked to reorder the mixed parts of a text to show that they understand how a text fits together.

d- Cloze exercises

They are simply “fill in the blanks” tasks. Some words are omitted from the text and the learners are asked to find out what the missing words are or can be. Those exercises are designed in order to measure how well the learners understand how a text is linked together.

e- Making inferences

It is an activity, which urges the learners to read between the lines of a given text. The learners are guided through questions to understand what is meant but not directly stated in the text.

f- Paraphrasing

It is when learners say or write ideas conveyed in the text they are exposed to using their own words.

g- Information transfer

Learners transfer information from a linear text into another form of a related text or drawing. For example, students are asked to fill in charts with details from the text, trace routes on a map, and fill in bubbles or complete diagrams.

h- Passage completion

It involves predicting a logical or a suitable conclusion based on a thorough understanding of the text.

i- Summary making

Learners are requested to produce a verbal or a written summary of the text to show overall comprehension of the text.

j- Matching

This activity makes students match words with their definitions or parts of statements with their counterparts.

k- Correcting false statements

It's an activity whereby learners are provided with false statements they are asked to correct according to the information displayed in the text.

l- Justifying true statements

Contrarily to the previously mentioned activity, this task necessitates that learners try to find justifications for true statements in the text.

m- Multiple choice

Learners are made to choose between various choices to better complete a statement or find out about the meaning of a word.

n- Reference

Learners are asked to find out about what some words, mostly pronouns, refer to in the text.

2.4.7.4 Tips for the EFL Reading Comprehension Classes

The researcher has conducted the following tips in order for EFL teachers to be more effective when teaching reading comprehension. It is advisable that they should consider some, if not all, of the following points:

1. Vary classroom activities so as to flee monotony and boredom on the part of the learner as well as the teacher.

2. Be lenient and ready to shift from one activity to another if you feel that it is not working or that it is not suitable.
3. Make the learners read more than once. A second or a third reading may be more beneficial for them to develop reading strategies in general and to reach comprehension if it doesn't occur during the first contact with the text.
4. Try to make the learners feel involved and motivated by making them answer questions suitable to their standard and abilities.
5. Try to raise the learners' interest in the text before, during and after the reading comprehension activities.
6. Try to be selective when choosing the activities to be dealt with in class as some of them are time-consuming while others necessitate strategies that your learners haven't developed yet.
7. Expand meanings included in the text to give a chance to learners to apply the information included in the text on their social and cultural environment.
8. Divide long texts into smaller parts to avoid overloading the learners with information and not to discourage them.
9. Encourage extensive reading as an activity outside the classroom framework. Learners are asked to choose texts or stories they think adequate or interesting for them to read and make verbal or written reports about them.
10. Try to help students develop their own strategies and approaches to dealing with a reading text through enough classroom practice.

2.5 CALL Brief Overview

CALL started in the 1950s and 1960s, mainly in the USA. Pioneers such as Suppes (Stanford University), Kemeny and Kurtz (BASIC, the 1960s (Kemeny and Kurtz, 1968, 1985) and Bitzer (PLATO, University of Illinois (Hart, 1981, 1995)) were among the first to use a computer as part of the learning process. The early CAL programs were rudimentary by today's standards, with mainly text-based interfaces. Bitzer was one of the first to realize the importance of graphics and sound in the teaching process. Initially, CAL programs simply tried to teach a particular topic without a basis on any particular educational philosophy. The TICCIT (Time-Shared Interactive Computer Controlled Information Television-(Merrill, 1983; 1988) at the Brigham Young University was based on a specific instructional framework that dictated the actual hardware. The Logo project was probably the first CAL system that was based on a specific learning approach (the experimental, discovery learning approach). More detail on the history of CALL is given in History.

2.5.1 Computer-Assisted Language Teaching CAT

Today teachers have access to innovative tools with which to enhance their curriculum. One of these technology tools is the computer, which has given students a new way to do research, allowed teachers to offer a wider topic range, and made available an endless amount of information. Additionally, the software connects teachers and students from all over the world so they can work collaboratively with other teachers and students anywhere in the world. Interactive whiteboards also allow students to touch the screen and participate in thought-provoking activities prepared by teachers. Specifically, special education teachers have access to tools such as a scanner that will read aloud and applications that emphasize reading skills. These tools could be helpful to a blind student listening

to a book, learning-disabled students playing with reading software, and dyslexic students learning how to read with software.

According to Woodrow, (1992) discussed the fact most of the research has focused on the effect technology has on students, while more attention should be paid to the effects technology has on teachers and the way they teach. Wilder maintained students move on, but teachers remain to influence the next group of students.

Even though this statement is presently ten years old, it still rings true today. Computer plays great and important role in EFL teaching and learning. It is used in practicing and teaching purposes. It has always been widely contemplated subject among the ELT researchers and pedagogues. Though, the use of computer technology in foreign language teaching, learning and assessment started during 1950s. It was not so widespread practice then. It did not form very important place in teaching and learning process of EFL due to the technology and infrastructure related issues. However, it is observed with the emergence of first generation of the personal computers in the 1980s. The use of computer technology in education, in general, and in EFL classrooms in particular, was accelerated. As this use proved fruitful, producing positive results in teaching, learning and testing processes. It paved the way to further research on possible exploitation of this technology for achieving maximum results. This resulted in people from varied fields like, computer engineers and software designers, applied linguists, academicians, language teachers and assessment specialists to join the hands to use this technology for making teaching and learning of foreign language like English more innovative, dynamic, interactive, interesting, easy and learner-centered. Today, computer technology enjoys a noticeable presence in second and foreign language teaching and learning processes. This is because of infinite benefits. This use has

for teaching, learning foreign language like English. The use of computer, in EFL classroom, can offer the delivery of a wide variety of multimedia content, with pedantic and authentic language models, accessed with individual control. It also presents another source of target language knowledge and examples and relieves the EFL teacher as the sole font of target language knowledge in the classroom.

As summarized by Szendeffy (2008, P. 04) "The use of computer also offers other channels of communication between class members and distant learners as well as supplemental practice exercises and tutorial feedback. The use also shifts the learning environment from the traditional 'teacher-centered' towards the 'learner-centered' approach moving EFL learner as a passive entity to a student who is active in the search for the fulfillment of his or her own learning needs and to use the language in an authentic situation".

Adams & Burns, (1999) stated that

computer use provides opportunities for a creative and dynamic EFL teacher to tap into these positive aspects to orchestrate challenging activities in his / her classroom that involve and empower students, stimulate thoughts and production and create more instances of authentic interaction between learners using the target language.

2.5.2 Types of CALL

CALL systems fall into two basic types: tutor or tool (Levy, 1997), although the term CAL often refers to computer tutors. In the tutor classification, the computer has the information to be learned and controls the learning environment. A CAI tool enhances the teaching process, usually by focusing on one particular learning task and aiming to improve it. Within the tutor classification, there are four modes:

drill and practice, tutorials, simulations and games (Garrison, (2008). Drill and practice (also known as “Drill and Kill”) are suited to the behaviorist model, with repeated practice on lower-level cognitive skills. Although often frowned upon, it can be useful in certain contexts. The tutorial mode is probably one of the most common ones within CAI. In this mode, the computer presents the information, guides the learner through the system, allows the learner to practice and then assesses the learner.In simulation mode, the learner works with a simulation of the real world. Simulation is used where it is not practical or feasible to provide the learning in “real-life” (for example, pilot training). In games mode, there is generally a competitive element (e.g. time constraints or a race). The idea is to reinforce the knowledge that the learner is assumed to have. While it is often more difficult to develop CAL programs in the simulation and games modes, learners tend to find them entertaining and challenging.

2.5.3 CALL Applicability

It is still unclear exactly what type of instruction is suitable or preferable in a given situation. However, several findings for CAL are generally accepted. CAI students have improved attitudes to the learning process (Bangert&Kulik et al, 1991). Students using CAL have performed moderately better than the control group (using various testing methodologies. They take about 30% less time to complete their tasks Fitzgibbon & Prior, et al, (2003) reported that CAL is at least as effective as non-computer based instruction. Koohang, (1989) summarized the observed benefits of CAL, which are: the effective use of educational technology for drill and practice of basic skills. Students learn more, and more rapidly in CAL courses, that the complex multimedia technologies available give learners have more control over the learning process, that students feel more successful, are more

motivated to learn and have increased self-confidence and self esteem (Byrom, E. (1997)), that teachers and administrators can use computers and information technologies to improve their roles in the education process.

2.5.4 Impact of Strategy

Ideally, EFL learners would already be aware of learning strategies and their effective use. However, even if they do use them, their use will generally be subconscious (except in higher-ability learners). The teaching of strategies can either be explicit (informed) or covert (blind) (Brown et al., 1994). However, it has been found that explicit instruction is more effective (Postman, (1993). Learners can be taught about learning strategies before undertaking a course of study. Indeed, there are various courses specifically designed for this purpose. However, incorporating strategy training exercises into regular classroom activities rather than as a separate activity, was more beneficial to learners.

A good CALL program should be aware of the different learning strategies that exist and which ones are more effective in a given situation. It can aid the learner by informing them of the various strategies and presenting them at the appropriate points throughout the program. For example, the BBC Online Language Web site (BBC, 2000) has a page on successful learning tips. Many modern language textbooks give hints to their learners about how to learn (Swenson & Redmond, (2009)). The framework developed in the project will provide the learner with such tips and hints as part of the program. This project is aimed at EFL learners. The sense of community may be stronger amongst these learners than in the mainstream language learner. This may impact the learning strategies used by the learners and determine those that are culturally acceptable for the learners. For example, social strategies that involve working with others may be suitable for EL

learners. If writing does not play a big part in the life of the EL community, it is possible that the learners will have quite advanced memory strategies available to them if they are accustomed to memorising information as part of their daily life. On the other hand, taking notes and summarising (a cognitive strategy) may not be immediately applicable. While EFL learners may not have much exposure to traditional education methods, this does not imply that they may not use learning strategies. Indeed, it would be interesting to observe the transfer of learning strategies from other domains to the language learning domain.

2.6 Learning, Education Philosophies, and Learning Styles

Computer Assisted Instruction (CAI) in general as there are many characteristics in common between CALL and CAI. It also reviews general learning issues such as learning styles and strategies, learner autonomy and the factors that affect the efficiency of the learning process. Where appropriate, reference is made to the EL environment and to how current knowledge of CAI may be applicable to the EL situation (Bates and Sangra, 2011).

One of the criticisms of CAI, in general, is that it sometimes tends to focus on what is technologically possible, without taking into consideration pedagogical issues. This section briefly reviews the educational psychology, learning style, and learning strategies.

Doyle (1999). Pointed that “second language acquisition (SLA) provides insight into how learners learn second languages and the impact of different learning situations in the language learning process. SLA is important in the field of CALL. Definitions of what learning is abounded and it is difficult to find one that”.

Scholars agreed with. Mayer (2002, p. 1040) defined learning as a "relatively permanent change in a person's knowledge or behavior due to experience".

Clarke, Mark & Silberstein, (1987) stated that
learning as that which occurs when information is understood and remembered by an individual and can be presented in various ways. However, Cantania (1992) suggested that "determining that learning has occurred and what has been learned may depend on one's perspective.

2.6.1 1 Learning Style and CALL

Rasmussen and Davidson, (1998) claimed that "CALL has the potential as an instructional medium to individualize the learning process. It may be more beneficial to all learning styles than others. For example, graphics and visually active instruction helps field dependent learners. Motivated learners who require specific instruction in a sequential format and enjoy frequent feedback, will generally benefit for CAI. Kinesthetic, peer-oriented learners (such as the Abstract-Random of the Gregorc Mind Styles, Gregory (1985)) will not gain as much from CAI (Dunn and Dunn, 1979) as there are limitations regarding what a learner can physically do with a computer (as least with the current technological restrictions). Each model can be used to identify those learner types that will benefit most from CAI. In the Kolb model (Kolb, 1984), it is the concrete learners (i.e. those that learn from direct involvement in a new experience) that benefit (Erdemir, Bakırcı, &Eyduran, et al, 2009). In the Gardner model, different techniques can be used to accommodate each type of intelligence (e.g. moving things around with a mouse for bodily intelligence, paint for spatial and telecommunications for interpersonal intelligence). With the HBDI, it is the right-brain learners who will gain most from

CAI. Under the Gregorc mind styles, the Concrete-Sequential (hands-on) and Abstract-Sequential (logical) learners are suited to CAI whereas the Concrete-Random (risk takers) and Abstract-Random (holistic) learners can often become flustered. Ideally, the aim is to create an interface that can accommodate all learners, but this may be hard to do. Also, it may be difficult for people that cannot adapt their learning style to CAI. Some degree of style flex (i.e. when the user learning style is adapted to match the CAI application) may be required (Butler, 1984). This is not necessarily a bad thing as it may expand the learner's style range but it should not be such that it causes undue stress on the learner (Gregorc, 1985). However, the studies are not conclusive".

According to Ross (1997), CAI may not be suitable for all learning styles. Interestingly, Brown, (1994) indicated that "while cognitive style groups interacted differently with a CAI program, comparable achievement levels were attained by field dependent and field independent learners.

Woods, Baker & Hopper, (2004) stated that

the need to cater for a variety of learning styles by providing different modalities.

Corbett & Anderson (2001) noted out that "further research is required into interface design in order to foster style matching. Theories of learning styles and the testing of the interaction between learning style and CAI have mainly been carried out in developed countries and with learners familiar with traditional educational environments. Most EL community members would have limited formal education. Very little is known about the learning styles of those with minimal exposure to the traditional education setting. Culture may also play an important role. Cultures that have a well-established hierarchical system may foster field dependent learners, for example. People who live in an environment in which learning usually takes place by doing may tend to have a concrete-sequential mind style. While there may be no specific information about the learning style

preferences of people from EL communities, it cannot be assumed that they have a homogenous learning style. It is more likely that they will probably show somewhat similar variation to people from non-EL communities".

2.6.1.2 Learning Strategies

Learning strategies are keys to greater autonomy and more effective learning. Learners use various learning strategies and these strategies are differentially effective depending on the situation. If learners are aware of learning strategies and their effectiveness, they will be able to enhance the learning process. However, if they are not aware of these strategies, they are missing out on potentially useful aids in the learning process. For example, language learners often underestimate how essential practice. It has been agreed that when learners are aware of the importance of practicing cognitive strategies, they will be able to employ them during the learning process. Learning can be a stressful process for some, and anything that can reduce learner stress is to be welcomed. Learning strategies are steps taken by students to enhance their own learning. They are operations employed by the learner to aid the acquisition, storage, retrieval and use of information (Erdemir, Bakırcı, &Eyduran, 2009)).

Wiliam, (2007) suggested that "even though learning strategies and their effective use which deals with CALL, will influence the language learning environment. They identified six major groups of (language) learning strategies: memory, compensation, cognitive, metacognitive, affective and social. Meta-cognitive strategies include organizing, evaluating, and the planning of learning. Typical instances are setting goals and objectives and self-evaluation. A cognitive strategy is the most common in language teaching programs".

According to Wiliam, (2007) would entail analyzing, reasoning, transferring information, taking notes and summarizing. Practicing and highlighting are cognitive strategies. Compensatory strategies involve guessing and inferring. The grouping and structured reviewing of information would be described as a memory strategy. Other memory strategies include applying images and sound and employing action. Effective strategies are used when learners control their emotional state (for example, lowering anxiety). When learners work with others and ask questions they are using social strategies. There is no one clear definition of what constitutes a learning style. Each model groups learners according to different criteria, but a common theme is that people with different styles have different approaches to learning. One generally accepted definition is that of Curry (1987). His model is known as the onion model and is composed of four layers: personality dimensions; information processing; social interaction and instructional and environmental preference. The personality dimensions layer accesses the influence of personality on preferred approaches to learning. The information processing layer tries to understand the learners' preferred intellectual approach to assimilating information and the processes by which information is obtained, sorted, stored and utilized. The social and environmental preference layers consider the learners' preferred learning environment.

2.6.1.3 Student-Centered Technology in the Classroom

Means, Blando, Olson, Middleton, Morocco, and Remz (1993) confirmed that “computers are being used, in part, to enable teachers to improve the curriculum and enhance student learning. One potential target could be "at-risk" students. Recent findings show that not being challenged and not being given the chance to use complex thinking skills are depriving "at-risk" students of a quality education.

They suggested that technology in the classroom could provide authentic learning opportunities to "at-risk" students. Teachers can draw on technology applications to simulate real-world situations and create actual environments for experiments so students can carry out authentic tasks as real workers would, explore new terrains, meet people of different cultures, and use a variety of tools to gather information and solve problems (Means et al, p. 43). Most of these "at risk" students will be entering the work field after high school, and real world experiences could be helpful in fostering these students' success. Several studies have suggested any student, including the "at-risk" student, who has technology integrated into the curriculum, could potentially see a positive change in classroom grades and attendance. Technology brings about changes to the classroom roles and organization, especially as it allows students to become more self-reliant. Students may use peer coaching and teachers may function more as facilitators rather than lecturers. Students are allowed to work on their own, at their own pace, when working on computer projects. These students may not be afraid to fail when their failure is personal instead of in a large classroom discussion".

According to Richards & Rodgers (2001) technology (a) Must be used to support collaboration in the classroom or to access information, (b) Should also be used to express and represent the thoughts and ideas of students.(c) Must be used with authentic forms of assessment to be a value to students and teachers in the classroom.

The study conducted by Paivio and Clark (1991) on the Apple Classrooms of Tomorrow (ACOT) over a ten year period showed changes in teacher and student interactions. Teachers were observed more as guides or mentors and less as lecturers. The cooperative and task-related interactions among the ACOT students were spontaneous and more extensive than in traditional classrooms. Student

interest in computers did not decline with routine use, and teacher peer sharing began to increase as students and teachers sought support from one another. Other changes that were seen during this study were teachers began teaming and working across disciplines and school schedules were made to accommodate unusually ambitious class projects by the administrators and the teachers. Teachers and students started to show mastery of technology and to integrate several kinds of media into lessons or projects. Classrooms were a mix of traditional and nontraditional learning, as teachers changed the physical layout of the classroom along with daily schedules to give students more time on projects. Both students and teachers were motivated to team with others while analyzing and solving real-world problems with the use of carefully planned projects. The ACOT study brought to the light meaningful use of technology in schools goes beyond just putting computers in classrooms. Technology cannot be considered a change agent for education in and of itself. When used as an integrated tool with the curriculum, technology can make a difference in education.

2.6.1.4 Learner-Centered CALL

The concept of learner-centred design is an important one in education. It means focusing on the learner and his/her needs and motivations. Shrossbree, (2008) discussed learner-centered education, defining it as placing the student and the learning process at the center of the decision-making process. The concept of learner-centredness is also important in the area of curriculum/syllabus design. Various authors have proposed Learner-centred principles. APA (1997) list 14 principles grouped into cognitive and metacognitive factors, motivational and affective factors, developmental and social factors and individual difference factors (Zepke, Leach &Prebble, 2006)).

Hoven (1999) proposed the following five principles for learner-centred CALL

1. A socio-cultural methodology provides a suitable paradigm.

2. Learner-centred features include recognition of features and their propensity to change. Depending on its potential to be modified, a feature will either be identified as less amenable to change (e.g. sex or age) or somewhat/more amenable to change (e.g. learning style) and dealt with accordingly.
3. Learners must be taught how to manage control in a learner-controlled environment.
4. Task-based pedagogy (e.g. one that recognises that language learning is a developmental process – Kumaravadivelu, 1993) is a good framework to use.
5. Models of good practice from SLA and CALL should be used.

Thomas, and Keinders (2010) pointed out that" learners should be more involved in the CALL development process. They refered to the benefits of a learner-centered approach, which works in tandem with the promotion of LA. CAI brings with it several potential benefits as a teaching/learning medium. These include self-paced learning, self-directed learning, the exercising of various senses and the ability to represent content in a variety of media.1 As these topics will be explored in greater detail throughout this document, only a brief overview will be given here. Although CAI has not been studied in the EL community situation, many of the benefits in the general CAI context should also be available in the EL one. With self-paced learning, learners can move as slowly or as quickly as they like through a program. If they want to repeat some task or review some material again, they can do so as many times as they choose. The program will not tire or complain about repetitions. Learners can skip over a topic if information is already known, making the learning process more efficient. With self-directed learning, learners can decide what they want to learn and in what order. As will be shown later in this chapter, learners have different learning styles and use different learning strategies".

Chen, Lambert & Guidry (2010) have shown that “when learners can learn in a way that suits them, improvements in the effectiveness of the learning process normally ensue. Humans are multi-sensory animals. The more senses through which we receive information, the easier it is to remember”. According to Fletcher (1990), “people remember 20% of what they hear, 40% of what they see and hear and 75% of what they see, hear and do. The fact that the computer can exercise various senses and present information in a variety of media can enhance the learning process”.

Thomas &Keinders, (2010) also reported that “computers encourage learning as they provide a stimulating environment and promote enthusiasm. Computers may help the reticent student who is afraid to make mistakes in a classroom situation”. They are good for online reference which useful in a language learning situation (for example, online dictionaries 1 Ancillary benefits, such as freeing up teacher time, will not be discussed here. and can cater for students of different abilities. Also, the ability to provide quicker and perhaps more directed feedback is a further benefit of CAI”.

2.6.1.5 Learner Autonomy

Driscoll, (2002) stated that

learner autonomy is seen as one of the most important elements of CAI. It has been widely discussed in the research literature (e.g. Petterson. (2004). It is generally defined as an ability to take charge of one's own learning. Learner autonomy occurs when the learner has the “capacity for detachment, critical reflection, decision-making and independent action.

Independence and individual responsibility are core notions of LA. With the increased use of modern communications technology (email, discussion groups)

and co-operative approaches to learning, most noticeably in CALL, the notion of learner interdependence (between a group of learners and teacher) has emerged. In the traditional classroom situation, all the learners must follow the teacher and often LA is not encouraged. The task to be learned is decided by the teacher, who also controls the pace of a lesson. This makes it hard on many learners, whose ideal learning space is different from that established by the teacher. With a CAI program, learners can work at their own pace. The learner can spend more time on those topics that are causing difficulty. Information can be reviewed and tasks can be repeated until the learner is happy to move on to a new topic. The learner feels in control and that usually enhances satisfaction levels with the learning process (Petterson, 2004).

2.6.1.6 Locus of Control

The locus of control refers to what controls the learning process. A program is defined as either program controlled or learner controlled. Learner-controlled programs (as opposed to program-controlled programs) allow learners to decide what and how they are going to learn. Learner control can refer to many different factors. It may refer to the learner's ability to control the amount of practice, feedback, and review. It can also refer to the method of instructional delivery (lecture, discussion). The amount of instruction may also be under learner control. Under learner control, learners can tailor instruction to their own needs and preferences. We have seen that learners have different learning styles and the ability to tailor a program to their own style should improve the learning outcome. Learner control over the learning environment is pedagogically compelling (Means, Blando, Olson, Middleton, Morocco, Rernz, 1993).

CALL literature refers to the benefits of learner-controlled programs. In a learner-controlled environment, learners have increased levels of motivation (Kinzie et al., 1988). Learner control can alleviate boredom, anxiety, and frustration while maintaining learner attention. Students report greater satisfaction levels (Paivio& Clark, 1991).

2.6.1.7 Increased Learning

Oxford, (2000) stated that "the potential of learner control has not been empirically proved. Different studies have produced different answers to the question of whether or not learner control actually increases learning. In theory, the ability to tailor a program to one's own style preferences should enhance learning".

Some studies have shown that learners learn less with learner controlled programs. However, other studies (Gray, 1987; Kinzie, 1988; Ross and Morrison, 1989) have reported that learners learn more with learner controlled programs.

2.6.1.8 The Learner Control Paradox

The increased flexibility and customization offered by learner controlled programs fits well with the "each learner is an individual" and learner autonomy philosophies. However, sometimes the switch to a learner-driven approach does not work well. Why would this be the case? Surely allowing learners to determine what, when and in what order they learn, would enhance the learning outcome? One explanation is that the learner does not know "how to learn". While the advantages of such an approach may work for higher-ability learners, this may not be the case for lower-ability learners (Kolb, 1984),.

Jeffrey, Milne, Suddaby& Higgins (2012) contend that "learner-centred programs may not be suitable for all types of learners. The underlying philosophy in learner-centred programs is that learners are aware of their needs and know how to achieve

them. While this may be the case for higher-ability learners, is does not always hold for lower-ability learners. Lower ability learners need the guidance provided by a Program-Centred program to get the maximum benefit from a CAI program. A program that makes a relatively high amount of practice available to learners as the default route is likely to be more effective than one that offers fewer practice opportunities". Several researchers (Salomon et al, 1989; King, 1991) refer to the value of providing online learning guidance to students lacking (language) learning skills and strategies. Well-designed instruction in learning strategies is the most effective method in assisting all learners to control their own learning process. However, up to now, the whole process of learning strategy instruction has not been extensively integrated into the teaching process, perhaps because it is a relatively new element in the whole process. The locus of control should be viewed as a spectrum rather than an either/or dichotomy. A CAI program can be considered to allow more or less learner control. With lower ability learners, the presentation of more (rather than less) information and exercises should be provided as the default option. Learners tend to stick with the default settings (eventually, if not initially) and thus the program should guide the learner through the system in a "fuller" (more information) rather than a "cleaner" (less information) mode.

2.7 Teachers and Computer Literacy

In Asan's (2003) study, primary teachers‟ perceptions and awareness level about specific technologies, and about the role of technology in education, and how they see the technological problems that are faced by basic education school systems. The results showed that many teachers were not computer users and lacked a functional computer literacy background upon which to build new technology and

skills. The study also indicated that the use of computer and related technologies was not a routine part of their teaching and learning environment.

According to Sandholtz, (1991) investigated the teachers' attitudes toward computer-assisted learning (CAL). The results showed that the majority of science teachers had positive attitudes toward CAL and no gender difference exists between science teachers' computer-assisted learning attitudes.

Ocak and Akdemir (2008) similarly stated that

teachers' computer literacy level is related to their computer use. And also computer literacy level of the teachers increases their integration of computer applications in their teaching. In the study, most of the teachers use Internet, email, and educational software CDs as computer applications in the classrooms. They found statistical differences in the integration of computer applications as an instructional tool. Teachers' attitudes toward computer technologies are related to teachers' computer competence. In their study of the correlation between teachers' attitude and acceptance of technology.

According to Ocak&Akdemir (2008) maintained although many teachers believe computers are an important component of a student's education, their lack of knowledge and experience lead to a lack of confidence to attempt to introduce them into their instruction. A large number of studies showed that teachers' computer competence is a significant predictor of their attitudes toward computers.

Na, (1993) found that "most teachers who showed negative or neutral attitudes toward the use of ICT in education lacked knowledge and skill about computers that would enable them to make informed decision‟ (p. 253).

A major obstacle to successful technology integration was the lack of teacher confidence and skill when using technology (Zhao, Tan & Mishra, (2001)). Again in another study (Erdemir, Bakırcı&Eyduran, 2009), confirmed that pre-service teachers state that they do not feel themselves adequate for using internet and

computer for the purpose of teaching, while they feel that they are adequate for using search engines; they can prepare basic materials for teaching but not complex and multi-purpose educational devices. Veen (1993) noted that "described the daily pedagogical practices of four teachers in the midst of implementing Information and Communication Technology (ICT) in their classrooms in Dutch, found that the most important factor affecting teachers' use of ICT was teachers' attitudes regarding what should be taught and the way it should be taught. Computer related technical skills were found to be less important than skills related to the teachers' competence in managing activities and communicating lessons. Teachers must be given the opportunity to become acquainted with newly introduced technologies.

2.7.1 Teacher Training and Professional Development

According to Becker, (1999), Gobbo& Girardi, (2001), there is a positive relationship between computer technology training and teachers' attitudes. Training can significantly impact the ways in which a teacher embraces technology tools in the classroom. It has been reported that both personal theories of teaching and the level of competence with technology play a major role in how teachers implement technology.

Professional development is a key element to the success of blended teaching and learning initiatives. In all instances, professional development helped teachers become adept technology users and skilled at technology integration in a blended environment. After the educational goals and visions of learning through technology have been determined, it is important to provide professional development to teachers to help them choose the most appropriate technologies and instructional strategies to meet their goals. Students cannot be expected to

benefit from technology and teachers cannot be expected to use it if they are neither familiar nor comfortable with its use (Crowl, 1993).

Crowl, (1993) found that “teachers who had received professional development with computers during the last five years were more likely to use computers in effective ways than those who had not participated in such training”.

Yet, teacher training too often focuses on helping new teachers survive the first year of technology use without equipping teachers to use the technology Ocak and Akdemir (2008) suggested that many pieces of training are too focused on tools and not strategies of how to use them (Baver et aI., 2006, p. 22). faculty should be compensated for completing training and using technology. The fact is that it takes much longer than a year to incorporate and understand the effects of technology added in the classroom, and teachers often complain about the lack of training available for them to learn new technologies (Baver, et aI, p. 22).

Young (2007) suggested that “colleges have spent millions on smart classrooms packed with the latest gadgets to assist teaching--computerized projection systems, Internet ports at every seat, even video cameras with motion detectors that can track the movements of a lecturer. But colleges have spent far less time and money giving professors the skills to use even the simplest technology effectively. If teachers are not properly trained, technology might actually impair their effectiveness. This would mean they would be more effective using something they are skilled at using such as chalk on a chalkboard. Another problem could be the fact many of the technology tools districts buy go unused in some classrooms, while teachers who are interested in teaching with technology and enhancing their curriculum do not have the tools needed. In other words, some have it and do not use it, while some want it and do not have it ” (p .31).

According to Postman (1993) "Technology is ideology. To be unaware that a technology comes equipped with a program for social change, to maintain that

technology is neutral to make the assumption that technology is always a friend to culture, at this late hour, stupidly plain and simple. While some changes brought by technology have been positive, some issues remain unresolved. For example, students often complain of PowerPoint abuse by teachers, wasted time fumbling with projectors or software, unmediated chat rooms, and wasted time teachers spend teaching web tools and not content. However, these same tools can be highly beneficial to students if they are used along with a sound instructional method. Teacher complaints toward integrating technology tools into the classroom include no training, no compensation for completing training, long hours learning new technology tools, and poor distribution of technology tools among teachers. The government is interested in assessing student achievements after adding technology tools into the curriculum and has offered grants to help school districts obtain technology. However, even the government admits more than a standardized test must assess the success of technology use in the classroom" (p. 135).

2.7.2 Teachers and Computer Anxiety and Interest

According to the report of International Society for Technology and Education (ISTE) (2001), relatively few teachers (20%) report feeling well prepared to integrate technology into classroom instruction. Although computers have been put in the classroom, many teachers are still skeptical of the value computers have provided for teaching and learning. Studies indicate that the level of feelings teachers has toward computer use range from euphoria to uncertainty, to hostility and fear (as cited in Chin &Hortin, 1993)).

Berson, (1996) and Saye, (1998) noted that “some teachers show little interest in using instructional technology, while others are obviously resistant to its use. Some

positively accept the concept, but feel somewhat bound by lack of training for effective integration". Still, some teachers have ambivalent feelings toward technology. Feelings of uncertainty, hostility, and fear naturally lead to many teachers‟ reluctance or resistance to technological innovation. They will continue to adhere to their traditional practices with which they feel more confident and comfortable".

Ocak and Akdemir, (2008) showed that "the effective use of technology enables teachers to facilitate and adjust their instructional strategies to optimize students' learning. In this respect, when teachers' role and activity in the process is taken into account; it is important to know teachers' interest in technology and their attitudes, affective features towards technology".

Erkan, (2004); Rohaan, Taconis&Jochems, (2010). Kagan (1992) noted that "teachers' attitudes appear to lie at the heart of teaching and tend to be associated with a congruent style of teaching. Teachers' attitudes and emotions also build the meanings they bring to innovations such as technology integration. Hence, changes to teaching style, as might be required by working with technology, may necessitate changes to teachers' attitudes".

Despite the clear demonstration of the benefits of using technology in education, there continues to be a marked reluctance by academics to engage with online learning (Anderson, 2008).

Hea-ton-Shrestha, May and Burke, 2009) found that "teachers to be much less

positive than their students about the learning benefits of computer technology. Academics worldwide reported low enthusiasm for using technology in learning. More recently, a large-scale study (over 4,500 teachers) by Allen et al. (2012) found that 65% of faculty were more afraid of teaching with technology than they were excited by the prospect".

Mansvelt, Suddaby, O'Hara, and Gilbert, 2009) pointed that "over the past 15 years several factors have been identified as discouraging academic staff from teaching in computer environments, including inadequate support and training, time for developing computer materials, fears of failure, and beliefs about the value of technology in education. They presented findings from an online survey of 408 teachers and 40 qualitative interviews ascertaining beliefs and experiences of staff regarding e-learning professional development. They found that managerial support, individual beliefs, and time allocation influenced the attitude of faculty to attend training to improve their use of technology in teaching".

Allan, (2007) also argued that "using the computer for professional development would not be effective unless the account was taken of two factors: the extra time involved in networked learning, and for people new to e-learning to adjust to this type of study".

Greener, (2009, p. 267) reported that "online, the teacher's status can easily be eroded, as learners can compare teacher-designed resources with video lectures from across the world on similar topics and chat directly with experts in the field through their blogs. The potential for such comparisons inclined teachers to be reluctant to expose themselves to ridicule or unflattering comparisons. A number of studies have found that beliefs about the usefulness and effectiveness of technology influenced whether teachers integrated technology into their teaching".

AslıÖzgün-Koca&İlhanŞen, (2006) claim that "teachers argued their reluctance to use technology as stemming from a concern for the educational well-being of their students. For example, they claim that technology has no beneficial effect on learning and is even instrumental in maintaining students in a state of semi-disengagement".

The same study reported concern by teachers that technology could decrease student interaction and result in greater social isolation for the student. Christie and Jurado (2009) also found that being convinced of the effectiveness of technology was necessary before teachers would fully engage with it. Teachers who fail to recognize the benefits of online learning are less likely to create effective blended courses. A negative or indifferent student response to poorly designed online components in a blended course may reinforce the teacher's belief that such additions to the traditional classroom have little value (Heaton-Shrestha et al, 2009).

Finally, it can be stated that simply providing technology resources does not guarantee their use in language instruction. Therefore, it is necessary to convince teachers of the usefulness and benefits of these resources in improving teaching and learning. This suggests the need for effective guidance, support, and training for teachers in integrating computer technology resources into language instruction through more hands-on and direct practical experience. The prominent factors that influence the use of computer technology resources are the provision of efficient and effective training support and more systematic incorporation of technology resources into the curriculum. Training should not be limited to how to use computer technology; it should show teachers how they can make use of technology in improving the quality and effectiveness of their instruction, as well as how such technology resources can be effectively integrated into the curriculum. There is a need for ongoing training and assistance in helping teachers to better employ computer technology resources in pedagogic practices. Although it is important to know that teachers need more equipment or more time to plan for technology use, it may not always be enough. It may also be important to understand teachers' reasons for computer technology using or not using computer

technology and their attitudes about the value of technology in teaching and learning practices. While introducing computer technology resources to teachers, their pedagogical potential should be emphasized and guidance and assistance should be provided on ways of integrating these resources into instruction. Those who plan to integrate particular technology resources need to provide the rational and grounding for better integration into language instruction and learning. Teachers need to be provided with explanation, guidance, and assistance from trainers and other colleagues, and also the opportunities to reflect and discuss the integration, share outcomes and possible problems with each other. To understand how to achieve better integration, we need to study teachers and what makes them use computers, and we need to study computer technology resources and what makes teachers want to or need to use them. The innovative nature of technology, as it continues to change and expand, will require teachers to adapt and change the way they approach teaching and learning.

2.8 Multimedia Technology Barriers

New and improved models of multimedia teaching are often considered the best way to teach students; however, they change regularly, just as technology does. Other barriers to using multimedia in education include lack of teacher time, training, and support; limited access; high costs of equipment; lack of vision or rationale for technology use; and assessment practices that may not reflect what is learned with technology. In particular, the lack of teacher training and expertise is a major barrier to using the computer and related equipment (Greener, 2009).

2.8.1 Lack of Training

Lack of training is serious problem that has been experienced. Without adequate training, multimedia technology cannot be quite effective in the classroom. Without computer competence, teachers' anxiety increases, and their attitudes toward computers is going to be passive. Therefore, adequate time allows teachers to experiment with new technologies, to share these experiences with other teachers, to prepare lessons using the technology, and to attend technology courses or meetings. Learning how to use new technology includes the time the teacher needs to become competent with the computer as a personal tool and as an instructional tool. Teachers need to develop their skills outside of the regular school day so they can concentrate on instruction and training objectives during the school day. After teachers become knowledgeable about using technology tools, they need time to transfer the skills learned into the curriculum. Training could come in many forms, such as in-services, professional development, collaborative learning, and peer coaching. Whatever methods are pursued, teachers need the time to learn at their own speed and with their own learning styles (Brand, 1998).

2.8.2 Administrative Support

A major problem with multimedia technology in schools is many schools cannot afford to have full time school-level computer coordinators, even though this is an important step in having computer technology work in schools. Administrative support and training within a school district may not always be planned or may not meet the needs of the teachers. Many times, the training may focus on how to use equipment but misses the importance of how to integrate the technology into the curriculum, and school-level. Computer coordinators help to bridge that gap. These school-level computer coordinators collaborate with the classroom teacher using the technology tools available, even at times teaching the class. They also conduct

after school classes for teachers on specifics designated by the teachers themselves. Admittedly, technology can be difficult to integrate into the curriculum. Indeed, systems. Courage and funding are also integral parts of making quality changes in a school. However, when teachers see how technology can benefit their students, they might be willing to become part of the technology plan. Schools and districts need to meet the vision of the new technologies with planning and leadership. Teachers must be included in this process of understanding the curriculum uses and ways of incorporating technology into the lessons. Many times, the need for keeping abreast with new technology changes is not communicated to teachers. The fact is to be effective, technology must be ingrained into the broader education reform movement that includes teacher training, curriculum, student assessment, and a school's capacity for change. Teachers have the unwieldy task of keeping up with new styles of learning, new program changes, and new technology, and they need to prepare themselves and their students for those changes. Schools need to aid in this preparation by addressing these changes through administrative support (Roschelle, 2000).

2.8.3 Lack of Computer Proficiency

Computer proficiency is commonly required. Many professions have adopted computer systems. Even at home, computer skills are necessary to do many common tasks, such as pay bills online; email friends, family or business associates; and book reservations for vacations. Employers and university professors demand certain skills and modes of thinking appropriate for the challenges of the 21st century and almost all jobs now require some basic understanding of computer hardware and software, especially word processing, spreadsheets and email. Schools must change to meet the demands of higher education communities and the job market to prepare students for a successful adult life after they finish high school and to enable them to compete

internationally. Time and flexibility are needed to make changes in school (Bassett, 2005).

2.8.4 Lack of Workshops

Many types of research findings indicated that ongoing workshops should be conducted. Teachers need to attend workshops related to the effectiveness of technology on student achievement. Their findings revealed positive and consistent patterns when students were engaged in technology-rich environments, including significant gains and achievement in all subject areas, increased achievement in preschool through high school for both regular and special needs students, and improved attitudes toward learning and increased self-esteem. Evaluators of educational technology do not have an easy job and could be disadvantaged by the fact technology is constantly changing and improving. Therefore, legislators and the public are interested in the results of the money they spend on a particular technology in the school systems and neglecting workshops in technology integration. However, by the time researchers collect, analyze, and publish data regarding that particular technology workshops, it is probably obsolete (Honey, 2005).

2.8.5 Lack of Applications

Researchers have also investigated the availability of specific software. The researcher for this project found that the most common software used in middle and high school classrooms seems to be the Microsoft programs Word, Excel, PowerPoint, and Access. These programs are readily available on most school computers and students and teachers have most likely been exposed to these programs for years. However, other applications are either unavailable or teachers and students are unfamiliar with (Barron & Goldman, 1994)

According to Keller (2003, p. 30)) “PowerPoint is especially popular in less than a decade, it has revolutionized the worlds of business, education, science and communications, swiftly becoming the standard for just about anybody who wants to explain just about anything to just about anybody else. PowerPoint can also be a wonderful tool for students and teachers to give out information if used properly. A PowerPoint presentation used on an interactive whiteboard can be especially interesting since students and teachers can manipulate information with a simple touch to the screen”. However, PowerPoint is not without its disadvantages.

According to Young (2007, p. 29) PowerPoint is one of the most common technologies used amongst teachers and also the most criticized software programs used by teachers. One of the problems with using PowerPoint for a presentation of information is having the slides actually take over the presentation instead of keeping the speaker on the topic, supporting key ideas through image and enhancing the overall presentation”. Young). Keller (2003, p. 30) also reported a problem with PowerPoint presentations: There is the old axiom in design that said, 'less is more. "They should have that printed on the outside of the PowerPoint box. It needs a warning label.

PowerPoint is not the only software program to be highlighted in the research. Tuttle (2006) posted his research on student improvement on a blog at wordpress.com in December 2006. Tuttle used an Excel spreadsheet weekly in his English classroom and reported that the class' journal writing improved overall from 80 words to 180 words in less than 10 weeks. In addition, Coley (1997, p. 56) studied examples of student improvement through the use of technology in an analyzed study by Kulik and concluded, "Students usually learn more in less time when they receive computer-based instruction, students like their classes more and develop more positive attitudes towards computers when their classes include computer-based instruction. The report goes on to say that the effects of computers

were not always positive: "In 34 studies that examined students' attitudes toward subject matter, for instance, the average effect of computer-based instruction was near zero".

2.8.6 Learners' Challenges

2.8.6.1 Learners and Educational Psychology

Young. (2007) reported that "CAI should be based on educational theory, otherwise the learning is left to chance. Although there are no clearly defined boundaries between the various different educational psychologies, there are four basic groups. Behavioral psychology (Skinner, 1968) focuses only on objectively observable behaviors and discounts mental activities. The cognitive model".

According to Merrill, (1991) knowledge is constructed and is not simply a learned response. This model considers the active mental processing that occurs and the setting (individual, group, and environment) when acquiring knowledge. The constructivist approach Keller, (2003) considered the nature of knowledge, the mental activities of learners and how knowledge develops in learning. In this model, learners use their intuitions to link prior understanding and new knowledge, which can be acquired by new experiences and interaction with the physical world. The humanist psychology of Maslow (1954) and Rogers (1969) is complex and based on personality. It is founded on generally accepted principles of human nature (Young, 2007) argued that learning occurs as a result of intrinsic motivation and reflection on personal experience. The behavioral psychological model fits well with lower-level learning activities such as rote learning, while at the higher end of the spectrum, for more complex learning tasks, the humanist model works better. Many of the available CAL applications focus on the lower-level learning activities and in some respects could be deemed to fall into the behavioral model.

The behavioral model has fallen out of favor for many years because its assumptions are deemed to be too simplistic. However, as more experience is gained with CAI and better technology becomes available, CAI applications based on more advanced educational psychologies have been developed.

2.8.7 Cultural Challenges

2.8.7.1 CAI, Cultural Issues and Endangered Languages

CAI has generally, although not exclusively, been studied in a western setting. Culture and language learning are much more inherently intertwined than other CAI applications. This section looks at some of the culture and CAI issues while the interaction of culture. Benefits and effectiveness of CAI must be understood with its predominant western cultural orientation in mind. This is not to imply that they will not carry over to non-western cultures, but rather that some adjustments may be required.

Geres, (1997) noted the scarcity of information on cultural approaches to CALL design and suggested that learners from non-western cultures, studying in a western environment, should be made aware of the western way of learning. One of the reported benefits of CAI is the ability for the learner to work at his/her own pace and manner. This ties in neatly with western democratic ideas. However, it is recommended that non-western students must be provided with explicit information about western ways of knowing, learning and teaching if they are to avail of the benefits of CAI. Two examples from non-western cultures serve to illustrate this point. Asian students (e.g. Chinese or Japanese students) are generally accustomed to an educational environment in which the learner is a passive participant in the learning process. If the CAI program has been developed

from a western cultural perspective, the Asian students will need to be made aware of the learner control approach and given guidance as to how to avail of it, perhaps on a gradual basis.

Another example, given by Geres (based on research of Lakoff (1987) published by Driscoll (2002, p228) at the British Columbia Institute of Technology have developed a curriculum that explicitly incorporates cultural information into the English as a Second Language (ESL) curriculum. It includes information about working cooperatively in groups and how to handle team meetings. Information about CAI and Endangered Languages is also very scarce. While ELs share several characteristics with Less Commonly Taught Languages. The lack of formal education and the generally low social and economic position of the learners sets them apart from mainstream CALL learners. The lack of formal education implies that the learners may not have experience of the sequence of a lesson and therefore may not be able to navigate around the system without guidance. While drill exercises are out of favor amongst some educationalists, they are suitable for learners who lack confidence and gain from the straightforward testing approach. One disadvantage that those without exposure to foreign or second language learning have is that they may not have a repertoire of learning strategies available to them. Therefore, explicit provision of learning strategy information would be of benefit to them. Learner Autonomy has been recognized as being important in the learning process. However, it is often difficult to foster and achieve amongst learners. This is often due to the fact that learners, who are used to being passive learners in their previous educational settings, find it difficult to take control of their own learning. This is only a speculation, but it may transpire that Learner Autonomy is not so difficult to achieve amongst learners with limited formal education. This is because they have generally taken control (albeit unconsciously) of their own learning by default (due to the lack of formal or directed learning).

From my limited experience of Pipil community members and people from low-income backgrounds in El Salvador, I would imagine that they would have less reticence in asking questions and have fewer inhibitions about the (non-formal) learning process. Whether or not this would translate to the CAI learning situation is an interesting question.

2.8.7.2 Classrooms Challenges

Thompson & MacDonald, (2005) and Teo, Lee, & Chai, (2008) found that "sufficient computer literacy in students is a necessary condition for successful autonomous learning in a CALL environment. This is an important consideration in the Endangered Language context, where literacy levels may be quite low. It means that extra care must be taken with the clarity and presentation of information and implies that attention must be paid to non-textual information (e.g. sound and audio elements).

CAI is not without its problems. With self-access programs, learners can be left on their own too much and may feel overwhelmed by the information and resources available. On the other hand, there may be too much direction from the computer if classroom methods are transferred to the computer. discusses the issue of Learner Autonomy and Learner Control (Teo, Lee & Chai (2008)).

Dawson (1997) stated that

the tendency to use multimedia should be avoided and that due attention must be paid to current theories on language acquisition. However, this does not mean that multimedia should be avoided. Some researchers.

Levy, (2007), Meskill and Mossop, (1997) claimed that "meaningful multimedia practices are possible and can result in more learning. Malfunctioning equipment can not only result in lost time but also create a negative attitude towards CAI. While the ability to follow links in a Web-based learning system can be of benefit,

learners may lose time in navigation. CAI is not yet a mature field. While various CAI models exist, not all CAI programs offer all the benefits of CAI. Sometimes what is theoretically advocated is not implemented in practice (either due to lack of knowledge or technological unfeasibility)".

Sometimes, the effective or good practices are not easy to identify. Continuing research will help to advance the field of CAI. One interesting research area is that of Web-based Adaptive Educational Systems (WAES), where the system adapts to the learner, providing different levels of information, help, and feedback (Barron, & Goldman, (1994)).

2.9 Review of the Previous Studies

Anglin, Vaez, and Cunningham, (2004) reported a research on the effectiveness of the visual multimedia used in the learning environment showed that they can improve learning. Visuals can help raising the reader's interest, curiosity, motivation. promoting creativity, serving as Usage of Multimedia Visual Aids in the English Language Classroom. mental scaffolding and fostering aesthetic appreciation.

Studies carried out by Mukherjee and Roy (2003) have found that the use of multimedia to contextualized spoken speech it's a great help for students, given that they can understand 30% more than without the visual support. Following this path, Canning-Wilson (2000) research suggested that visuals can be used to enhance the meaning of the message conveyed by the speakers as kind of the paralinguistic cues. Another important thing to note is that visuals may help in order to build mental models, and communicate relationships among content objects in a more efficient way than can word alone. According to Canning-

Wilson (1997) the importance of the visual aids is highlighted when focusing on the way language is processed.

Oguz. S, (2006) searched in the effects of the computer-based instruction on the achievements and problem-solving skills of the ESL/EFL students. This is a study based on the pre-test/post-test control group design. The outset of the study to find out the whether the levels of the two groups were equivalent in terms of their achievements and problem-solving skills and the Kolmogorov-Smirnov single sample test to find out whether the data follow a normal distribution and finally, the covariance analysis to evaluate the efficacy of the experimental process. The result of the study reveals that there is a statistically significant increase in the achievements and problem-solving skills of the students in the experimental group that received the computer-based instruction.

Hendrickson. C, Asia. M, Pasquale. A Robinson and M. Rossi-Velasco, (2000), conducted a study in applications of modern technologies aided instruction. They came up with Computer-aided instruction (CAI) offers numerous advantages for education and training when properly designed and implemented. Recent computer developments in hardware and software enhance the effectiveness and reduce the cost of CAI. They reviewed recent developments, using CAI programs designed and developed by the writers as examples. Experience with the use of CAI in a large general contracting and construction management firm is also reported. The survey also concludes that CAI can now be widely adopted for training and education supplements in civil engineering.

Fawwas Al-Abed Al-Haq, Mahmoud Ali, (2007–2010), studied the effect of the computer-based writing instructional EFL program on enhancing the performance of Jordanian secondary school students. They reported that to achieve the objectives of the study the researchers used a pre-post achievement test. The

experiment lasted for two months (16 normal classes).The results of the study revealed statistically significant differences at (α= 0.05) in the students' mean scores of the overall English writing achievement post-test in favor of the experimental group. The results also revealed that there were statistically significant differences at (α= 0.05) due to gender in favor of the female students compared with males. The results further revealed that there was a significant difference at (α = 0.05) among the mean scores of the students' achievement post-test for the discoursal component "content" in favor of the experimental group.

Reina. A, (2004) conducted a survey of the effects of computer-based Learning on struggling EFL college writers. The survey aimed at finding out whether there were significant differences between EFL freshman students exposed to traditional in-class writing instruction depending on the textbook only, and those exposed to a combination of traditional in-class writing instruction and computer-based instruction in their writing achievement. Before instruction, both groups were pre-tested. Both studied the same writing textbook for 12 weeks. In addition, experimental students received online instruction in which they posted their own threads, short paragraphs, stories or poems on the discussion board. They located information related to themes covered in the book from internet sites like "Yahoo movies" and "WebMD". They word-processed their paragraphs and checked their own spelling using MS WORD. At the end of the treatment, both groups were post tested. Results of the paired and independent T-tests and Analysis of covariance are reported.

Bassma. B (2013), conducted a research in the impact of using multimedia technology in teaching English as a second language. The research highlighted the role of using modern technology in teaching English as a second language. It discussed different approaches and techniques which can assist English language

students to improve their learning skills by using technology. Among these techniques are online English language learning websites, computer assisted language learning programs, presentation software, electronic dictionaries, chatting and email messaging programs, listening CD-players, and learning video-clips.
A case study has been done to appreciate the response of typical English language classroom students for using technology in the learning process. Upon this practical study, the research diagnosed the drawbacks and limitations of the current conventional English language learning tools and concluded with certain suggestions and recommendations.

Chan. N and Jeong. B, (2003) studied implementing computer-assisted language learning in the EFL classroom: teachers' perceptions and perspectives.
The aim of the study was to investigate factors affecting English as a foreign language (EFL) teachers' use of computers in their classrooms and to find out EFL teachers' perceptions of computer-assisted language learning (CALL) and ways to improve CALL practice in school settings... The results of the study indicate that the teachers have positive and favorable attitudes toward the use of the computers. They consider computer technology as a useful teaching tool that can enhance ways of teaching by offering students a variety of language inputs and expanding students' learning experiences in real and authentic contexts. It is also reported that external factors such as lack of time, insufficient computer facilities, rigid school curricula and textbooks and lack of administrative support negatively influence the implementation of CALL in the classroom. Internal factors such as teachers' limited computer skills, knowledge about computers and beliefs and perceptions of CALL also seem to significantly affect teachers' decisions on the use of CALL. Based on the findings of the study, implications are made for the effective implementation of CALL in EFL contexts.

Ali Farhan, (2006), report in the study of the use of word processor for teaching writing to EFL learners in King Saud University. It was conducted to explore the effect of using word processor on the development of EFL learners' performance in writing and investigating their attitude towards computer-aided writing
. The results of the study indicated that the experimental group achieved better results in the writing test than the control group did. The study also revealed that members of the experimental group had a positive attitude towards using computer-based writing. Finally, the study concluded that the use of word processor was a functional method for teaching the skill of writing.

Naser (2005) conducted a study to find out how much teachers benefit from computer and the Internet in education and to find a solution for the problems of the availability of this information technology devices in Sudan. The researcher applied the descriptive-analytic method. The subjects of the study consisted of the Education College students of Khartoum University, AlzaeemAlazhari University, Sudan University, and Juba University. The researcher chose a random sample and some educationalists and specialists in the field from each university. It included 116 students (male and female). The questionnaire and the interview were the tools used to collect the data. The results revealed that: 1) using information technology participates in education development, 2) the trained cadre in the mentioned field are not available, 3) this technology is not available widely for institution in order to get benefit out of it and, 4) using the Internet participates in solving problems of the university students, by using it in the system of distance learning.

Abd El Basit (2004) conducted a research to investigate the utilization of PowerPoint presentation in teaching the English language, compared to the traditional method of teaching at secondary level in Carrara Locality- Omdurman -

Sudan. Another purpose was to examine the effect of PowerPoint in immediate and delayed achievement for two groups of second-year secondary school students. Ninety students were selected and divided into two groups. The experimental group and control group consisted of 45 students in each group. The experimental group was taught by the teacher aided by a computer, whereas, the control group was taught without the help of a computer. Each group took 15 teaching hours to complete their task. The results showed that: 1) there was the statistically significant difference between the means of the experimental group and control group in immediate achievement. 2) there was statistically significant differences between means of experimental group and the control group in delayed achievement, in favorof the experimental group.

2.10 Summary

This chapter was provided that with irrefutable evidence, multimedia has revolutionized society in many places around the globe. It is including how English language instruction is taught and delivered. In particular, the computer has become a conduit where people can learn, share and collaborate in ways not possible years before. The chapter was presented a great deal of the success came from preparing both teachers and students to interact and learn in this technological environment. Therefore, when multimedia technology is tackled in EFL teaching and learning as presented in this study, the newly refocused method in teaching will be propelled a long way to making technology and the computer a more rewarding partner in the EFL teaching and learning process.

Chapter Three

Research Methodology

3.0 Introduction

The subject matter of the study stemmed from personal observations over eight years as a university teacher in the field of language teaching. This chapter describes the methods used for data collection, particularly presenting the target subjects, research instruments and methodology for data collection before showing the tools, reliability, validity and content of the test in addition to the teachers and students' questionnaires. It also illustrates the steps used in the study, and concludes with a summary.

3.1 The Methodology

This study is based on two methodologies: The first one is the experimental method, which is conducted with the students' experimental group, and the second method is quantitative in nature, as it is conducted using two questionnaires submitted to two sample of both Sudanese EFL teachers and students.

3.2 Population

As the study focused on investigating the impact of multimedia in improving EFL Sudanese teaching and learning with regard to reading comprehension skills, , it is naturally coped with the attitudes of EFL Sudanese teachers towards such effect in the field of ELT, besides exploring EFL Sudanese learners perceptions and perspectives, too. However, EFL teachers and learners basically represent the population of this study.

3.3 Sampling

The researcher divided the participants of the study into two sample. The first is composed of (50) EFL Sudanese teachers who have several years of experience in the field of ELT with different academic qualifications and professional training. All of them are faculty members in Sudanese universities. They were selected purposefully from three Sudanese universities. The second sample included 50 first year tertiary students at the Sudan International University (SIU) in Khartoum city in Sudan. The cultural random sampling method was used because it was impossible to redistribute students to new classroom sections. All of the participants were of level one in the English language preparatory course.

3.4 The Treatment

This refers to anything done to groups in order to measure its effect. The treatment is not a random experience that the groups might have, but a controlled and international experience such as exposure to a language teaching method especially constructed for the experiment, or materials presented under controlled circumstances i.e. in a language laboratory.

Before the treatment, the researcher proved the homogeneity of the group by conducting a pre-test to the subjects and then comparing their performance on that test. The group is matched against a number of characteristics before being selected as study subjects.

Despite the fact that all the participants were of level one based on the placement test, they sat a reading pre-test to ensure the validity of the placement test, which the English Language Department usually runs at the beginning of each academic year.

3.5 Data Collection Tools

The tools used for collecting data are two questionnaires: The first is designed for Sudanese EFL teachers; and the second is prepared for Sudanese EFL tertiary students beside the students' test.

3.5. 1 Sudanese EFL Teachers' Questionnaire

The questionnaire includes three sections: The first part represents the profile section in which detailed information about the respondents are provided. The second and the third sections are related to two domains containing twenty (20) statements. Such domains aim at testing one of the research hypotheses. The questionnaire is distributed among (50) experienced teachers of English at three different Sudanese Universities: Sudan University of Science and Technology, Sudan International University, and Ahfad University for Women; all selected teachers have been teaching English using multimedia tools. Therefore, their opinions are more reliable given their increasing awareness of the significance and the usefulness of multimedia and technology in the field of EFL.

3.5.2 Sudanese EFL Tertiary Students' Questionnaire

This survey comes in three sections, where the first part addresses the profile section, which mainly focuses on the personal information of the respondents, while the second and third sections focus on two domains containing twenty (20) statements. Each domain aims at testing one of the research hypotheses. The questionnaire is given to fifty (50) students selected from freshmen at the International University of Sudan throughout different colleges as follows: Medicine, Engineering, Economics, Information Technology and Hotels and Travel.

3.5.3 Sudanese EFL Tertiary Students' Test

The reading comprehension test consisting of twenty (12) questions is given to students. Using simple and clear language, the researcher designed the questions carefully so as to present the intended information and help the students provide clear and logic answers in which testing understanding meaning, gist, references and inferences. The Pre and Post-tests have one reading passage, as the researcher developed a reading test which was used twice; one before the study started and another at the end of the study. The purpose of the pre-test was to ensure the equivalence of the experimental group before the study started, while the post-test aimed at assessing the students' abilities to understand texts toward the end of the study, and to compare the results of the experimental group with the results of the two tests. The test, which is deemed as a proficiency assessment, consisted of one passage of four paragraphs with 24 points in total. Students were given 30 minutes to finish the test, which included four parts. There are no half marks, and candidates were scored on a global scale from 1 to 3, then the total score is converted to (24). The passage was divided into for paragraphs (A,B,C and D).. The questions were made to test gist, comprehending text and inferring meaning, gist and multiple choices. The same passage was used in both the pre and post-tests. The questions were multiple choices test (Please read each question carefully and circle (A, B, C or D) that mostly matches your answer) (see appendix 1).

3.6 Teachers' Questionnaire Reliability

The reliability of the questionnaire was calculated by SPSS. The Cronbach's alpha formula was used as follows:

Table (3.1): Reliability Statistics : Teachers' Questionnaire		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Val 0.82	0.91	20

Table (3.1) shows that the value of reliability lies between 0 and 1. The reliability increases according to the increase of alpha value up to 1. Generally, if the alpha value is more than or equal to 0.4, the reliability is considered, and the questionnaire is reliable. In such case; it was found that $\alpha = 0.91$ and this means that the questionnaire has a high reliability.

3.7 Teachers' Questionnaire Reliability

The reliability of the questionnaire was calculated by SPSS. The Cronbach's alpha formula was used as follows:

Table (3.2): Reliability Statistics : Students' Questionnaire		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Val 0.94	0.94	20

Table (3.2) shows that The value of reliability is between 0 and 1. The reliability increases according to the rise of alpha value up to 1. Generally, if the alpha value is more than or equal 0.4, the reliability is considered, hence the questionnaire is reliable. In this case; it was found that $\alpha = 0.94$, and this means that the questionnaire has a high reliability.

3.8 Students' Test Reliability

The reliability of the pre-test was calculated by SPSS, and the Cronbach's alpha was used as follows:

Table (3.3): Reliability Statistics : Test		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Val 0.96	.0.98	12

The table above shows that The value of reliability ranges from 0 to 1, and increase of alpha value up to 1 refers to a high reliability. If the alpha value is more than or equal 0.4, then the survey reliability is attained. In such case, it was found that $\alpha = 0.98$, which means that the questionnaire has a high reliability.

3.9 Validity of the Two Questionnaires & Students' Test

Validity refers to the degree to which a test measures what is supposed to measure. Taking the supervisor's advice, the researcher handed the questionnaire to one Associate professor and five Assistant professors of English language teaching as well as specialists to examine the face, the construct and content validity for the designed instructions, questions, and statements. The phrasing, suitability, thoroughness, and ease of use of the statements were reviewed.

The jurors noted that the questionnaire was convenient to the purpose of the study. Some changes were made in the paraphrasing of some statements; a few statements were deleted and others were added.

The Jurors suggested the following:

A- The researcher should use his own words in designing the test and writing the two questionnaires.

B- The data collection tools should be based on four basic principles, namely:

(a) relevance (b) focus (c) selectivity

(d) organization

C- The statements under each domain should be regrouped so that the related ideas would go together.

D- Both questioners should be divided into domains and so the test into certain questions so that each domain would test one of the research hypotheses.

E- The research should conduct a piloting questionnaire i.e. giving a small number of teachers and students (e.g. five) a piloting copy and asking them to say if any statement was confusing, unclear or incomplete. The teachers and students were also requested to estimate the time needed to answer both questionnaires.

F- A piloting test with a small number of students (e.g. four) should be conducted, and students were asked about their views of the clarity of the questions.

Computationally, validity is the square root of reliability. In the case of teachers' questionnaire the SQRT is (0.91) =0.82 which means that there is a very high validity for the questionnaire.

As to students' questionnaire, the SQRT is (0.94) =0.88 which means that there is a very high validity for the questionnaire. Finally, the students test validity is that the SQRT is (0.98) =0.96 which means that there is a very high validity for the test.

3.10 Data Analysis Procedures

3.10.1 Questionnaires

The two questionnaires, first were designed to be filled online as electronic questionnaire trend and the subjects were provided with a link. Then the rest of questionnaires were distributed to the subjects, and they were requested to fill them out in their free time within a period of three days.

3.10.2 Test

The pre-test reading comprehension was given to the subjects at the beginning of the study. The test was marked, and the obtained scores were tabulated. After that, the subjects did the post-test, following the same procedures of the previous one. Descriptive and interpretive analysis was used to analyze the data gathered through the two questionnaires and tests. The obtained data were analyzed by using basic descriptive statistics and factor analysis using SPSS.

3.11 Pilot Study

In order to check the validity of the questionnaire, the researcher ran a pilot study. Ten (10) copies of the questionnaire were distributed to a number of English language teachers from the English Language Skills Department, Sudan International University. Students were given ten (10) copies of the questionnaire, too. The teachers filled in the questionnaire and wrote down their comments, suggestions, notes and advice at the end of the survey as requested by the researcher. Due to their comments and suggestions, the number of the statements was reduced from thirty in the pilot questionnaire to twenty statements in addition to changing a few statements. The final version of the questionnaire consisted of two parts: The first one involved information about the English language teachers including gender, qualification, nationality and experience. The second part included two sections with ten statements each. Similarly, the students' questionnaire was administered likewise. (See appendix 2 and 3)

As for the test, the pilot study can reveal whether the time allotted for the administration is sufficient or not, and if the topics assigned for the reading comprehension passage are suitable for the subjects. The test was first tried out on (4) students of the group to enable the researcher to make all the necessary

modifications before conducting the main study. Finally, the test was administered to (30) students of English language, who were chosen purposively from the International University of Sudan. The test takers were given two hours to perform the task.

3.12 Questionnaires Procedures

The questionnaires were developed through the following stages:

- Designed by the researcher in consultation with some colleagues.
- Presented to the supervisor for approval.
- Referred to two experts for judgment.
- Piloted in small group of 10 EFL teachers and 10 students.

3.13 Summary

The chapter gave an overview of the methodology used in this study, presenting the necessary information about the population, the sample and how the participants were selected. It also provides a description of the instruments, and concluded with the pilot study.

Chapter Four

Analysis,Results and Discussions

4.0 Introduction

This chapter is concerned with the presentation, analysis, and interpretation of the results obtained from the questionnaire administered to the Sudanese teachers of English who have experience in using multimedia in their teaching at universities and colleges, together with the questionnaire and pre-and post-tests given to the Sudanese tertiary students of EFL at the International University of Sudan.

Part 1: Analysis of Teachers' Questionnaire

Section 1: Teachers' Profile

Table (4.1) Gender: This table classifies the teachers questioned in terms of gender.

Gander	Frequency	Percent (%)
Male	16	32
Female	34	68
Total	50	100

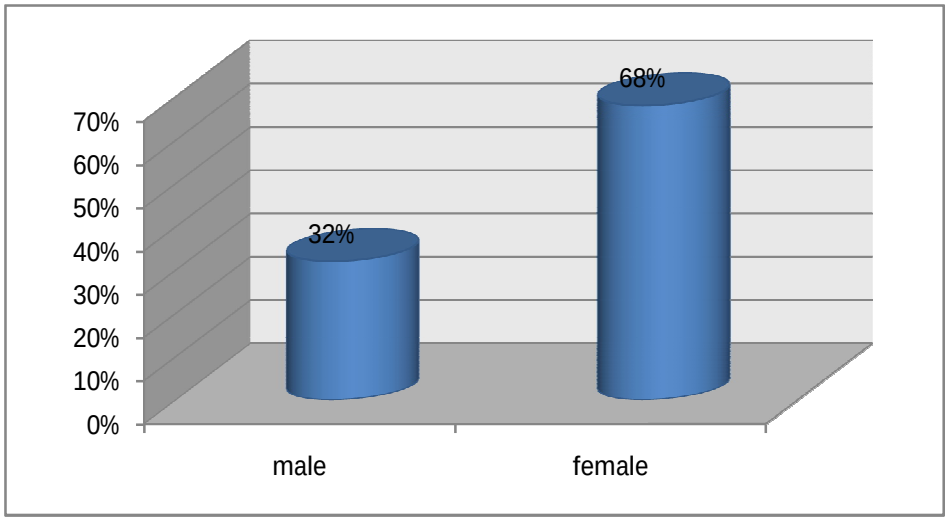


Figure (4.1) Respondents' Gender

Fig (1): The figure above displays the table data in which females (**68**) outnumbered males (**32**) in terms of gender.

Table (4.2) Qualifications: The table below classifies the targeted teachers in terms of their qualifications.

Qualification	Frequency	Percent (%)
PhD	13	26.0
MA	1	2.0
BA	31	62.0
Higher Diploma	5	10.0
Total	50	100.0

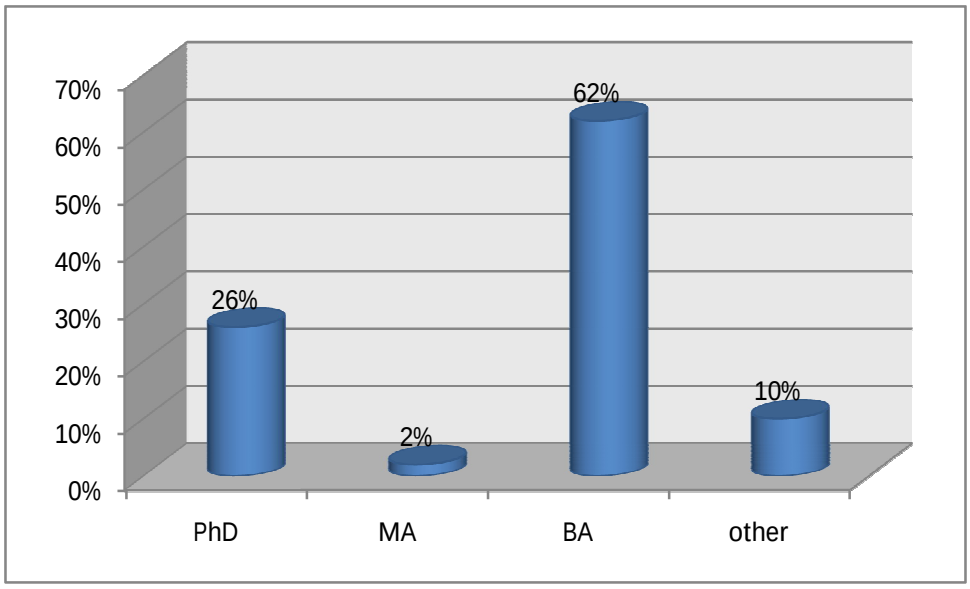


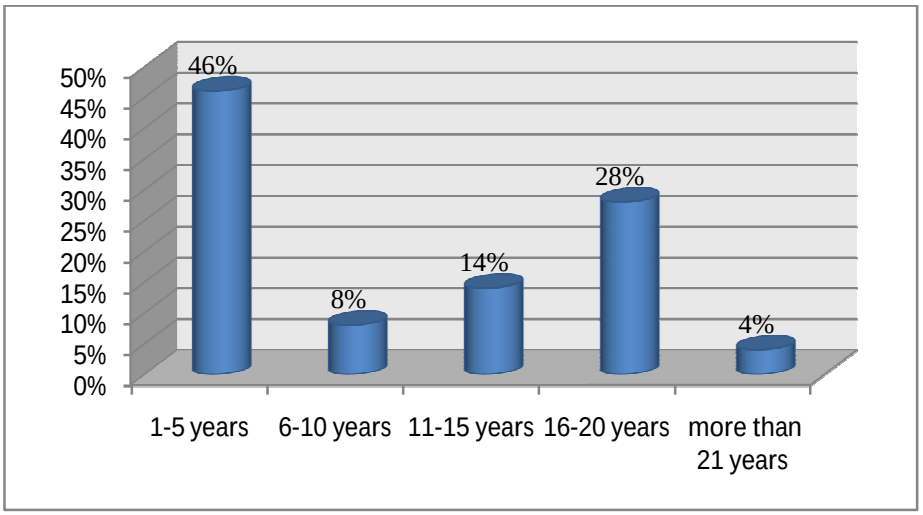
Figure (4.2) Respondents' Qualifications

The figure above illustrates thetabledatawherethe number ofteachers (**31**)holding bachelor degrees is greater than Ph.D. holders (**13**) and MA holders (1) along with higher diploma graduates who are also working as teachers.

Table (4.3) Years of Experience: in Using Technology in Teaching.

Years of experience	Frequency	Percent (%)
1-5 years	23	46.0
6-10 years	4	8.0
11-15 years	7	14.0
16-20 years	14	28.0
more than 21 years	2	4.0
Total	50	100.0

The table (4.3) demonstrates the targeted teachers according to their years of experience of using multimedia in EFL teaching.



Figure(4.3) Respondents experience in Using Multimedia

The figure above shows that (**46%**) of teachers have (1-5) experience with technology in teaching, while only (**8%**) have been using technology in education for (6-10) years. Furthermore, teachers who have more experience with technology in the classroom, (11-15) years, amounted to (**14%**) besides a rather higher percentage of (28%) of teachers with (16-20) years of experience. Only (4%) of instructors have more than (21) years of using technology in teaching.

Section 2: This section of the questionnaire aims at investigating teachers' views about using multimedia in developing reading comprehension skills and its effect in EFL classes as useful tools.

Table (4.4)S1: "I prefer using multimedia in teaching reading skills".

Statement	Frequency	Percent (%)
Strongly disagree	6	12.0
Disagree	5	10.0
Neutral	5	10.0
Agree	18	36.0
strongly agree	16	32.0
Total	50	100.0

At the first glance, it can be seen that teachers' responses displayed in table (4.4) above shows that (32%) strongly agree with the statement, while only (18%) agree. Ten percent assumed a neutral position. Most teachers according to this survey like to use modern technology in teaching reading skills. This majority on the part of the teachers is in line with the second hypothesis of the research that reads, *"Sudanese EFL teachers are enthusiastic about incorporating multimedia in the field of EFL"*.

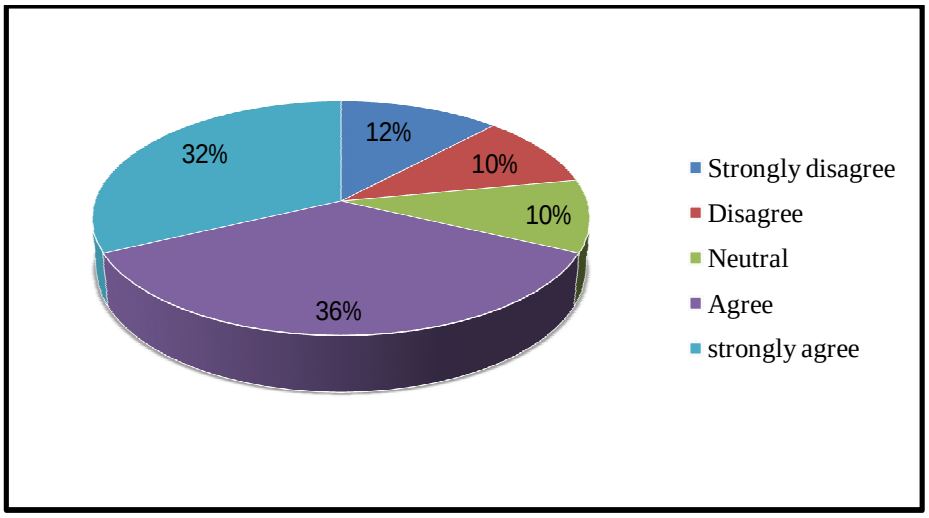


Figure (4.4) I prefer using multimedia in teaching reading skills

This figure reflects the teachers' responses to the statement above. It shows that (**16)** teachers strongly agree with the statement, and (**18)** agree, whereas (**5)** were neutral, another (**5)**disagree and (**6)**strongly disagree with the statement.

Table (4.5) S2: "Multimedia can complicate lesson delivery".

Statement	Frequency	Percent (%)
Strongly disagree	7	14.0
Disagree	7	14.0
Neutral	14	28.0
Agree	15	30.0
strongly agree	7	14.0
Total	50	100.0

The teachers' opinions are shown in table (4.5), where (14%) of the teachers strongly agree with the statement, (30%) agree, (28%) are neutral, (14%) disagree and (14%) strongly disagree. As such, the above statement seems to be highly controversial, as the teachers expressed different attitudes towards it. However, the teachers who agree with the statement, (34%), (14%) strongly agree (30%) outnumber those who disagree (28%).

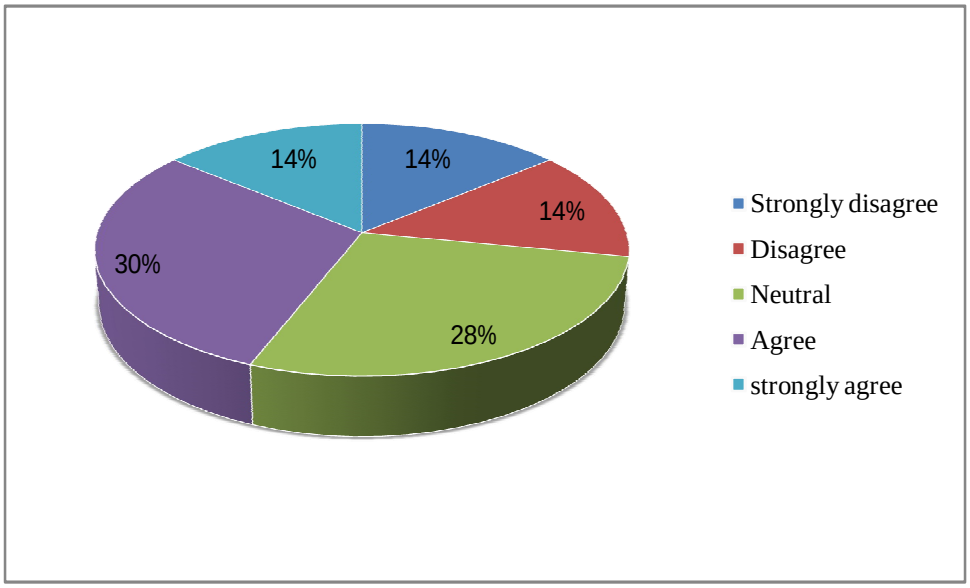


Figure (4.5)

Multimedia can complicate lesson delivery

The figure shows that **14** teachers strongly agree with the statement, and **30** agree, whereas **14** were neutral, **7** disagree and **7** strongly disagree with the statement.

Table (4.6) S3: "My performance is satisfactory when using multimedia in teaching reading skills".

Statement	Frequency	Percent (%)
Strongly disagree	5	10.0
Disagree	4	8.0
Neutral	11	22.0
Agree	17	34.0
strongly agree	13	26.0
Total	50	100.0

The teachers' replies are revealed in table (4.6) showing that (26%) of the teachers strongly agree with the statement (34%), agree (22%) of the teachers are neutral, (8%) disagree, and (10%) strongly disagree. The results indicate that this statement has aroused much controversy, as the teachers' responses range from 'strongly agree' to 'strongly disagree'. Nevertheless, those who agree (56%), (26%) strongly agree (34%) are much more than those who disagree, (18%), (8%) disagree, 10% strongly agree). The researcher thinks that multimedia use satisfies his performance.

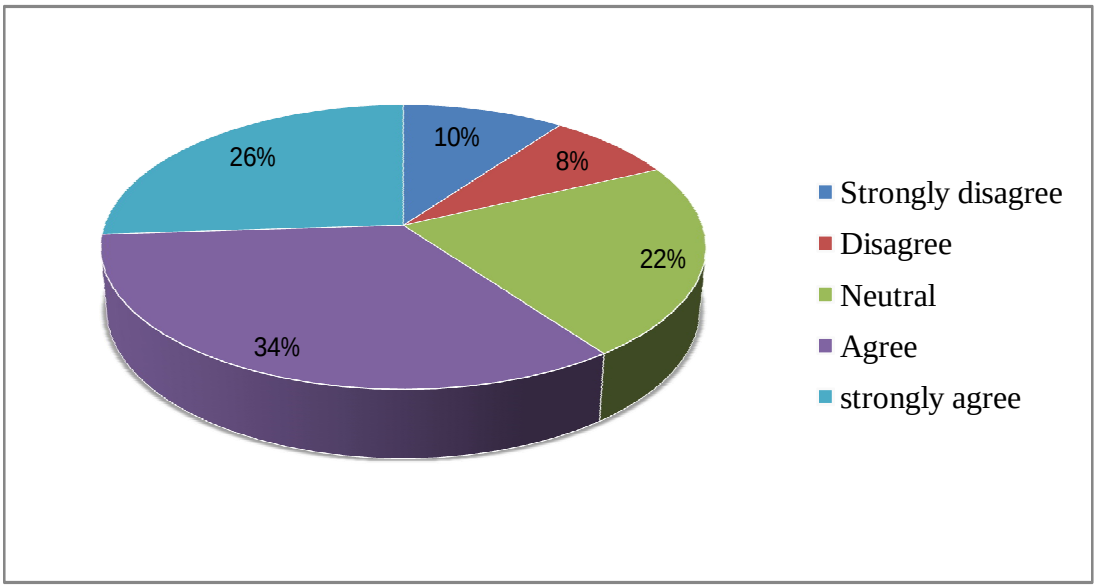


Figure (4.6) My performance is satisfactory when using modern technology in teaching reading skills.

This figure above reveals the teachers' responses to the statement. It shows that **13** teachers strongly agree with the statement, **17** agree, **11** were neutral, **4** disagree and **5** strongly disagree.

Table (4.7) S4: "Adding multimedia to teaching reading skills is time-consuming".

Statement	Frequency	Percent (%)
Strongly disagree	6	12.0
Disagree	14	28.0
Neutral	14	28.0
Agree	7	14.0
strongly agree	9	18.0
Total	50	100.0

The teachers' responsesare grouped in table (4.7) above. The table reveals that (18%) of the teachers strongly agree with the statement (14%), agree (28%) of the teachers are neutral (28%) disagree and (12%) strongly disagree. The fact that the teachers' responses range from'strongly agree' to'strongly disagree' implies that this statement is really divisive.However, those who disagree (30%), (12%) strongly disagree (28%) disagree, do not support the statement. As discussed in the previous statement (4), the researcher would say that "Adding multimedia to teaching reading skills is not time-consuming".

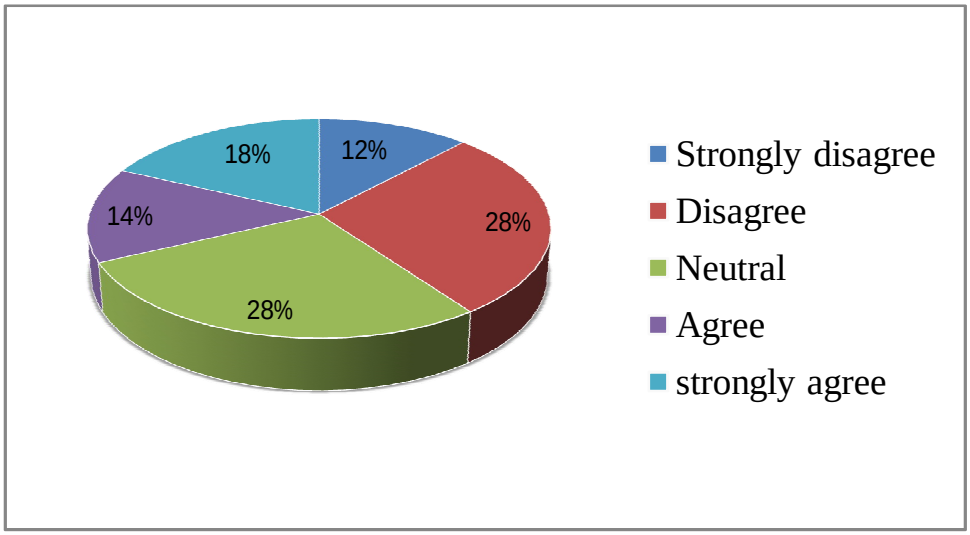


Figure (4.7) Adding multimedia to teaching reading skills is time-consuming.

The figure below reflects the responses of the teachers to this statement. It shows **9** teachers strongly agree with the statement, **7** agree, **14** were neutral, 1**4** disagree and **6** strongly disagree. Nevertheless, most of the teachers are in favor of the idea expressed by the statement.

Table (4.8)S5: "I hesitate to use Microsoft Office program to elicit the general idea of the text".

Statement	Frequency	Percent (%)
Strongly disagree	4	8.0
Disagree	9	18.0
Neutral	16	32.0
Agree	11	22.0
strongly agree	10	20.0
Total	50	100.0

The teachers' responses are collected in table (4.8) above. The table reveals that (20%) of the teachers strongly agree with the statement (22%), agree (32%) of the teachers stay neutral (18%) disagree and (8%) strongly disagree. These results show that the majority of teachers (44%), (20%) strongly agree (22% agree) support the statement.

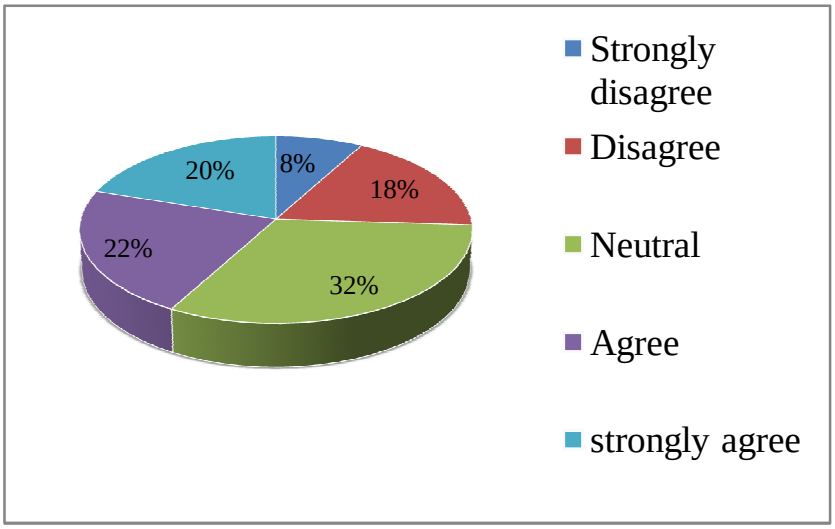


Figure (4.8) I hesitate to use Microsoft Office program to elicit the general idea of the

The figure above reflects the responses of the teachers to the statement. It shows **10** teachers strongly agree with the statement, **11** agree, **16** were neutral, **9** disagree and **4** strongly disagree. The researcher, being hesitant to use Microsoft Word in teaching, adds his voice to those who agree with the statement.

Table (4.9) S6: "PowerPoint helps effectively deliver reading skills lessons".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	3	6.0
Disagree	5	10.0
Neutral	11	22.0
Agree	8	16.0
strongly agree	23	46.0
Total	50	100.0

The teachers' opinions are revealed in table (4.9) above. The table illustrates that (46%) of the teachers strongly agree with the statement (16%) agree, (22%) of the teachers are neutral, (10%) disagree and (6%) strongly disagree. Thus, the results show that this statement is well-supported by (62%), (46%) strongly agree, (16%) agree) Those who agree greatly outnumber those who are against the statement, (16%), (10) disagree and (6%) strongly disagree).

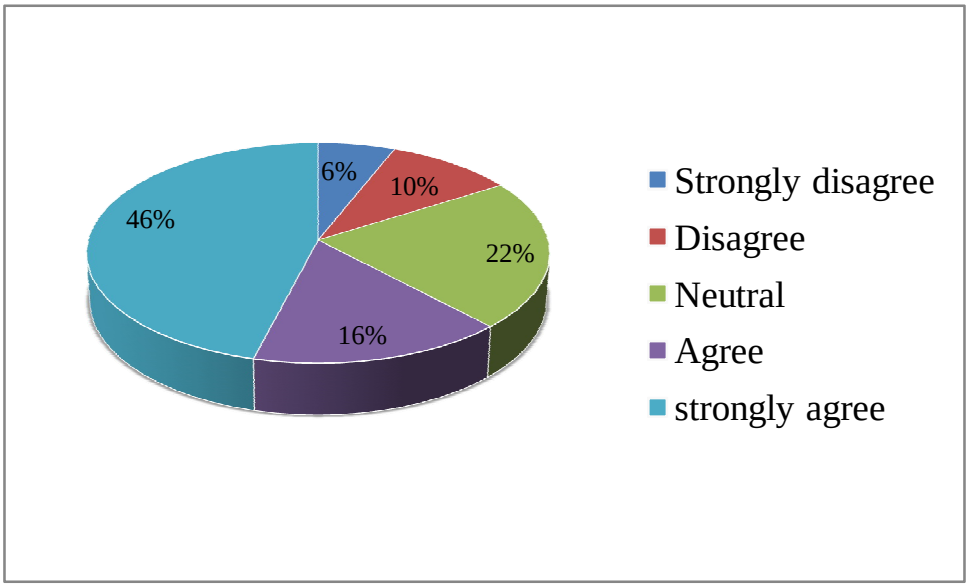


Figure (4.9) PowerPoint helps effectively deliver reading skills lessons

The figure above reflects the responses of the teachers to the statement. It shows **23** teachers strongly agree with the statement, **8** agree, **11** were neutral, **5** disagree and **3** strongly disagree. To the researcher, PowerPoint helps in the delivery of reading skills lessons. Therefore, the researcher adds his voice to those who agree with the statement.

Table (4.10) S7: "Teaching reading skills by using multimedia is highly required".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	2	4.0
Disagree	3	6.0
Neutral	11	22.0
Agree	21	42.0
strongly agree	13	26.0
Total	50	100.0

The teachers' attitudes are shown in table (4.10) above, which demonstrates that (26%) of the respondents strongly agree with the statement (42%), agree (22%) of the teachers are neutral (6%) disagree and (4%) strongly disagree. The results

indicate that the agreement by the teachers represents the majority (68%), (26%) strongly agree, (42%) agree); (10%) disagrees. These results signify the requirement of multimedia in teaching reading skills.

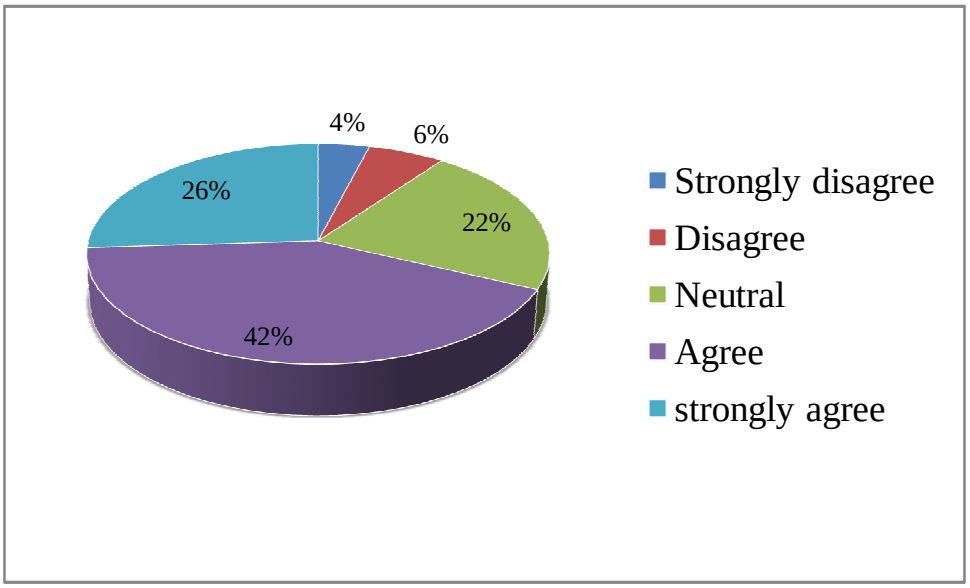


Figure (4.10) Teaching reading skills by using multimedia is highly required.

The figure above reveals the responses of the teachers to the statement. It shows **13** teachers strongly agree with the statement, **21** agree, **11** were neutral, **3** disagree and **2** strongly disagree. As far as the results are concerned, the researcher would safely say that most teachers support the statement that teaching reading skills by using multimedia is required.

Table (4.11) S8: "Using computers, smart boards and projectors motivate EFL learners".

Statement	Frequency	Percent (%)
Strongly disagree	7	14.0
Disagree	7	14.0
Neutral	7	14.0
Agree	10	20.0
strongly agree	19	38.0

Total	50	100.0

The respondents' views are collected in table (4.11) above. The table shows that (38%) of the teachers strongly agree with the statement (20%) agree, (14%) are neutral, (14%) disagree and (14%) strongly disagree. Thus, the majority of the teachers (58%), (38% strongly agree, (20%) are in support of the mentioned statement.

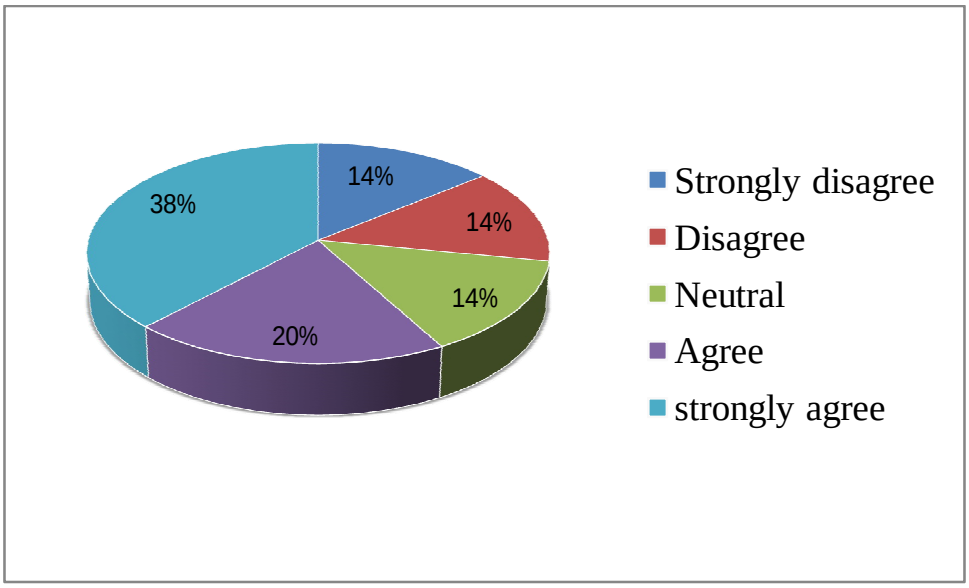


Figure (4.11) Using computer, smart board and projector motivate EFL learners.

The figure above reflects the responses of the teachers to the statement. It shows **19** teachers strongly agree with the statement, **10** agree, **7** were neutral, **7** disagree and **7** strongly disagree. As a result, the researcher would join the teachers as they support this statement that Using computer, smart board and projector motivate EFL learners.

Table (4.12) S9: "Multimedia can develop reading skills".

Statement	**Frequency**	**Percent (%)**
Strongly disagree	4	8.0

Disagree	3	6.0
Neutral	9	18.0
Agree	9	18.0
strongly agree	25	50.0
Total	50	100.0

The teachers' replies are illustrated in table (4.12) above. The table reflects(50%) of the respondents strongly agree with the statement, (18%) agree, (18%) of the teachers are neutral, (6%) disagree and (8%) strongly disagree. These results indicate that the overwhelming majority of the teachers with(68%), (50%) strongly agree and(18% agree) are in favor of the statement.

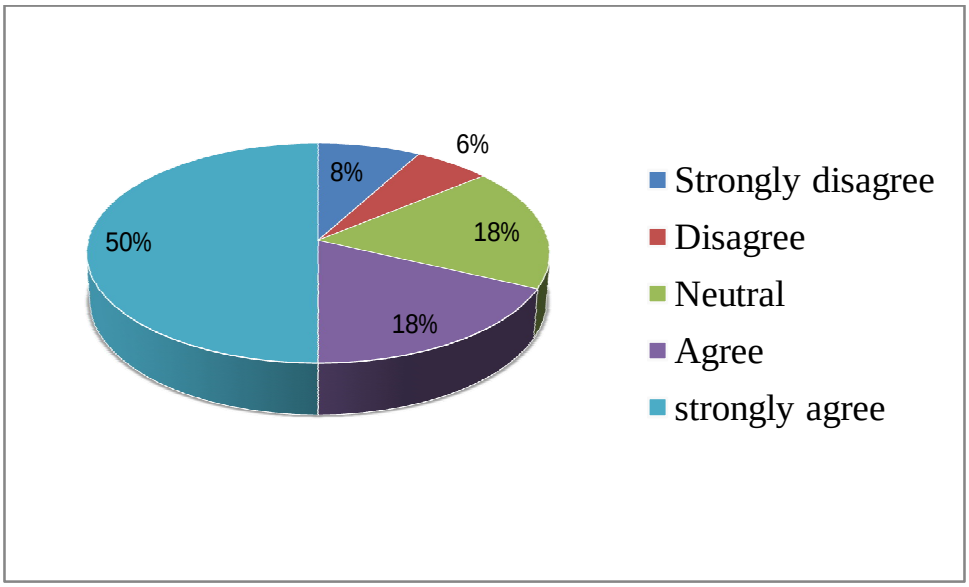


Figure (4.12) Multimedia can develop reading skills.

The figure above reflects the responses of the teachers to the statement. It shows **25** teachers strongly agree with the statement, **9** agree, **9** were neutral, **3** disagree and **4** strongly disagree. Additionally, the researcher believes that Using computer, smart board and projector motivate EFL learners. Like the results of the analysis of teachers' answers to the previous statement (8), these results stress the need for modern technology use in teaching EFL.

Table (4.13)S10: "I am enthusiastic to try the interactive multimedia's tools in EFL classroom".

Statement	Frequency	Percent (%)
Strongly disagree	2	4.0
Disagree	7	14.0
Neutral	17	34.0
Agree	16	32.0
strongly agree	8	16.0
Total	50	100.0

The table (4.13) above shows (16%) of the respondents strongly agree with the statement and(32%) agree.While, (34%) of the teachers are neutral, (14%) disagree and (4%) strongly disagree. The results indicate that this statement is a bit controversial among those surveyed. However, those who agree (48%), (16%) strongly agree and (32%) agree outnumbered those who disagree (18%).

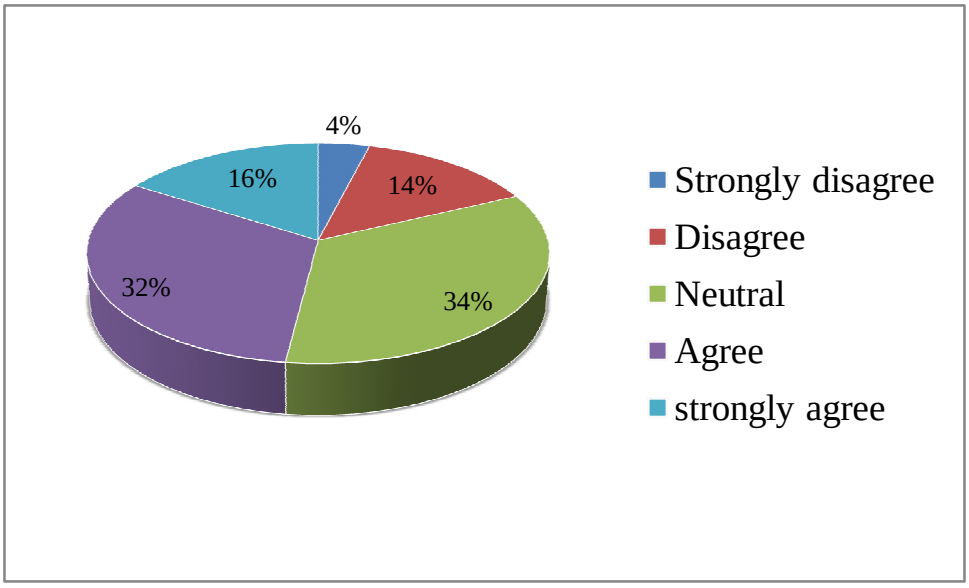


Figure (4.13) I am enthusiastic to try the interactive technology tools in EFL classroom.

The figure above demonstrates the views of the teachers with respect to the statement. It shows that **8** teachers strongly agree with the statement, **16** agree,

17 were neutral, **7** disagree and **2** strongly disagree. As the researcher views it, this statement reinforces the use of technology in teaching and learning of EFL.

Section 3: This section represents the views of teachers regarding their knowledgethe and **skils in adminstering multimedia**. Therefore, each statement tries to explore the teacher's opinions.

Table (4.14) S1: "Trying multimedia is recommended in teaching reading skills".

Statement	Frequency	Percent (%)
Strongly disagree	1	2.0
Disagree	4	8.0
Neutral	11	22.0
Agree	13	26.0
strongly agree	21	42.0
Total	50	100.0

The majority of teachers' replies are illustrated in table (4.14) above. The table shows (42%) of the teachers strongly agree with the statement and(26%) agree, whereas, (22%) of the teachers are neutral.(8%) disagree and (2%) strongly disagree. These results indicate that the majority of the teachers (68%), (42%) strongly agree (26% agree) are in favor of the statement.

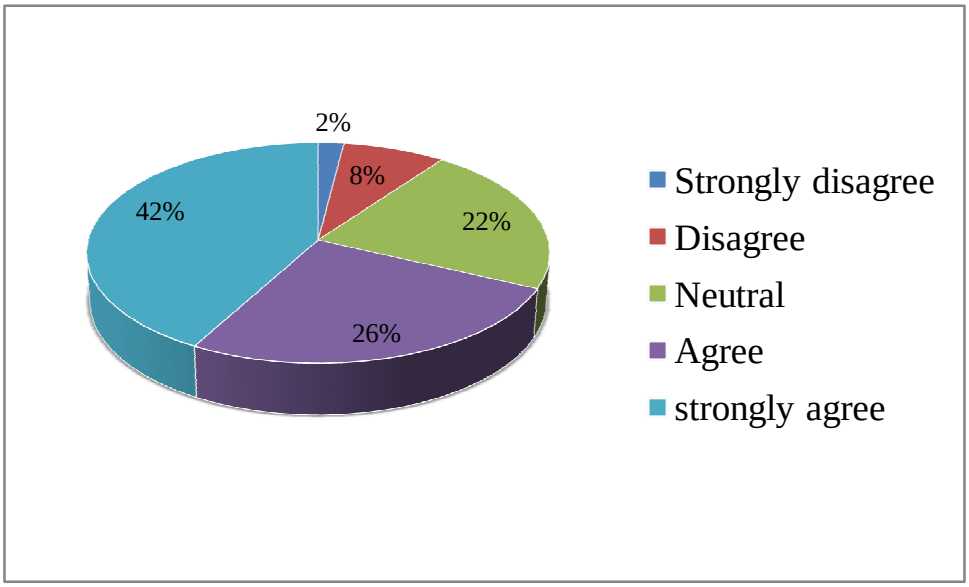


Figure (4.14) Trying multimedia is recommended in teaching reading skills.

The figure above reflects the responses of the teachers to the statement. It shows **21** teachers strongly agree with the statement, **13** agree, **11** were neutral, **4** disagree and **1** strongly disagrees. As such, this statement reinforces the use of technology in teaching reading skills.

Table (4.15) S2: "Developing using multimedia knowledge is required".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	4	8.0
Disagree	2	4.0
Neutral	9	18.0
Agree	14	28.0
strongly agree	21	42.0
Total	50	100.0

The teachers' responses are displayed in table (4.15) above. The table shows that (42%) strongly agree with the statement and (28%) agree, whereas (18%) were neutral, (4%) disagree and (8%) strongly disagree. Thus, the respondents almost agree that developing using multimedia knowledge is required. This

absolute unanimity on the part of the teachers is in line with the second hypothesis of the research.

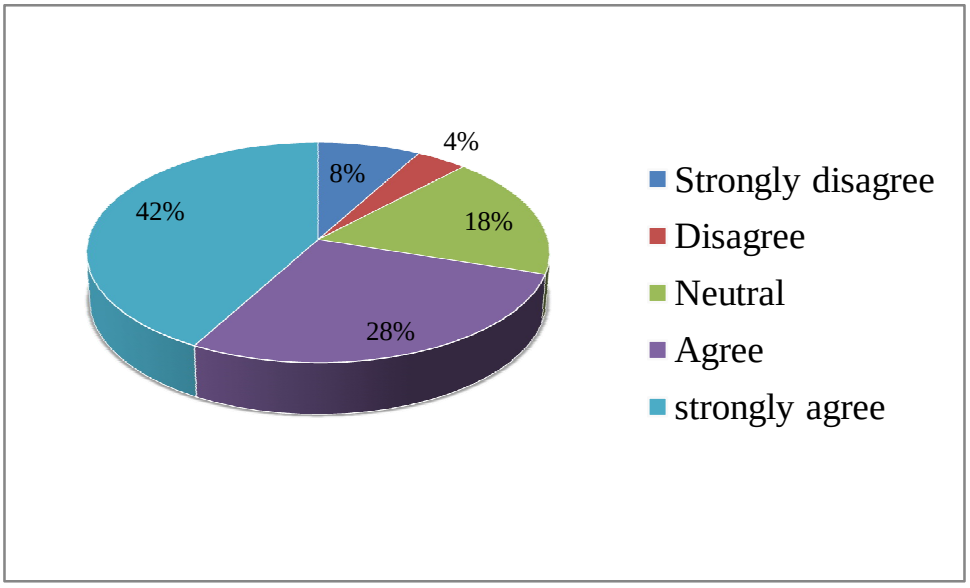


Figure (4.15) Developing using multimedia knowledge is required.

The result in the above figure shows the responses of the teachers where **21** strongly agree and 14agree, **9** are neutral, **2** disagree and **4** strongly disagree. Thus, these responses successfully support this statement.

Table (4.16)S3: "Computer applications can be utilized in teaching reading skills".

Statement	Frequency	Percent (%)
Strongly disagree	7	14.0
Disagree	4	8.0
Neutral	10	20.0
Agree	16	32.0
strongly agree	13	26.0
Total	50	100.0

The respondents' opinions are shown in table (4.16). The table shows that the percentage reaches (26%) of the teachers strongly agree with the statement, (32%) agree. While,(20%) are neutral, (8%) disagree and (14%) strongly disagree. As

such, the above statement seems to be very controversial, as the teachers expressed different attitudes towards it. However, the teachers who agree with the statement (58%), (26%) strongly agree, (32%) agree) outnumber those who disagree, (22%). “Computer applications can be utilized in teaching reading skills”.

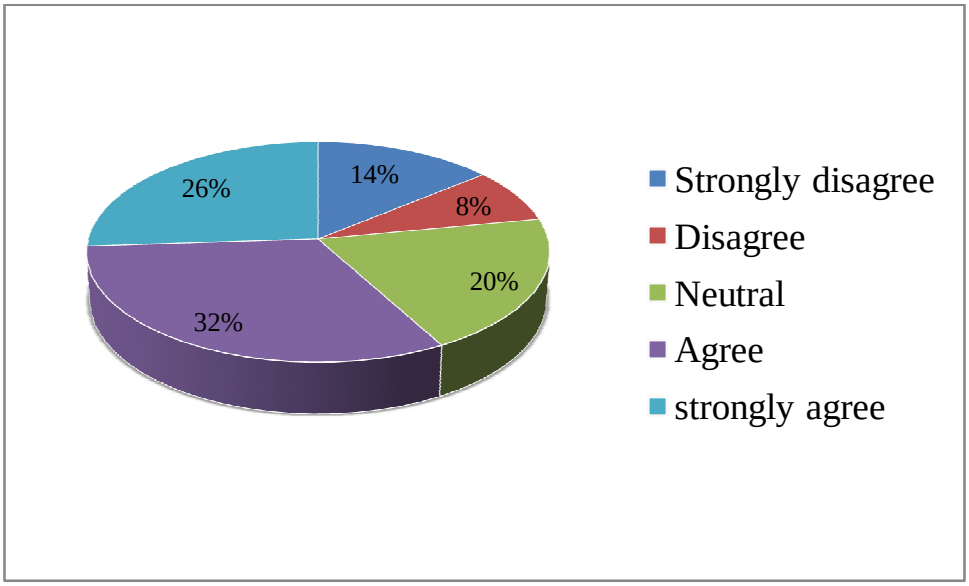


Figure (4.16) Computer applications can be utilized in teaching reading skills.

The figure above reflects the responses of the teachers to the statement. It shows **13** teachers strongly agree with the statement, **16** agree, **10** were neutral, **4** disagree and **7** strongly disagree. As a result, the researcher adds his view to the teachers as they support this statement that Computer applications can be utilized in teaching reading skills.

Table (4.17) S4: "EFL teachers are capable of administeringPowerPoint Presentations".

Statement	Frequency	Percent (%)
Strongly disagree	3	6.0
Disagree	9	18.0
Neutral	9	18.0
Agree	17	34.0
strongly agree	12	24.0
Total	50	100.0

The teachers' views are gathered in table (4.17) above. The table shows that(24%) of the teachers strongly agree with the statement and(34%) agree. Incontrary, (18%) of the teachers are neutral.(18%)of respondents are disagree and (6%) strongly disagree. Despite the fact that the teachers expressed different opinions about this statement, most of them with the rate of (58%), (24%) strongly agree, (34% agree) support the statement. The researcher thinks that the abundance of computer and multimedia stimulates EFL teachers to use them in their teaching.

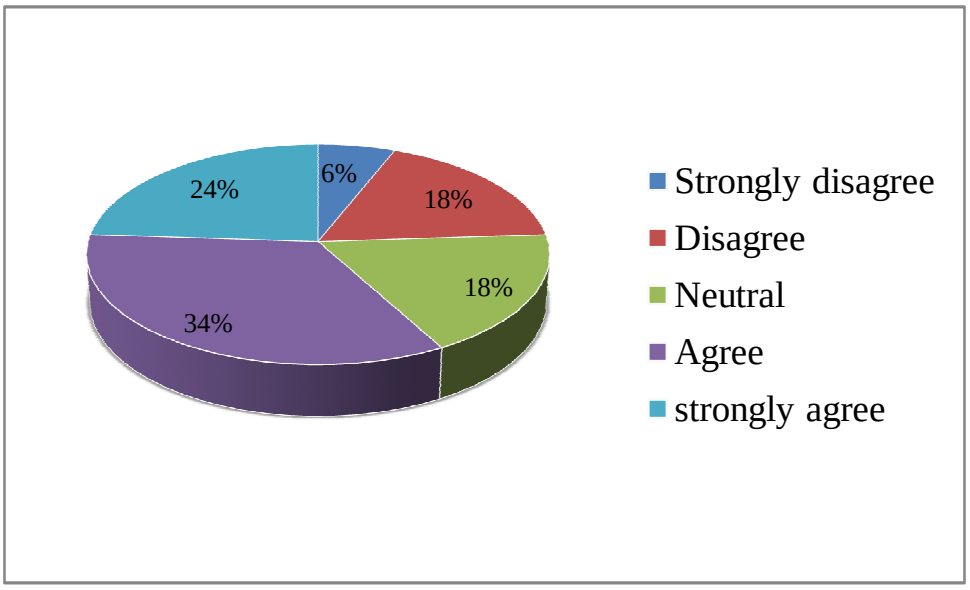


Figure (4.17) EFL teachers are capable of administering Power Point Presentations

The figure above reflects the responses of the teachers to the statement. It shows **12** teachers strongly agree with the statement, **17** agree, **9** were neutral, **9** disagree and **3** strongly disagree. As far as the results are concerned the researcher would safely say that the majority of teachers support this statement as they are capable of administering PowerPoint presentation.

Table (4.18) S5: "EFL teachers are prepared to use smart board to teach reading skills".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	4	8.0
Disagree	6	12.0
Neutral	12	24.0
Agree	15	30.0
strongly agree	13	26.0
Total	50	100.0

Thetable (4.18) above shows that (26%) of the respondentsare strongly agree with the statement and(30% agree).(24%) of the teachers are neutral. Whereas, (12%) disagree and (8%) disagree. It is clear that despite the controversy created by this statement, most of the teachers, 56% (26% strongly agree, 30% agree) hold the same view expressed by the statement.

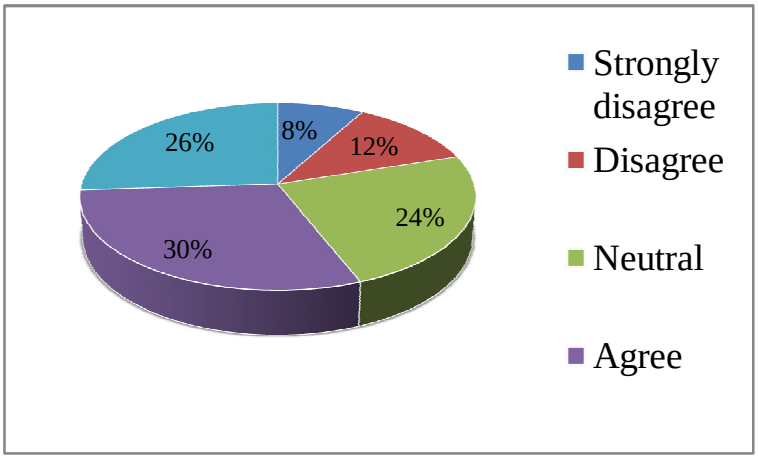


Figure (4.18) EFL are teachers prepared to use smart board to teach reading skills.

The figure above reflects the responses of the teachers to the statement. It shows **13** teachers strongly agree with the statement, **15** agree, **12** were neutral, **6** disagree and **4** strongly disagree. These results indicate the fact that EFL teachers are prepared to use smart board to teach reading skills.

Table (4.19) S6: "EFL teachers are prepared to use in focus projector to teach reading skills".

Statement	Frequency	Percent (%)
Strongly disagree	2	4.0
Disagree	7	14.0
Neutral	9	18.0
Agree	16	32.0
strongly agree	16	32.0
Total	50	100.0

The teachers' answers are shown in table (4.19) above. The table shows that the majority of teachers with rate of (32%) are strongly agree with the statement.(32%) of them are agree.(18%) of the teacher are neutral. While,(14%)are disagree and (4%) strongly disagree. Thus, the teachers' agreement with this statement is almost unanimous, 64% (32% strongly agree, 32% agree) agree about the statement.

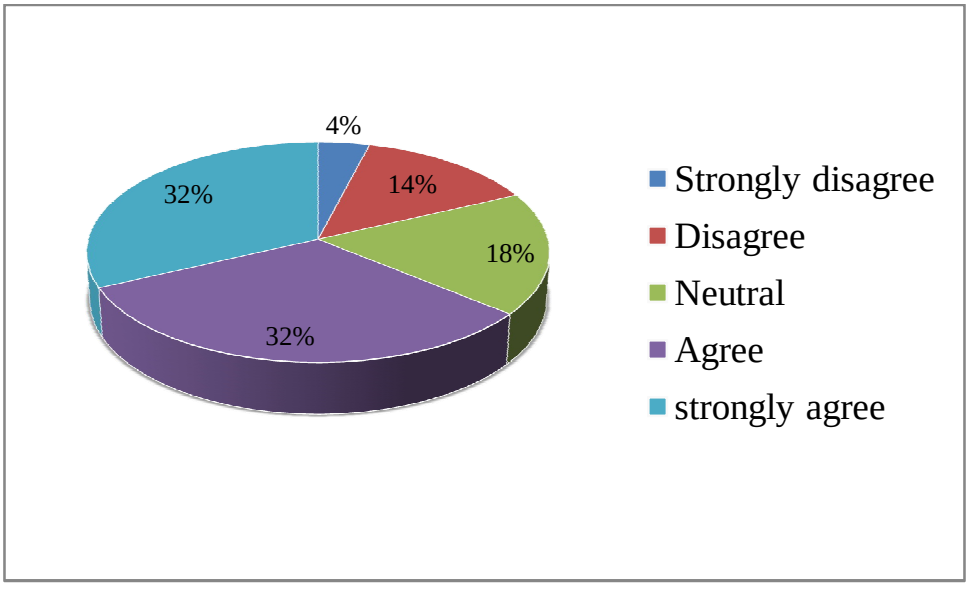


Figure (4.19) EFL teachers prepared to use in focus projector to teach reading skills.

The figure above reflects the responses of the teachers to the statement. It shows **16** teachers strongly agree with the statement, **16** agree, **9** were neutral, **7** disagree and **2** strongly disagree. The results indicate that EFL is prepared to use in focus projector to teach reading skills.

Table (4.20)S7: "EFL teachers prepared to use computer to teach reading skills".

Statement	Frequency	Percent (%)
Strongly disagree	2	4.0
Disagree	14	28.0
Neutral	5	10.0
Agree	15	30.0
strongly agree	14	28.0
Total	50	100.0

Thetable (4.20) above shows that a considerable number of respondents (28%)are strongly agree with the statement and(30%) agree.(10%) of the teachers are neutral, (28%) disagree and (4%) disagree. It is clear that despite the controversy created by this statement, most of the teachers, (58%), (28%) strongly agree, (30% agree) hold the same view expressed by the statement.

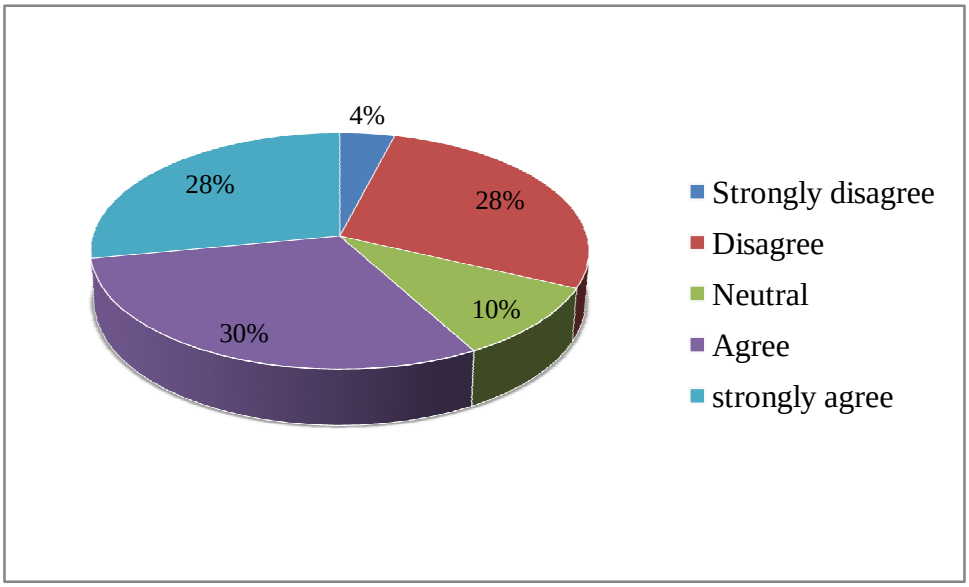


Figure (4.20) EFL teachers prepared to use computer to teach reading skills.

The above figure reflects the responses of the teachers to the statement. It shows **14** teachers strongly agree with the statement, **15** agree, **5** were neutral, **14** disagree and **2** strongly disagree. The results indicate that EFL is prepared to use computer to teach reading skills.

Table (4.21) S8: "Adding Multimedia enhances EFL learning environment".

Statement	Frequency	Percent (%)
Strongly disagree	0	0
Disagree	6	12.0
Neutral	15	30.0
Agree	16	32.0
strongly agree	13	26.0
Total	50	100.0

The teachers' opinions are tabulated in table (4.21) above. The table shows that (26%) of the respondents strongly agree with the statement and(32%) agree.(30%) of the teachers are neutral. While,(12%) disagree and (0%) are disagree. It is clear that despite the controversy created by this statement, most of the teachers, (58%),

(26%) strongly agree, (32% agree) hold the same view expressed by the statement. Therefore this hypothesis is successfully verified.

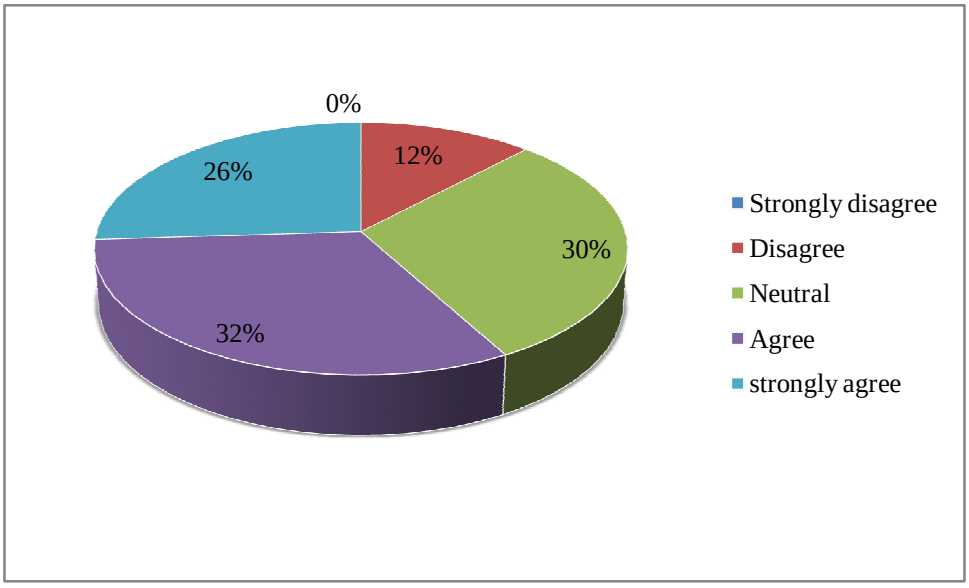


Figure (4.21) Adding multimedia enhances EFL learning environment.

The above figure reflects the responses of the teachers to this statement. It shows **13** teachers strongly agree with the statement, **16** agree, **15** were neutral, **6** disagree and **0** strongly disagree. This figure indicates that adding modern technology enhances EFL learning environment. Consequently, this hypothesis is successfully verified.

Table (4.22) S9: "Multimedia use stimulates EFL learners".

Statement	Frequency	Percent (%)
Strongly disagree	3	6.0
Disagree	13	26.0
Neutral	9	18.0
Agree	13	26.0
strongly agree	12	24.0
Total	50	100.0

Thetable (4.22) reflectss that (24%) of the respondentssare strongly agree with the statement and(26%) are agree.(18%) are neutral.(26%)are disagree and (6%) strongly disagree. As such, the above statement seems to be very controversial, as the teachers expressed different attitudes towards it. However, the teachers who agree with the statement 50% (24% strongly agree, 26% agree) outnumber those who disagree, (32%). “Modern technology use stimulates EFL learners”.

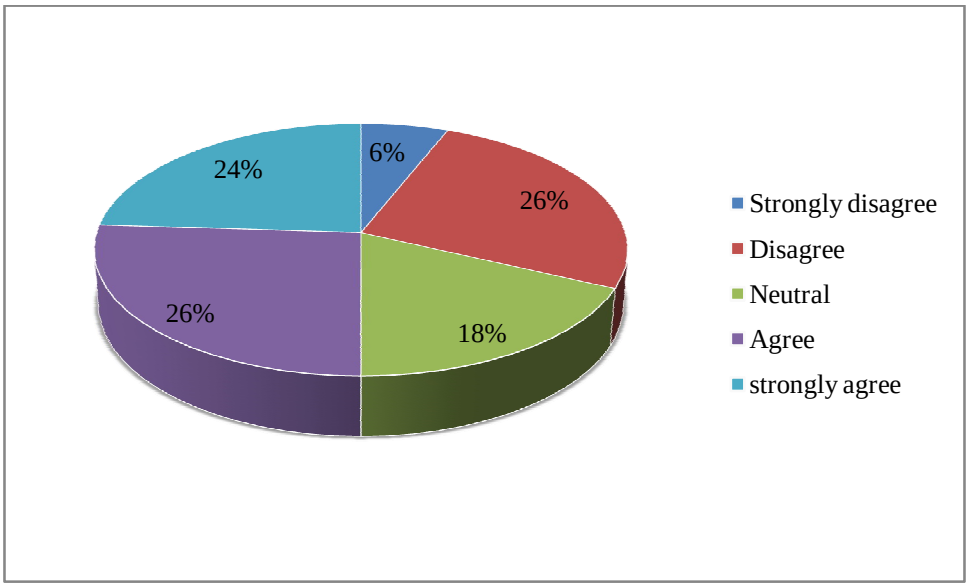


Figure (4.22) Multimedia use stimulates EFL learners.

The figure above reflects the responses of the teachers to this statement. It shows **12** teachers strongly agree with the statement, **13** agree, **9** were neutral, **13** disagree and **3** strongly disagree. These results support the fact that modern technology use stimulates EFL learners.

Table (4.23)S10: "Multimedia use keeps EFL teaching up to date".

Statement	Frequency	Percent (%)
Strongly disagree	7	14.0
Disagree	6	12.0
Neutral	10	20.0
Agree	13	26.0
strongly agree	14	28.0
Total	50	100.0

As it can be seen fromtable (4.23),the table reflects that (28%) of the teachers strongly agree with the statement, (26%) agree, (20%) are neutral, (12%) disagree and (14%) strongly disagree. As such, the above statement seems to be very controversial, as the teachers expressed different attitudes towards it. However, the teachers who agree with the statement (54%), (28%) strongly agree, 26% agree) outnumber those who disagree, (16%). "Modern technology use keeps EFL teaching up to date".

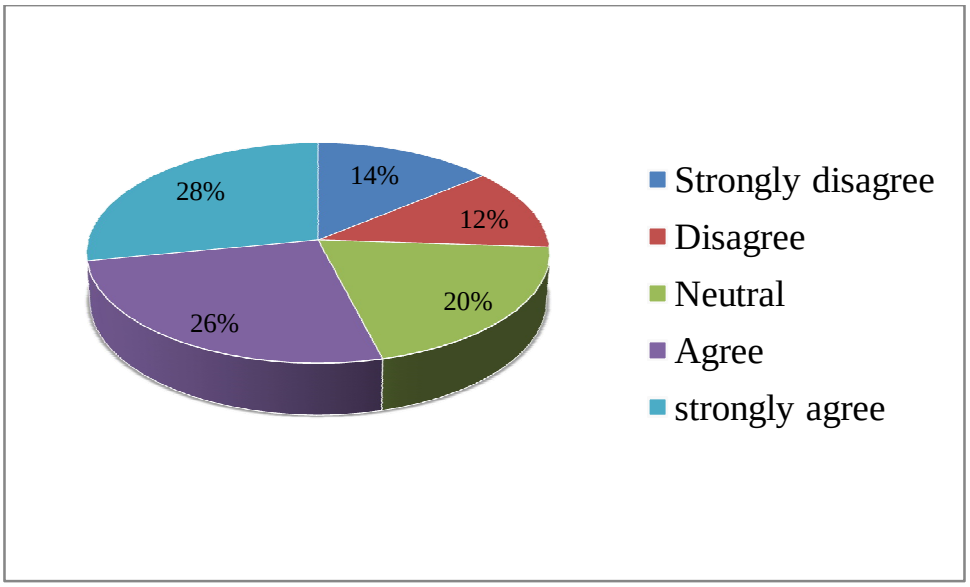


Figure (4.23) Multimedia use keeps EFL teaching up to date.

The figure above reflects the responses of the teachers to this statement. It shows **14** teachers strongly agree with the statement, **13** agree, **10** were neutral, **6** disagree

and **7** strongly disagree. These results support the fact that modern technology use keeps EFL teaching up to date.

Part 2: The Analysis of Students' Questionnaire

Section 1:Students' Profile

Table (4.24) Gender

Gender	Frequency	Percent (%)
male	21	42.0
female	29	58.0
total	50	100.0

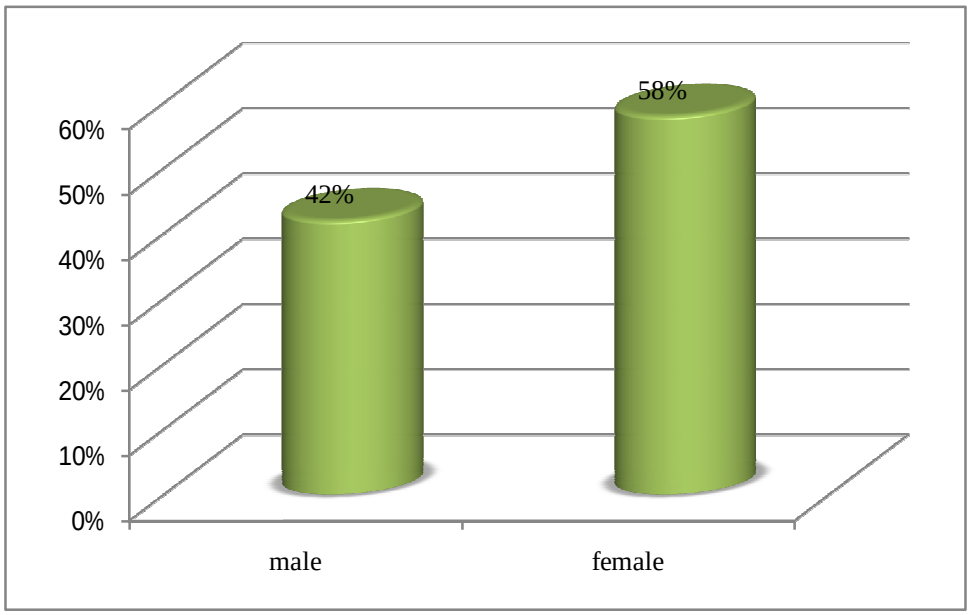


Figure (4.24) Respondents' Gender

The figure above displays the table data in which males (**29**) outnumbered females (**21**) in terms of gender.

Section 2: This section of the questionnaire *domain2* aims at investigating students' views about using multimedia in developing reading comprehension skills and its effect in EFL classes. In this context, each statement seeks to find out the teachers ' views about the idea it carries.

Table (4.25) S1: "Computer, smart board, and projector make the reading passage understandable".

Statement	Frequency	Percent (%)
Strongly disagree	2	4.0
Disagree	1	2.0
Neutral	4	8.0
Agree	12	24.0
strongly agree	31	62.0
Total	50	100.0

The students' answers are shown in table (4.25) above. The table presents that (62%) of the respondents strongly agree with the statement, (24%) agree, (8%) of the students are neutral, (2%) disagree and (4%) strongly disagree. Thus, the students' agreement with this statement is almost unanimous, (86%), (62%) strongly agree, (24% agree) agree about the statement. In fact, only three students disagree.

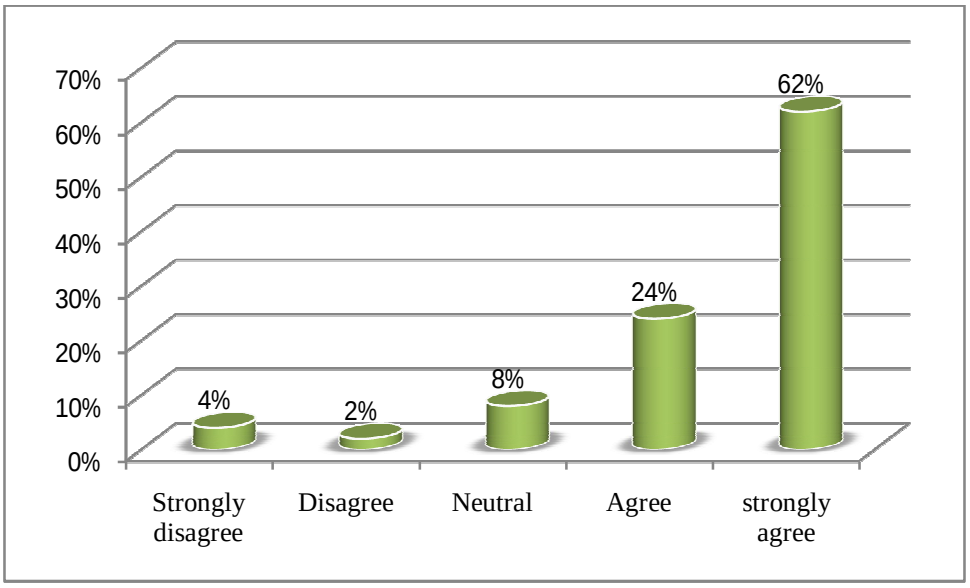


Figure (4.25) Computer, smart board, and projector make the reading passage understandable.

The figure above reflects the responses of the students to this statement. It shows **31** students strongly agree with the statement, **12** agree, **4** were neutral, **1**disagrees and **2** strongly disagree. These results support the fact that computer, smart board, and projector make the reading passage understandable.

Table (4.26)S2: "Computer programs help to get the meaning from texts easily".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	2	4.0
Disagree	2	4.0
Neutral	10	20.0
Agree	15	30.0
strongly agree	21	42.0
Total	50	100.0

As thetable (4.26) demonstratesthat(42%) of the students are strongly agree with the statement (30%) agree.(20%) of the students are neutral. Whereas,(4%) disagree and (4%) strongly disagree. Thus, the students' agreement with this

statement seems to be unanimous, (72%), (42%) strongly agree, (30%) agree about the statement. In fact, only four teachers disagree.

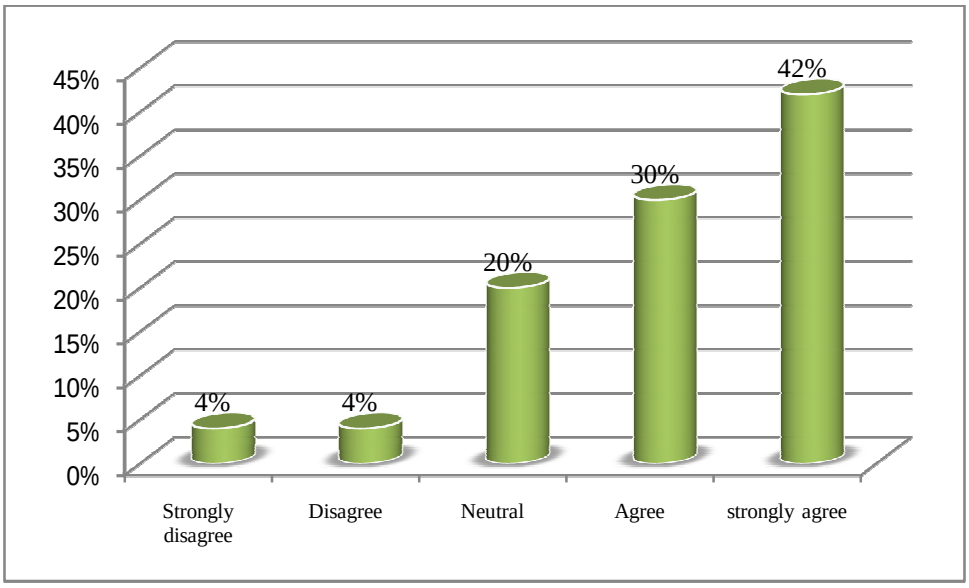


Figure (4.26) Computer programs help to get the meaning from texts easily.

The above figure reflects the responses of the students to the this statement. It shows **21** students strongly agree with the statement, **15** agree, **10** were neutral, **2** disagree and **2** strongly disagree. These results support the fact that computer programs help to get the meaning from texts easily.

Table (4.27)S3: "Smart board helps to scheme texts in short time".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	2	4.0
Disagree	4	8.0
Neutral	12	24.0
Agree	10	20.0
strongly agree	22	44.0
Total	50	100.0

The students' replies are tabulated in table (4.27) above. The table displays that(44%) strongly agree with the statement, (20%) agree, (24%) are neutral, (8%)

disagree and (4%) strongly disagree. Thus, a reasonable number of students (64%) (44% strongly agree, 20% agree) are in support of the statement.

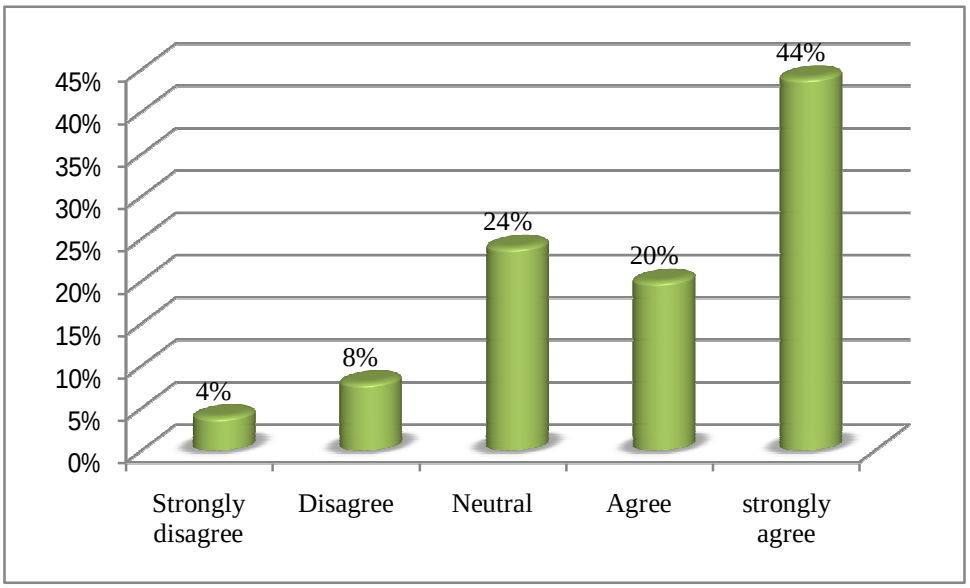


Figure (4.27) Smartboard helps to scheme the texts in short time.

The figure above shows the responses of the students to this statement. It shows **22** students strongly agree with the statement, **10** agree, **12** were neutral, **4** disagree and **2** strongly disagree. These results stress the importance of smart board in scheming the reading texts.

Table (4.28)S4: "In focus, projector makes the reading passage more attractive"

Statement	Frequency	Percent (%)
Strongly disagree	2	4.0
Disagree	5	10.0
Neutral	5	10.0
Agree	18	36.0
strongly agree	20	40.0
Total	50	100.0

As it can be seen fromtable (4.28),. the table shows that (40%) of the students strongly agree with the statement, (36%) agree, (10%) of the teacher are neutral,

(10%) disagree and (4%) strongly disagree. Thus, the student's responses to this statement are unanimous, (76%), (40%) strongly agree, (36%) agree) agree about the statement.

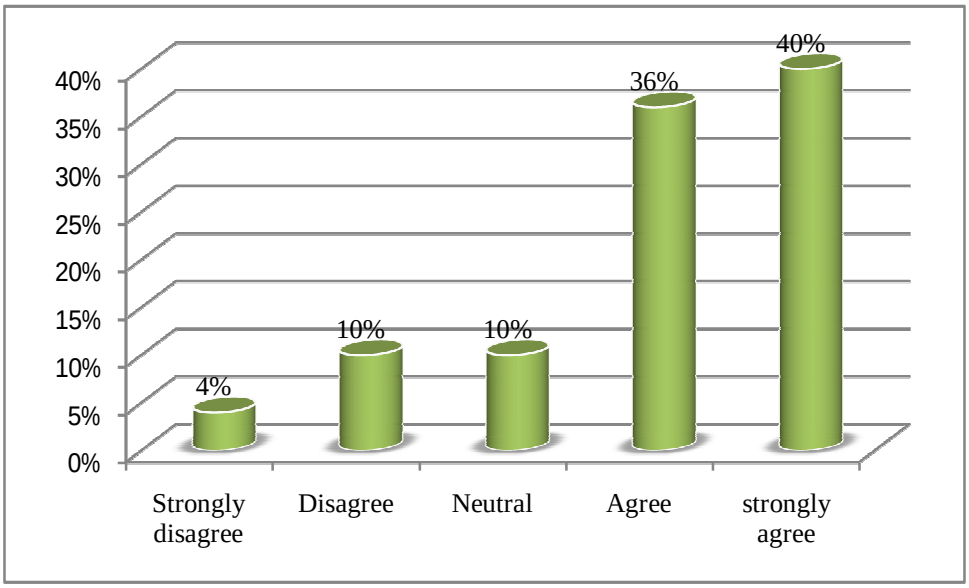


Figure (4.28) In-focus projector makes the reading passage attractive

The above figure indicates the responses of the students to this statement. It shows **20** students strongly agree with the statement, **18** agree, **5** were neutral, **5** disagree and **2** strongly disagree. These results reflect the effectiveness of in focus projector in reading passages.

Table (4.29)S5: "Computer is helpful in developing EFL reading skills".

Statement	Frequency	Percent (%)
Strongly disagree	-	-
Disagree	5	10.0
Neutral	3	6.0
Agree	15	30.0
strongly agree	27	54.0
Total	50	100.0

The students ' attitudes are tabulated in table (4.29) above.The table reveals that (54%) of the students strongly agree with the statement, (30%) agree, (6%) are

neutral, (10%) disagree and (0%) strongly disagree. Thus, this absolute consensus by the teachers is in complete agreement with the above statement.

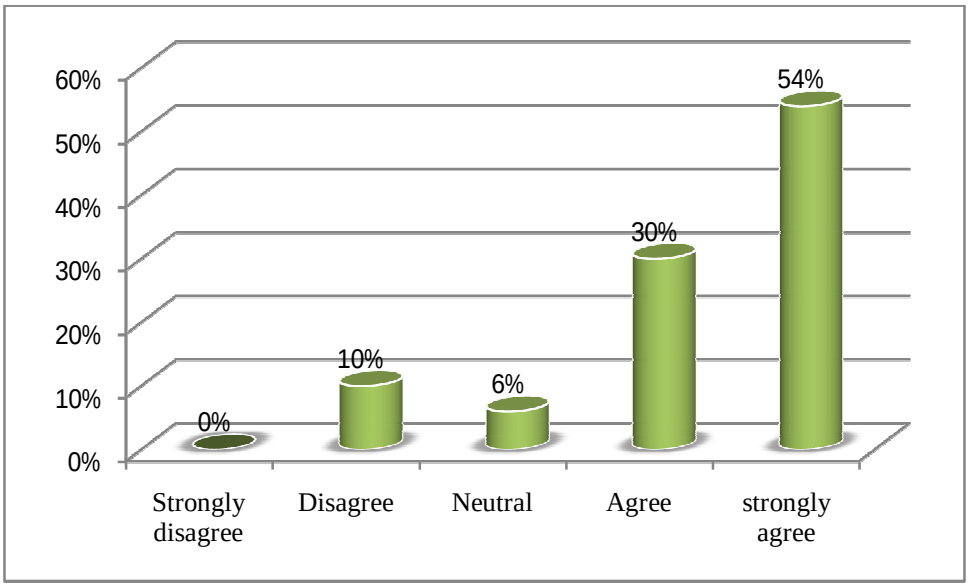


Figure (4.29) Computer is helpful in developing EFL reading skills.

The figure above shows the responses of the students to the this statement. It shows **27** students strongly agree with the statement, **15** agree, **3** were neutral, **5** disagree and **0** strongly disagree. These results stress the necessity of computer in developing EFL reading skills.

able (4.30)S6: "Using computer, smart board and projector help accomplish reading comprehension exercises".

Statement	Frequency	Percent (%)
Strongly disagree	1	2.0
Disagree	3	6.0
Neutral	15	30.0
Agree	17	34.0
strongly agree	14	28.0
Total	50	100.0

The table (4.30) displays that (28%) of the respondents strongly agree with the statement, (34%) agree, (30%) are neutral, (6%) disagree and (2%) strongly disagree. As such, the above statement seems to be controversial, as the students expressed different attitudes towards it. However, the teachers who agree with the statement (62%), (28%) strongly agree, (34% agree) outnumber those who disagree, (8%). “Using computer, smart board and projector help accomplish reading comprehension exercises”.

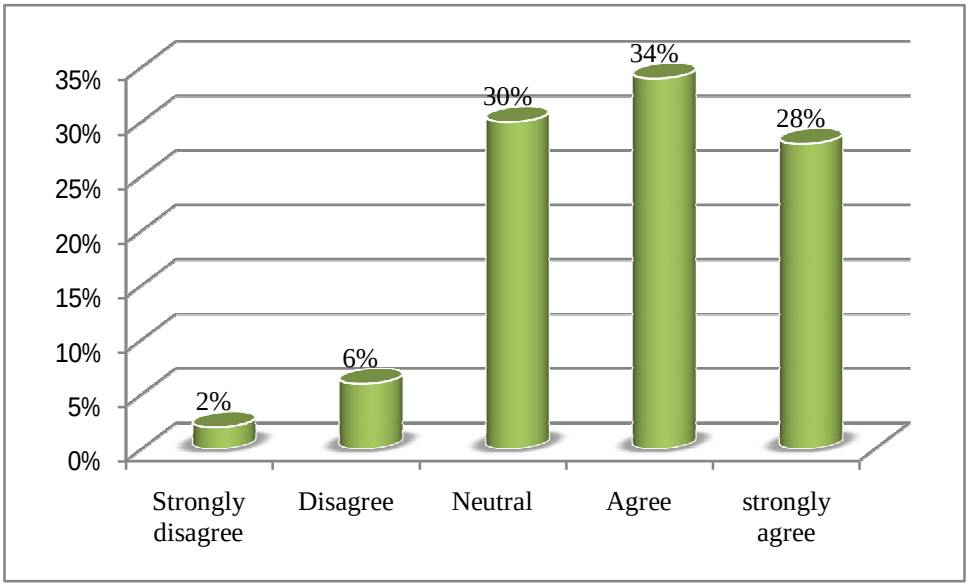


Figure (4.30) Using computer, smart board and projector help accomplish reading comprehension exercises.

The above figure indicates the responses of the students to the this statement. It shows **14** students strongly agree with the statement, **17** agree, 1**5** were neutral, **3** disagree and **1** strongly disagrees. These results reflect the effectiveness of a computer, smart board, and projector in accomplishing reading comprehension exercises.

Table (4.31)S7: "Multimedia increases students' interest in reading comprehension lesson".

Statement	Frequency	Percent (%)
Strongly disagree	4	8.0
Disagree	2	4.0
Neutral	5	10.0
Agree	21	42.0
strongly agree	18	36.0
Total	50	100.0

The students' answers are shown in table (4.31) above. The table demonstrates that(36%) of the respondents strongly agree with the statement, (42%) agree, (10%) of the students are neutral, (4%) disagree and (8%) strongly disagree. Thus, the students' responses to this statement are unanimous, (78%), (36% strongly agree, (42%) agree) agree about the statement.

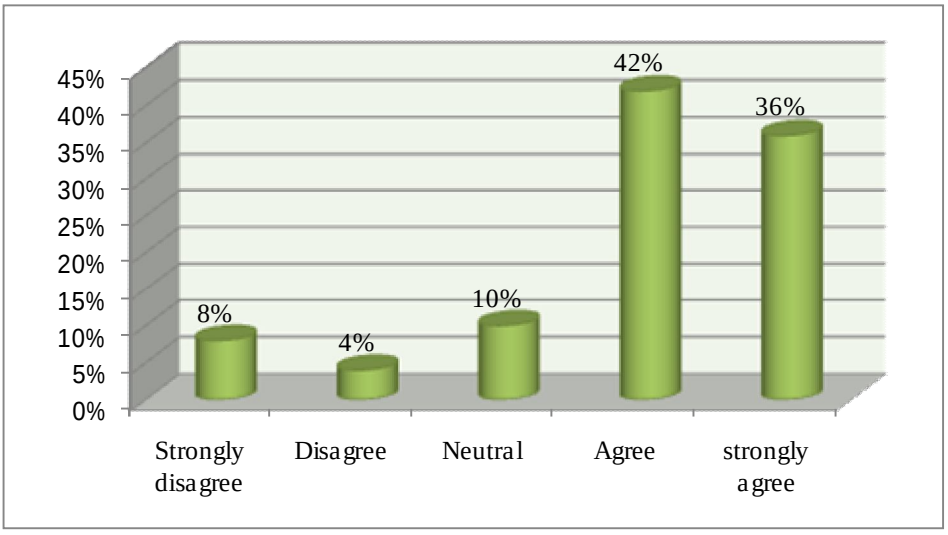


Figure (4.31) modern technology increases the students' interest in reading comprehension lesson.

The figure above reflects the responses of the students to the this statement. It shows **18** students strongly agree with the statement, **21** agree, **5** were neutral, **2**

disagree and **4** strongly disagree. These results reflect the effectiveness of modern technology in increasing the students' interest in reading comprehension lessons.

Table (4.32)S8: "Multimedia can enhance EFL students' attainment".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	2	4.0
Disagree	6	12.0
Neutral	7	14.0
Agree	22	44.0
strongly agree	13	26.0
Total	50	100.0

The students' attitudes are illustrated in table (4.32) above. The table shows that (26%) of the students strongly agree with the statement, (44%) agree, (14%) of the students are neutral, (12%) disagree and (4%) strongly disagree. As revealed by the results, this statement seems to have created some controversy among the students. Nevertheless, those who agree (66%), (26% strongly agree, 44% agree) greatly outnumber those who do not, (16%).

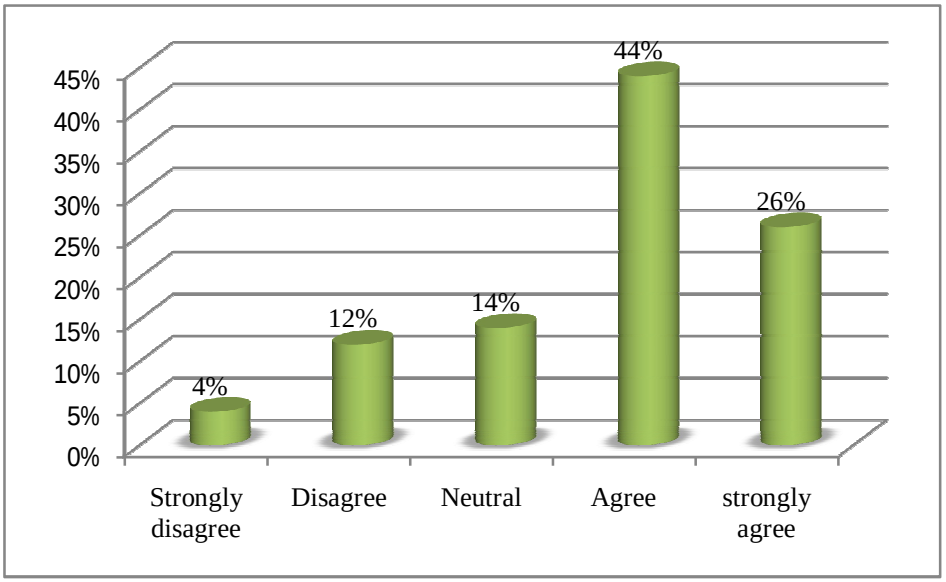


Figure (4.32) "Multimedia can enhance EFL students' attainment".

The above figure reflects the responses of the students to the this statement. It shows **13** students strongly agree with the statement, **22** agree, **7** were neutral, **6** disagree and **2** strongly disagree. These results reflect how modern technology can enhance EFL students' attainment.

Table (4.33)S9: "Multimedia increases students' motivations to develop reading skills".

Statement	Frequency	Percent (%)
Strongly disagree	2	4.0
Disagree	6	12.0
Neutral	8	16.0
Agree	14	28.0
strongly agree	20	40.0
Total	50	100.0

The students' responses are tabulated in table (4.33) above. The table shows that (40%) of the students strongly agree with the statement, (28%) agree, (16%) of the students are neutral, (12%) disagree and (4%) strongly disagree. As revealed by the results, this statement seems to have created some controversy among the students. Nevertheless, those who agree (68%), (40% strongly agree, 28% agree) greatly outnumber those who do not agree, (16%).

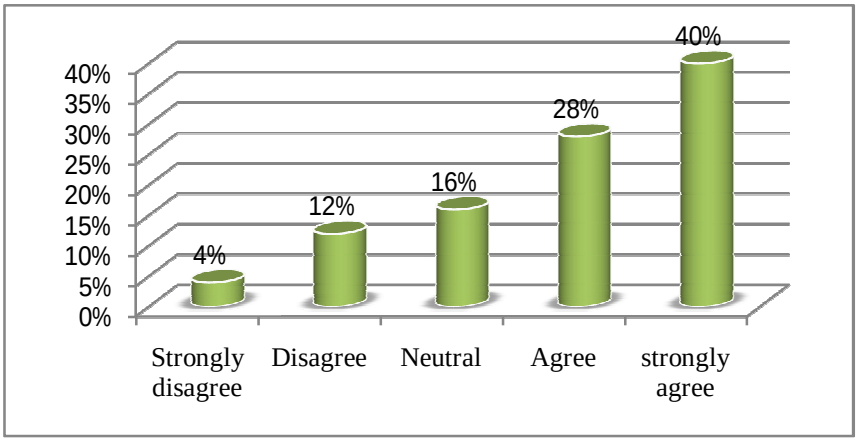


Figure (4.33) Modern technology increases students' motivation to develop reading skills.

The above figure shows the responses of the students to the this statement. It shows **20** students strongly agree with the statement, **14** agree, **8** were neutral, **6** disagree and **2** strongly disagree. These results reflect how modern technology increases students motivation to develop reading skills.

Table (4.34)S10: "Adding computer, smart board and projector to curricula can increase students' academic potentials"

Statement	**Frequency**	**Percent** (%)
Strongly disagree	2	4.0
Disagree	3	6.0
Neutral	11	22.0
Agree	16	32.0
strongly agree	18	36.0
Total	50	100.0

As it is seen from table (4.34),it shows that (36%) of the students strongly agree with the statement, (32%) agree, (22%) of the students are neutral, (6%) disagree and (4%) strongly disagree. As revealed by the results, this statement seems to have also created some controversy among the students. Nevertheless, those who agree (68%), (36%) strongly agree, (32% agree) greatly outnumber those who do not, (10%).

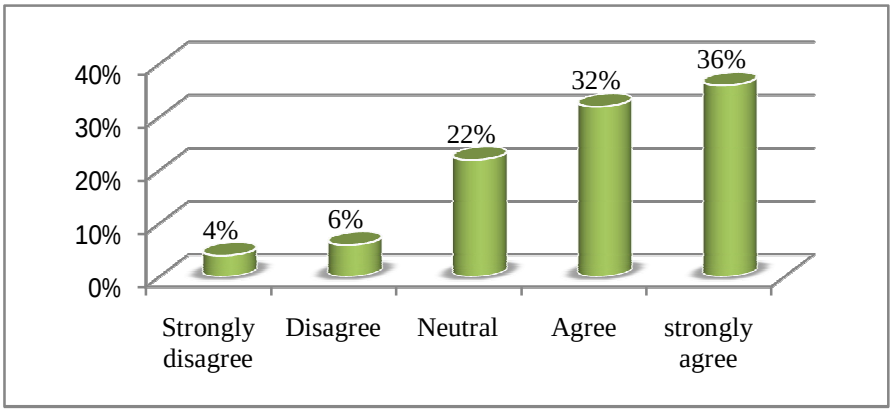


Figure (4.34) Adding computer, smart board and projector to curricula can increase students' academic potentials

The figure above shows the responses of the students to the this statement. It shows **18** students strongly agree with the statement, **16** agree, **11** were neutral, **3** disagree and **2** strongly disagree. These results reflect how the addition of the computer, smart board, and projector to the curricula can increase students academic potentials.

Section 3: This part represents *section 3* in the students' questionnaire. The statements in this group aim at investigating the students'knowledgeandskillsofdealing with multimedia. Therefore, each statement tries to collect the teachers' views as regards the idea it conveys.

Table (4.35) S1: "Multimedia is highly required in EFL classes".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	-	-
Disagree	4	8.0
Neutral	5	10.0
Agree	14	28.0
strongly agree	27	54.0
Total	50	100.0

The students ' answers are displayed in table (4.35) above.The table reveals that majority of respondents with (54%) strongly agree with the statement (28%) agree, (10%) are neutral, (8%) disagree and (0%) strongly disagree. Thus, there is nearly unanimous agreement on the part of the students as regards the idea conveyed by the statement above.

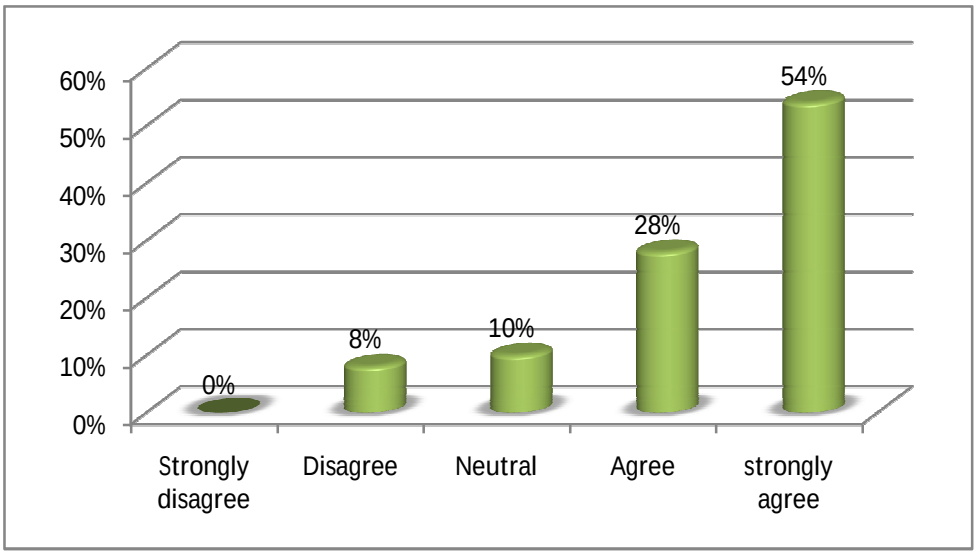


Figure (4.35) Multimedia is highly required in EFL classes

The above figure indicates the responses of the students to the this statement. It shows **27** students strongly agree with the statement, **14** agree, **5** were neutral, **4** disagree and **0** strongly disagree. These results reflect how technology usage is highly required in EFL classes.

Table (4.36)S2: "Raising multimedia awareness standard is demanded in EFL classes".

Statement	Frequency	Percent (%)
Strongly disagree	1	2.0
Disagree	2	4.0
Neutral	10	20.0
Agree	25	50.0
strongly agree	12	24.0
Total	50	100.0

The students' opinions are gathered in table (4.36) above. The table shows that (24%) of the students strongly agree with the statement, (50%) agree, (20%) of the teachers are neutral,(4%) disagree and (2%) disagree. Here, the table shows that most of the students, (74%), (24%) strongly agree, (50%) agree) are in support of the statement above. This approximate unanimity by the studentsare agree with exactly what the researcher observed.

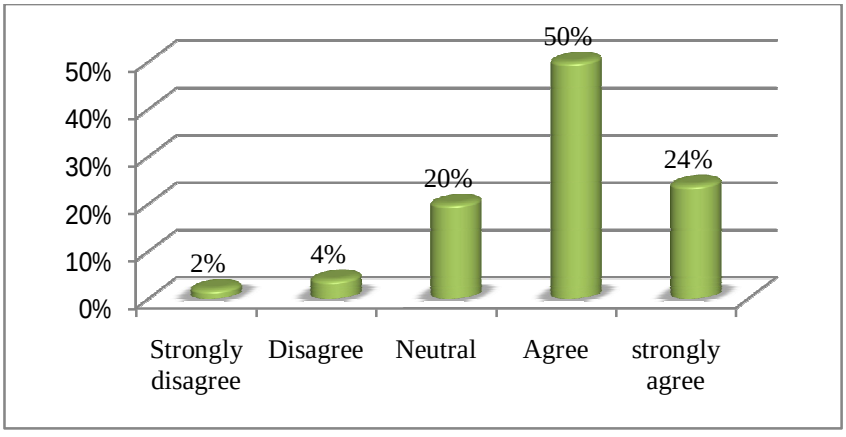


Figure (4.36) Raising multimedia awareness standard is demanded in EFL classes.

The above figure indicates the responses of the students to the this statement. It shows **12** students strongly agree with the statement, **25** agree, **10** were neutral, **2** disagree and **1** strongly disagrees. These results reflect the rise of technology awareness standard is required in EFL classes.

Table (4.37) S3: "Computer applications are very necessary for EFL classes".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	-	-
Disagree	4	8.0
Neutral	10	20.0
Agree	20	40.0
strongly agree	16	32.0
Total	50	100.0

As it can be seen from thetable (4.37) above,it shows that (32%) of the respondents are strongly agree with the statement and(40%)are agree.(20%) of the students are neutral. Whereas,(4%) are disagree and (0%) are disagree. Hereby, the table shows that most of the students, (72%), (32%) strongly agree, (40% agree) are in support of the statement above. This almost unanimity by the students, agree with exactly what the researcher experiences in English in some Sudanese universities and colleges.

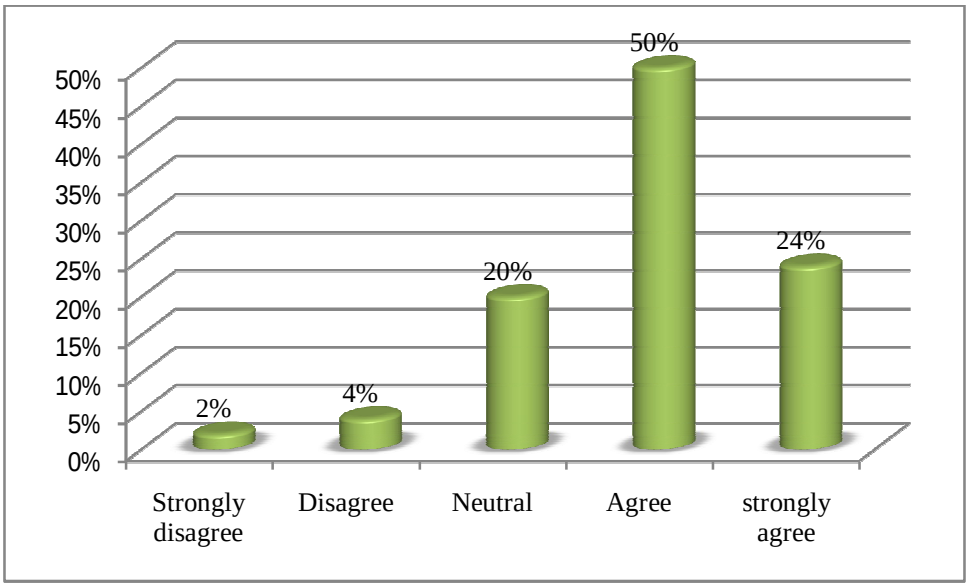


Figure (4.37) Computer applications are very necessary for EFL classes.

The above figure shows the responses of the students to the this statement. It shows **16** students strongly agree with the statement, **20** agree, **10** were neutral, **4** disagree and **0** strongly disagree. These results stress the necessity of computer applications in EFL classes.

Table (4.38)S4: "EFL learners are able to use Internet Browsers".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	3	6.0
Disagree	3	6.0
Neutral	7	14.0
Agree	19	38.0
strongly agree	18	36.0
Total	50	100.0

The students' opinions are illustrated in table (4.38) above. It shows that (36%) of the students strongly agree with the statement, (38%) agree, (14%) of the students are neutral,(6%) disagree and (6%) disagree. Here, the table shows that

most of the students, (74%), (36%) strongly agree, (38% agree) are in support of the statement above. This almost unanimity by the students, agree with the statement above that EFL learners are able to use Internet Browsers.

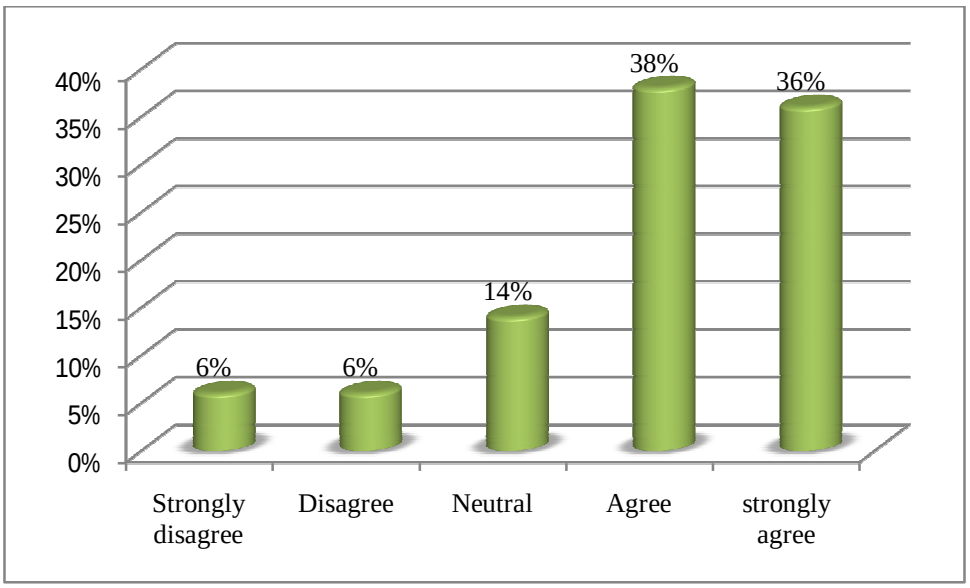


Figure (4.38) EFL learners are able to use Internet Browsers.

The above figure reflects the responses of the students to this statement. It shows **18** students strongly agree with the statement, **19** agree, **7** were neutral, **3** disagree and **3** strongly disagree. These results show the EFL learners ability to use internet browsers.

Table (4.39)S5: "EFL learners are able to create Microsoft Word Documents".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	3	6.0
Disagree	3	6.0
Neutral	16	32.0
Agree	12	24.0
strongly agree	16	32.0
Total	50	100.0

The students' replies are revealed in table (4.39) presents that (32%) of the students strongly agree with the statement, (24%) agree, (32%) of the students are impartial, (6%) disagree, and (6%) strongly disagree. Therefore, the results indicate that this statement has aroused some controversy, as the students' responses range from 'strongly agree' to 'strongly disagree'. Nevertheless, those who agree, (56%), (32% strongly agree, (24%) agree), are significantly more than those who disagree (12%), (6% disagree, 6% strongly disagree)

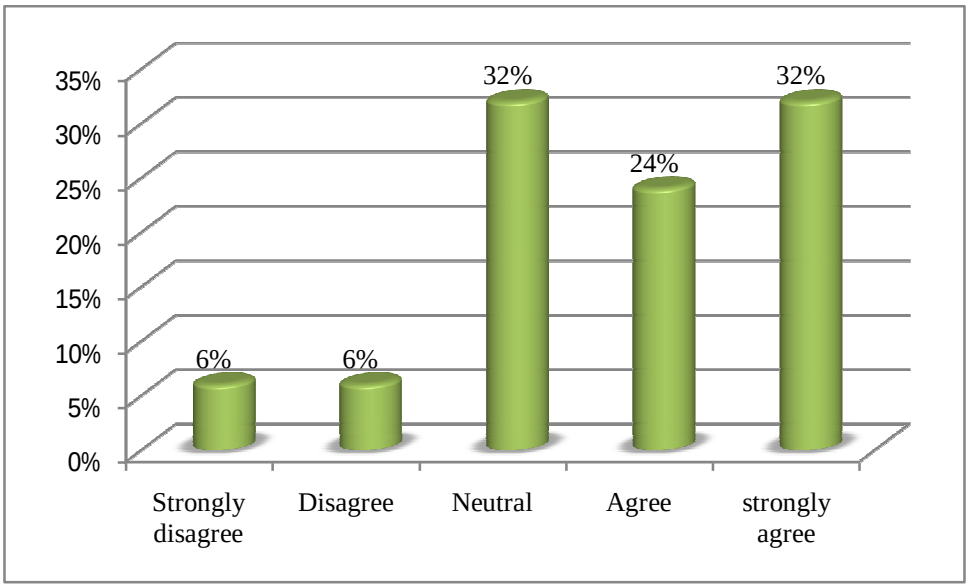


Figure (4.39) EFL learners are able to create Microsoft Word Documents.

The above figure reflects the responses of the students to the statement. It shows **16** students strongly agree with the statement, **12** agree, **16** are neutral, **3** disagree and **3** strongly disagree. These results mirror the EFL learners' ability to create Microsoft word documents.

Table (4.40) S6: "EFL learners are able to create PowerPoint slides".

Statement	**Frequency**	**Percent** (%)
Strongly disagree	1	2.0
Disagree	6	12.0
Neutral	12	24.0
Agree	16	32.0
strongly agree	15	30.0
Total	50	100.0

Table (4.40) elucidates the views of those surveyed. It shows that (30%) of the respondentsare strongly agree with the statement and(32%) are agree, (24%) of the students are neutral.(12%)are disagree and (2%)are disagree. Consequently, the students' responses are close in percentages, with (62%), (32% strongly agree, 40% agree) approval of the statement nonetheless.

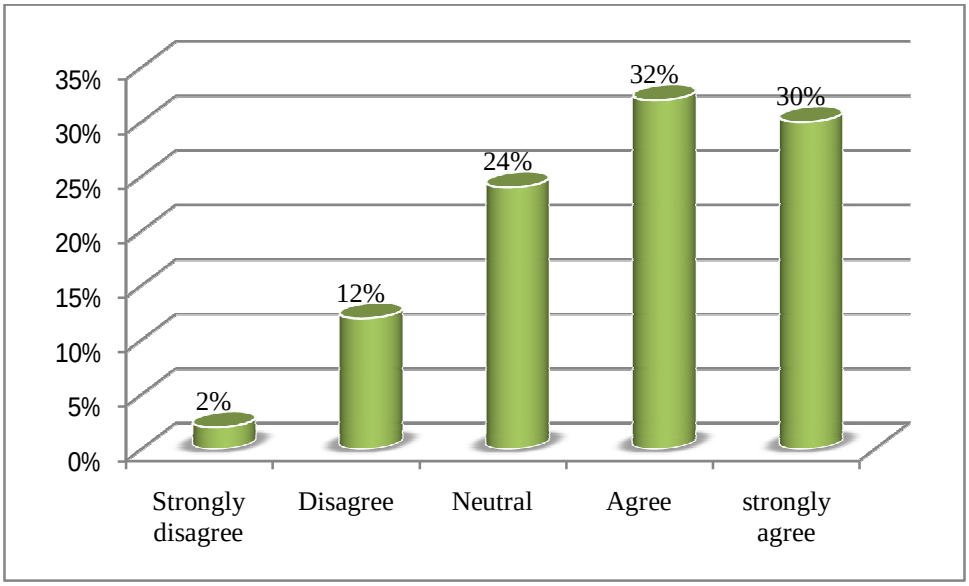


Figure (4.40) EFL learners are able to create PowerPoint slides.

The figure above reflects the responses of the students to the statement. It displays that **15** students strongly agree with the statement, **16** agree, **12** are neutral, **6** disagree and **1** strongly disagrees. Such results reflect the EFL learners' ability to create power point slides.

Table (4.41) S7: "EFL learners are able to use computer in accomplishing classroom assignments".

Statement	Frequency	Percent (%)
Strongly disagree	2	4.0
Disagree	7	14.0
Neutral	9	18.0
Agree	20	40.0
strongly agree	12	24.0
Total	50	100.0

The students' answers are shown in table (4.41) shows that (24%) of the students strongly agree with the statement, 40% agree (18%) of the students are neutral, (14%) disagree, and (4%) strongly disagree. The results indicate that this statement has aroused some controversy, as the students' responses range from 'strongly agree' to 'strongly disagree'. Nevertheless, the number of participants who agree to the statement, (64%), (24% strongly agree, (40%) agree), increasingly outnumber the those who disagree (18%), (14%) disagree (4%) strongly disagree.

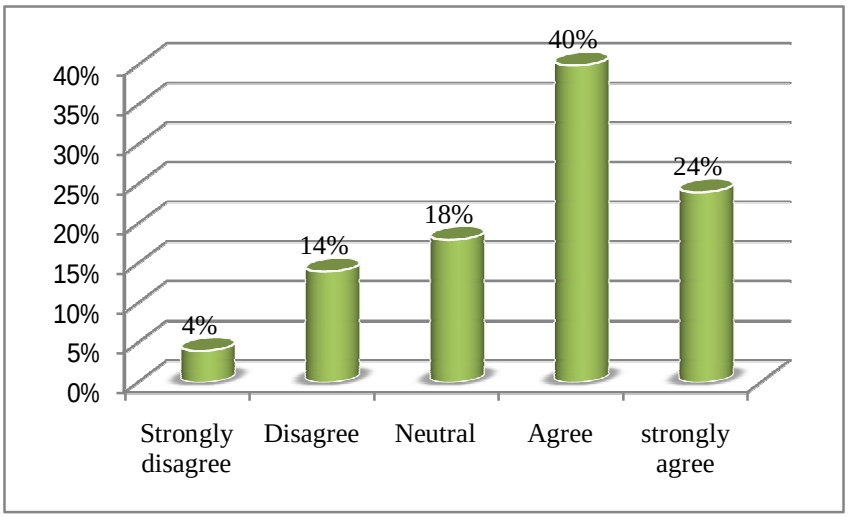


Figure (4.41) EFL learners are able to use computer in accomplishing classroom assignments.

The above figure indicates the responses of the students to this statement. It shows **12** students strongly agree with the statement, **20** agree, **9** are neutral, **7** disagree and **2** strongly disagree. These results reflect the EFL learners' ability to use computer in accomplishing classroom assignments.

Table (4.42) S8: "Multimedia triggers EFL learning environment interactively"

Statement	**Frequency**	**Percent** (%)
Strongly disagree	1	2.0
Disagree	3	6.0
Neutral	9	18.0
Agree	22	44.0
strongly agree	15	30.0
Total	50	100.0

The table (4.42) shows that (30%) of the respondents strongly agree with the statement(44%) agree (18%) of the students remain neutral (6%) disagree and (2%) strongly disagree. Here, the table shows that most of the students (74%),(30%) strongly agree, (44%) agree) approve of the statement above. This near majority by the students agrees with the statement that modern technology maintains the interaction level of EFL learning environment at a high level.

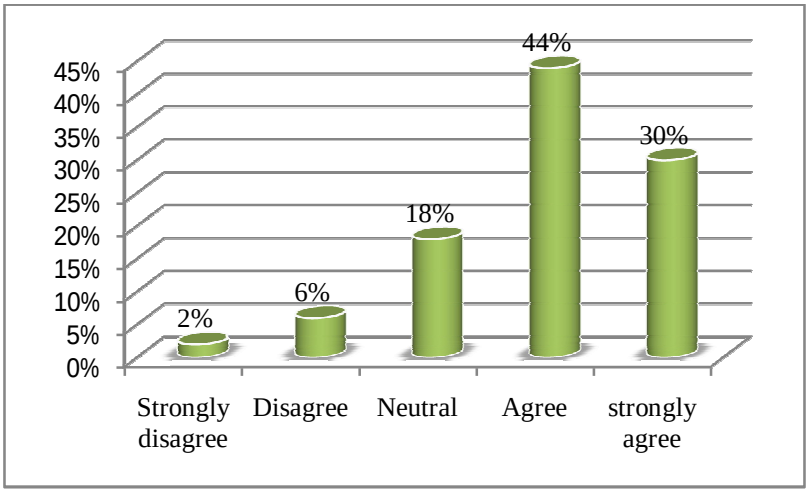


Figure (4.42) Multimedia triggers EFL learning environment interactively

The figure above illustrates the responses of the students to the statement. It shows that **15** students strongly agree with the statement, **22** agree, **9** are neutral, **3** disagree and **1** strongly disagrees. These results stress the fact that modern technology triggers the interactivity of EFL learning environment.

Table (4.43)S9: "Multimedia arouses EFL learners' interest".

Statement	**Frequency**	**Percent (%)**
Strongly disagree	3	6.0
Disagree	3	6.0
Neutral	7	14.0
Agree	21	42.0
strongly agree	16	32.0
Total	50	100.0

The students' opinions are tabulated in table (4.43) above. It shows that (32%) of the students strongly agree with the statement, (42%) agree, (14%) of the students are neutral, (6%) disagree and (6%) disagree. Here, the table shows that most of the students, (74%), (32%) strongly agree, (42% agree), are in support of the statement above. This almost unanimity by the students, agree with the statement above that multimedia increases EFL learners' desire to learn.

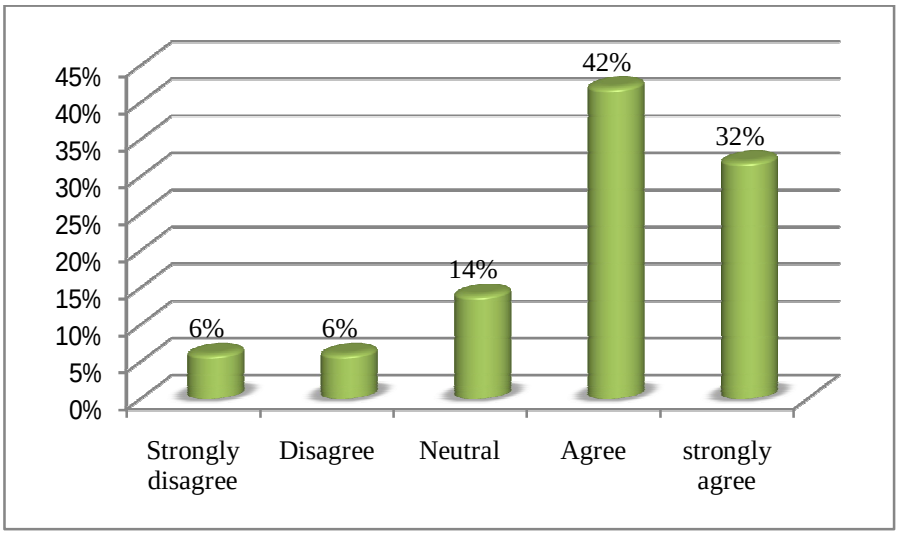


Figure (4.43) Multimedia arouses EFL learners' interest

The above figure shows the responses of the students to the statement. It shows **16** students strongly agree with the statement, **21** agree, **7** are neutral, **3** disagree and **3** strongly disagree. These results prove the fact that multimedia arouses EFL learners' interest.

Table (4.44)S10: "Multimedia keeps EFL learning up to date".

Statement	Frequency	Percent (%)
Strongly disagree	1	2.0
Disagree	4	8.0
Neutral	9	18.0
Agree	15	30.0
strongly agree	21	42.0
Total	50	100.0

The table (4.44) shows that (42%) of the students strongly agree with the statement and(30%) agree.(18%) ofthe students are neutral. While,(8%) are disagree and (2%)are strongly disagree. What is remarkable about these results is that agreement on the part of the students is almost unanimous, 72% strongly agree, with only 10% of the students expressing their disagreement.

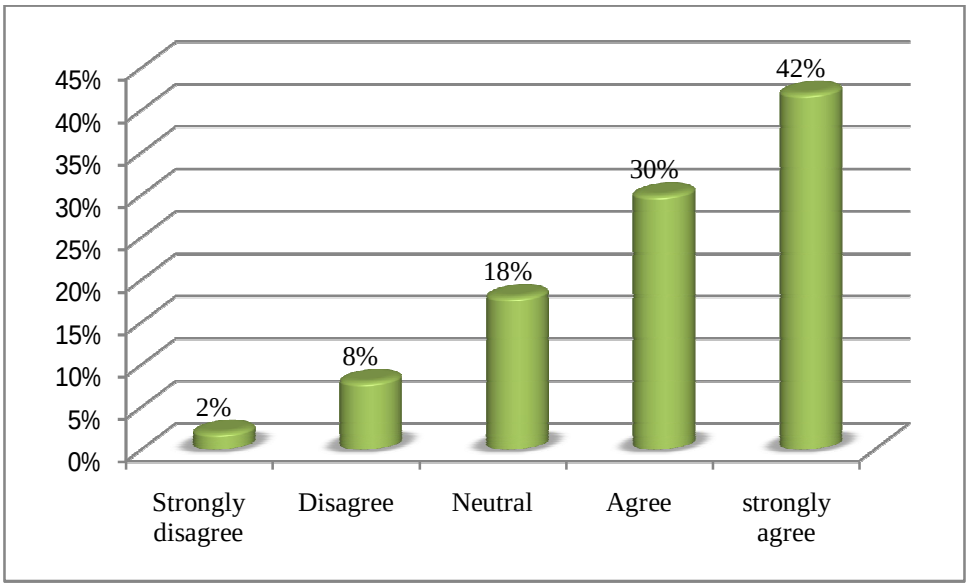


Figure (4.44) Multimedia keeps EFL learning up to date

The above figure reflects the responses of the students to the statement. It shows **21** students strongly agree with the statement, **15** agree, **9** are neutral, **4** disagree and **1** strongly disagrees. These results stress the fact that modern technology contributes to the advancement of EFL learning.

Part 3: Analyasis of Test

4.3 The Analysis of the Test in Relation to Testing the Hypotheses

4.3.1 One-sample T-test for the First Hypothesis

H1: Sudanese EFL teachers are enthusiastic about incorporating multimedia in teaching EFL.

Table (4.45)

Expected mean	Observed mean	St.d	t-value	d.f	p-value
11	14.86	2.03	14.93	48	0.00

The table (4.45) shows that the p-value (0.00) represents a lower figure than the significance level and the observed mean (14.86) is bigger than the expected mean (11), which in turn emphasize the researcher's hypothesis that *"Sudanese English teachers are enthusiastic about incorporating multimedia in EFL field."*

4.3.2 One Sample T-test for the Second Hypothesis

H2: Using modern technology in teaching reading skills is a prerequisite for Sudanese EFL learners.

Table (4.46)

Expected mean	Observed mean	St.d	t-value	d.f	p-value
11	13.48	2.31	6.40	48	0.00

As the table (4.46) above illustrates, it is clear that the p-value (0.00) is less than the significance level, and the observed mean (13.48) is larger than the predictable mean (11). Therefore, these results confirm the researcher's hypothesis that "*Using*

modern technology in teaching reading skills is a prerequisite for Sudanese EFL teachers".

4.3.3 One Sample T-test for the Third Hypothesis

H3: Multimedia enhances students' ability to develop reading skills.

Table (4.47)

Expected mean	Observed mean	St.d	t-value	d.f	p-value
11	14.26	2.46	4.60	45	0.00

As the table (4.47) above shows that the p-value (0.00) is less than the significance level; the observed mean (14.26) is noticeably bigger than the expected mean (11). Thus, these results, in fact, confirmed the researcher's hypothesis number two which is *"Modern technology increases students' motivation to develop reading skills"*.

Table (4.48): Independent Sample T-test between the Pre-& Posttest

Test	Means	STD	T-test Value	Df	Sig
Pre-test	4.33	2.26	4.81	58	0.00
Post-test	7.03	2.07			

The result in the table above illustrates that there is a significant difference between the means of the students' performance in the pre-test and the ones in the post-test. It is noticed that the expected means in the post-test is greater than the expected means in the pre-test, which reflects a substantial dissimilarity between the students' performance in both tests, where the sig value 0.00 is less than 0.05.

4.4 Summary

This chapter analyzed and discussed the quantitative data collected by the research instruments. The analysis and discussion of data aimed at providing answers to the research questions and testing the hypotheses of the study.

Chapter Five

Main findings, Conclusion,Recommendations and Suggestions for Further Studies

5.0 Introduction

This chapter presents the conclusion of the study. On the basis of the analysis and discussion of data carried out in chapter four, the hypotheses of the study will be verified, and the research questions will be answered.

5.1 Verification and credibility of the Hypotheses

Below is a summary of the results which verify the hypotheses and answer the questions.

- **One-sample T-test for the First Hypothesis**

According to the table (4.45), it is clear that the p-value (0.00) is less than the significance level and the observed mean (14.86) is bigger than the expected mean (11). These results, in fact, confirm the researcher's hypothesis number one which is *"Sudanese English teachers are enthusiastic about incorporating multimedia in EFL field."*

- **One-sample T-test for the Second Hypothesis**

According to table (4.46) statistics; the p-value (0.00) registers higher than the significance level, and the observed mean (13.48) is bigger than the expected mean (11). Thus, these results reaffirm the researcher's hypothesis number two which is "*Using multimedia in teaching reading skills is a prerequisite for Sudanese EFL teachers"*.

➢ One-sample T-test for the Third Hypothesis

According to the table(4.47), it is clear that the p-value (0.00) is less than the significance level, the observed mean (14.26) is bigger than the expected mean (11). Thus, these results, in fact, confirmed the researcher's hypothesis number two which is *"Modern technology increases students' motivation to develop reading skills"*.

➢ Paired Sample T-test for the Hypotheses

According to the table (4.47), the result shows that there is a significant difference between the means of the students' performance in the pre-test and post-test. It is noticed that the expected means in the post-test is greater than the expected means in the pre-test, which reflects a significant difference between the students' performance in both tests where the sig value 0.00 is less than 0.05.

Therefore, it is concluded that there are statistically significant differences between the performance of the students before the incorporation of Multimedia in teaching and after it. The change is a positive one in favor of Multimedia teaching approach.

5.2 Research Questions

This section provides answers to the research questions.

➢ Research Question One

To What extent Sudanese English language teachers are enthusiastic about incorporating multimedia in the field of EFL?

- ❖ According to teachers' responses in the table (4.4, 4.6, 4.9, 4.13), they agreed that there are a number of factors which reflects what extent Sudanese language teachers are enthusiastic about incorporating Multimedia in the field of EFL. These factors are:

- Most teachers are enthusiastic to try the interactive multimedia's tools in EFL classroom.
- Most of the teachers also support that PowerPoint helps effectively deliver reading skills lessons.
- The majority of English teachers confirmed that their performance is satisfactory when using multimedia in teaching reading skills

➢ Research Question Two

On what way can use multimedia in teaching reading skills is a prerequisite for Sudanese EFL learners?

The teachers and students responses in the table (4.15, 4.16, 4,19, 4,20, 4,21, 4.22, 4,29, 4,30, 4,38, 4,40) agreed that there are many ways whereby using multimedia in teaching reading skills is a prerequisite for Sudanese EFL teachers. These ways are:

- Trying multimedia is recommended in teaching reading skills.
- EFL teachers are prepared to use smart board to teach reading skills.
- EFL teachers are prepared to use in focus projector to teach reading skills.
- EFL teachers prepared to use computer to teach reading skills.
- Adding Multimedia enhances EFL learning environment.
- In focus, projector makes the reading passage more attractive.
- Multimedia is highly required in EFL classes.
- Raising multimedia awareness standard is demanded in EFL classes.
- Computer applications are very necessary for EFL classes.

Research Question Three

How can multimedia enhance students' ability to develop reading skills?

❖ According to students' responses in the table (4.27, 4.29, 4.29, 4.30, 4,31, 4,32, 4,34, 4,40) in reply to this question, that there are different trends whereby they could follow using multimedia. These trends are:

- Computer, smart board, and projector make the reading passage understandable.
- Computer programs help to get the meaning from texts easily.
- Smartboard helps to scheme texts in short time.
- Computer is helpful in developing EFL reading skills.
- Using computer, smart board and projector help accomplish reading comprehension exercises
- Multimedia increases students' interest in reading comprehension lesson.
- Multimedia increases students' motivations to develop reading skills.
- Multimedia keeps EFL learning up to date.

5.3 Main Findings

- Sudanese English teachers are enthusiastic about incorporating multimedia in EFL field.
- Most of the teachers are enthusiastic to try the interactive multimedia's tools in EFL classroom.
- Most of the teachers also support that PowerPoint helps effectively deliver reading skills lessons.
- The majority of English teachers confirmed that their performance is satisfactory when using multimedia in teaching reading skills
- Using multimedia in teaching reading skills is a prerequisite for Sudanese EFL teachers.

- Trying multimedia is recommended in teaching reading skills.
- EFL teachers are prepared to use smart board to teach reading skills.
- EFL teachers are prepared to use in focus projector to teach reading skills.
- EFL teachers prepared to use computer to teach reading skills.
- Adding Multimedia enhances EFL learning environment.
- In focus, projector makes the reading passage more attractive.
- Multimedia is highly required in EFL classes.
- Raising multimedia awareness standard is demanded in EFL classes.
- Computer applications are very necessary for EFL classes.
- multimedia enhances students' ability to develop reading skills
- Computer, smart board, and projector make the reading passage understandable.
- Computer programs help to get the meaning from texts easily.
- Smart board helps to scheme texts in short time.
- Computer is helpful in developing EFL reading skills.
- Using computer, smart board and projector help accomplish reading comprehension exercises
- Multimedia increases students' interest in reading comprehension lesson.
- Multimedia increases students' motivations to develop reading skills.
- Multimedia keeps EFL learning up to date.

5.4 Recommendations

This is an area of investigation which is still in its infancy in Sudan. A lot of research is needed to arrive at more conclusive results. The researcher offers the following suggestions:

1. The application of Multimedia & technology in EFL learning must be based on a number of considerations such as learners' attitudes and teacher knowledge of multimedia use.

2. New trends, approaches, and methods should be offered to equip teachers and students with the knowledge of computers at universities and colleges.

3. Training on designing electronic materials must be conducted to create teachers of good command use of technology in EFL field.

4. University curriculum must incorporate some courses about the use of multimedia, computers courses into learning and teaching of English.

5. The incorporation of multimedia into methods, approaches, and techniques of learning EFL.

6. Sudanese EFL teachers must realize that their utilization of computer applications in EFL teaching is highly desirable apart of Sudanese EFL learners.

7. Multimedia in EFL classes could possibly reap many rewards for Sudanese EFL learners.

8. Ministry of Education should provide and equip universities and teachers with information communication technology facilities.

9. Ongoing workshops must be conducted, teachers need to attend workshops related to the effectiveness of multimedia on student achievement.

10. Interactive multimedia must be part of Sudanese EFL teachers' education.

10. Authority and ELT experts may contribute in preparing English language teachers by organizing ELT conferences and seminars in innovative modern instruction.

11. EFL Sudanese learners must be trained to be able to interact with multimedia to learn in the classroom.

5.5 Suggestions for Further Research

The researcher suggests the following as recommendations for potential areas for future research. These suggestions are the result of queries by the researcher during the conduction of the study:

1. The use of Multimedia in learning EFL skills.

2. The effect of CALL and learners autonomy

3. The impact of multimedia approach in teaching applied linguistics.

4. Investigating methods of improving students' performance with electronic approaches.

5. The effect of modern technology on second language acquisition.

3. The role of multimedia in improving language learning environment.

6. The relationship between multimedia and teachers' perceived competency.

7. Multimedia: usage and applications in higher education.

8. General courses in computer applications are not sufficient to prepare Sudanese EFL teachers to incorporate multimedia incentives in EFL classroom.

9. Computers systems are not available for teaching purposes in most of the schools.

10. The present study is limited to university level. However, there is also a need for carrying out research entitled: “Incorporating Multimedia into the Basic Level and also at Secondary Level”.

5.6 Summary

This chapter summarizes the results of the data analysis and discussion. It checks the hypotheses and concludes that incorporating Multimedia in EFL field has a positive effect on developing the students’ reading comprehension skills. It also provides answers to the research questions and shows that Multimedia brings about positive change which is statistically significant in the performance of the students and that the teachers and students perceive using Multimedia as a method of learning EFL which can affect the process of learning in a positively valued direction. The chapter also suggests some areas for further research.

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AGENCY Office of Educational Research and Improvement (ED), Washington, DC. PUB DATE 1997-00-00 NOTE 32p. Carla Meskill is Professor, Department of Educational Theory and Practice, at the University at Albany, State University of New York. Her research and teaching explores new forms of technology use in language education as well as the influences of new technologies on developing language and literacy practices. In tandem, her work explores the nature of electronic literacy and its centrality in teacher professional development. On these and related topics she has published widely. Dr. Meskill is the former director of the Technology Assisted Language Learning (TALL) project, Language Advocacy Project (LAP), co-editor of MERLOT and currently serves as associate editor of Language Learning Technology.

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Appendices

Appendix One: Students'Test

SUDAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

College of Graduate Studies

College of Education

Department of English Language

Students' Test

Please read the following passage and answer all questions

A- The modern age is an age of electricity. People are so used to electric lights, radio, televisions, and telephones that it is hard to imagine what life would be like without them. When there is a power failure, people grope about in flickering candlelight. Cars hesitate in the streets because there are no traffic lights to guide them, and food spoils in silent refrigerators.

B- Yet, people began to understand how electricity works only a little more than two centuries ago. Nature has apparently been experimenting in this field for millions of years. Scientists are discovering more and more that the living world may hold many interesting secrets of electricity that could benefit humanity.

C- All living cells sent out tiny pulses of electricity. As the heart beats. it send out pulses of recorded electricity; they come form an electrocardiogram, which a doctor can study to determine how well the heart is working. The brain, too, sends out brain waves of electricity, which can be recorded in an electroencephalogram. The electric currents generated by most living cells are extremely small-of-ten so small that sensitive instruments are needed to record them. But in some animals, certain muscle cells have become so specialized as electrical generators that they do not work as muscle cells at

all. When large numbers of these cells are linked together, the effects can be astonishing.

D- The electric eel is an amazing storage battery. It can send a jolt of as much as eight hundred volts of electricity through the water in which it lives. An electric house current is only one hundred twenty volts. As many as four fifths of all the cells in the electric eel's body are specialized for generating electricity, and the strength of the shock it can deliver corresponds roughly to the length of its body.

Please read each question carefully and circle (A, B, C or D) that mostly matches your answer.

.1. What is the main idea of the passage?

(A) Electric eels are potentially dangerous

(B) Biology and electricity appear to be closely related

(C) People would be at a loss without electricity

(D) Scientists still have much to discover about electricity

2. The author mentions all of the following as results of a blackout EXCEPT

(A) refrigerated food items may go bad

(B) traffic lights do not work

(C) people must rely on candlelight

(D) elevators and escalators do not function

3. Why does the author mention electric eels?

(A) To warn the reader to stay away from them

(B) To compare their voltage to that used in houses

(C) To give an example of a living electrical generator

(D) To describe a new source of electrical power

4. How many volts of electricity can an electric eel emit?

(A) 1,000 (B) 800 (C) 200 (D) 120

5. It can be inferred from the passage that the longer an eel is the

(A) more beneficial it will be to science (B) more powerful will be its electrical charge (C) easier it will be to find (D) tougher it will be to eat

6. The word them in line 3 refers to

(A) people (B) electric devices (C) electruc lights (D) modern ages

7. the word "they" in line 19 refers to

(A) animals (B) organs (C) electrical generators (D) muscle cells

8. The word "tiny" in line 11 is closest in meaning to which of the following.

(A) invisible (B) small (C) micro (D) little

9. The word "jolt" in line 20 is closest in meaning to which of the following

(A) shock (B) beat (C) hit (D) pulse

10. The author mentions all of the following electric devices EXCEPT

(A) mobiles (B) radios (C) televisions (D) telephones

11. The last paragraph most probably discusses

(A) electric currents (B) electric cells (C) electric waves (D) electric eels

12. According to the passage, when did people get how electricity works

(A) two centuries (B) more than two centuries (C) little more than two centuries (D) few centuries

Appendix Two: Teachers'Questionnaire

Sudan University of Science & Technology

College of Graduate Studies

College of Education

Dear colleague,

The below questionnaire will take few minutes to complete. Thank you for your time and effort in helping to make this study possible.

I am currently doing a research project for my PhD in English language which requires the collection of valuable data from my esteemed colleagues and students. I am looking at teachers' views and perception of their teaching practice.

I would be very grateful if you could complete the questionnaire and hand it back to me. Although I have asked you to provide your name on the questionnaire, this data will be kept confidentially and will only be used for study purposes. In addition, a pseudo-name will be used in place of your name which means that your identity will not be disclosed.

Please provide your answers sincerely and do not leave anything unanswered. Again, thank you very much for giving up your free time to complete this questionnaire. Your help is very much appreciated.

Mogahed Ali

Title of the Study

"Investigating the Effect of Integrating Multimedia in Developing EFL Cognitive Learning"

Section1: Respondents' Profile

Please read each question carefully and circle or write your answer.

1. Name: (optional)	
2. Gender	male female
3.Qualifications	PhD ( ) MA ( ) BA ( ) Other
4. Years of Experience	1-5 ( ) 6-10 ( ) 11-15 ( ) 16-20 ( ) 21-more ( )

Section 2. Questions about Teachers' Views about Using Multimedia in EFL Classes

Please read each statement carefully and circle a number from 1 to 5 that mostly matches your level of agreement.

Strongly Agree=1, Agree=2, Neutral=3, Disagree=4, Strongly Disagree=5

No	The statements	1	2	3	4	5
1	I prefer using multimedia in teaching reading skills.	1	2	3	4	5
2	Multimedia is complicating lesson delivery.	1	2	3	4	5
3	My performance is satisfactory when using multimedia in teaching reading skills.	1	2	3	4	5
4	Adding multimedia in teaching reading skills is time consuming.	1	2	3	4	5
5	I hesitate to use Microsoft Office Program to elicit the general idea of the text. .	1	2	3	4	5
6	Power Point helps to deliver reading skills lessons.	1	2	3	4	5
7	Teaching reading skills by using multimedia is required.	1	2	3	4	5
8	Using computer, smart board and projector motivate EFL learners.	1	2	3	4	5
9	Multimedia is developing reading skills.	1	2	3	4	5
10	. I am enthusiastic to try the interactive multimedia tools in EFL classroom.	1	2	3	4	5

Section 3: Question about Teachers' Knowledge and Skills of Multimedia

Please read each statement carefully and circle a number from 1 to 5 that mostly matches your rate of knowledge level.

Strongly Agree=1, Agree=2, Neutral=3, Disagree=4, Strongly Disagree=5

No	The statements	1	2	3	4	5
1	Trying technology knowledge is recommended in teaching reading skills.	1	2	3	4	5
2	Developing multimedia knowledge level is required.	1	2	3	4	5
3	Computer applications can be utilized in teaching reading skills.	1	2	3	4	5
4	EFL teachers are capable to administer Power Point Presentations.	1	2	3	4	5
5	EFL teachers prepared to use smart board to teach reading skills. .	1	2	3	4	5
6	EFL teachers are prepared to use in focus projector to teach reading skills.	1	2	3	4	5
7	EFL teachers are prepared to use computer to teach reading skills .	1	2	3	4	5
8	Adding multimedia enhances EFL learning environment.	1	2	3	4	5
9	Multimedia use disturbs EFL learners.	1	2	3	4	5
10	Multimedia use keeps EFL teaching up to date.	1	2	3	4	5

If you have any questions about the questionnaire, please do not hesitate in contacting me on mogahedali83@gmail.com. Thank you for your time in completing this questionnaire. To reiterate, this data will be treated confidentially, will only be used for study purposes and a pseudo-name will be used in place of your name.

Appendix Three: Students'Questionnaire

Sudan University of Science & Technology

College of Graduate Studies

College of Education

Dear student,

The below questionnaire will take approximately **10** minutes to complete. Thank you for your time and effort in helping to make this study possible.

I am currently doing a research project for my PhD in English language which requires the collection of valuable data from my esteemed colleagues and students. I am looking at students' views and perception of their learning practice.

I would be very grateful if you could complete the questionnaire and hand it back to me. Although I have asked you to provide your name on the questionnaire, this data will be kept confidentially and will only be used for study purposes. In addition, a pseudo-name will be used in place of your name which means that your identity will not be disclosed.

There are no right or wrong answers to each question. Please provide your answers sincerely and do not leave anything unanswered. Again, thank you very much for giving up your free time to complete this questionnaire. Your help is very much appreciated.

Mogahed Ali

Title of the Study:

"Investigating the Effect of Integrating Multimedia in Developing EFL Cognitive Learning"

Section1: Respondents' Profile

Please read each question carefully and circle or write your answer.

1. Name: (optional)	
2. Age	20-25 25-30 30-35 35-40 Other
3. Gender	Male ( ) Female ( )

Section 2. Students' Views about Using Multimedia in EFL Classes

Please read each statement carefully and circle a number from 1 to 5 that mostly matches your level of agreement.

Strongly Agree=1, Agree=2, Neutral=3, Disagree=4, Strongly Disagree=5

No	The statements	1	2	3	4	5
1	Computer, smart board and projector make the reading passage understandable.	1	2	3	4	5
2	Computer programs help to get the meaning from the texts. .	1	2	3	4	5
3	Smart board helps to scheme the texts in short time. .	1	2	3	4	5
4	In focus projector makes the reading passage attractive.	1	2	3	4	5
5	Computer is necessary to develop EFL reading skills.	1	2	3	4	5
6	Using computer, smart board and projector help to complete reading comprehension exercises.	1	2	3	4	5
7	Multimedia increases interest in reading comprehension lesson.	1	2	3	4	5
8	Multimedia is bettering students' grades.	1	2	3	4	5
9	Multimedia increases students' motivations to develop reading skills.	1	2	3	4	5
10	Adding computer, smart board and projector to curricula can increase students' attendance.	1	2	3	4	5

Section 3: Students' Knowledge and Skills of Multimedia

Please read each statement carefully and circle a number from 1 to 5 that mostly matches your rate of knowledge level.

Strongly Agree=1, Agree=2, Neutral=3, Disagree=4, Strongly Disagree=5

1	Technology knowledge is required in EFL classes.	1	2	3	4	5
2	Developing technology knowledge level is required in EFL classes. .	1	2	3	4	5
3	Computer applications are necessary in EFL classes. .	1	2	3	4	5
4	**EFL learners are able to use Internet Browsers.**	1	2	3	4	5
5	**EFL learners are able to** create Microsoft Word Documents.	1	2	3	4	5
6	**EFL learners are able to** create PowerPoint Presentations.	1	2	3	4	5
7	**EFL learners are able to** use computer to complete classroom assignments.	1	2	3	4	5
8	Multimedia is bettering EFL learning environment recently.	1	2	3	4	5
9	Multimedia rises EFL learners' interest.	1	2	3	4	5
10	Multimedia keeps EFL learning up to date.	1	2	3	4	5

If you have any questions about the questionnaire, please do not hesitate in contacting me on mogahedali83@gmail.com. Thank you for your time in completing this questionnaire. To reiterate, this data will be treated confidentially, will only be used for study purposes and a pseudo-name will be used in place of your name.

Appendix Four: The Photo of Students Whom Were Taught Through Multimedia

Appendix Five: The Photo of Students While Being Pretested

Appendix Six: The Photo of StudentsWhile Being Post tested